



Health and Wellbeing of Prisoners 2023

The Wattu IV Prison Population Study Finland

Mika Rautanen
Kennet Harald
Sasu Tyni
(eds.)



REPORT 3/2024

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Finnish Institute for
Health and Welfare

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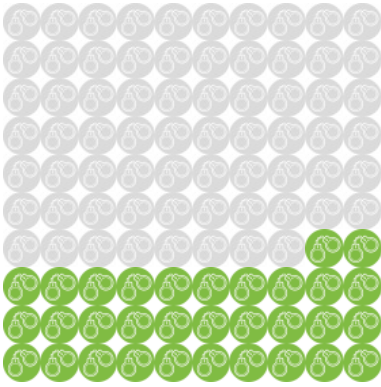
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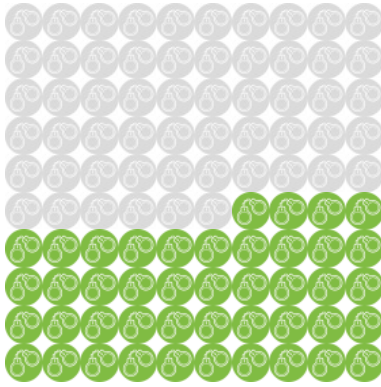
PunaMusta Oy 2024

”Depends on how I’ll be able to get an active life that satisfies me in many ways without messing around. I’m working on it, but unless I can find a solution, I’ll be back.”

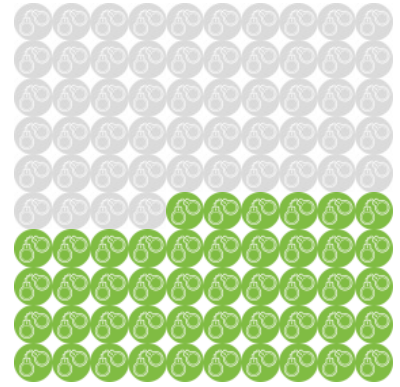
– Prisoner’s answer to the study question What do you think you will do five years after release?



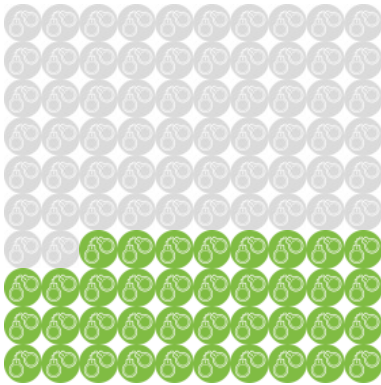
Dental damage due to violence (32%)



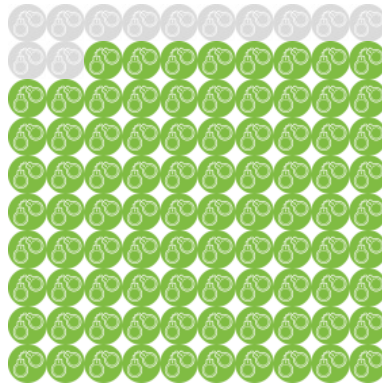
Men who have injected doping agents (43%)



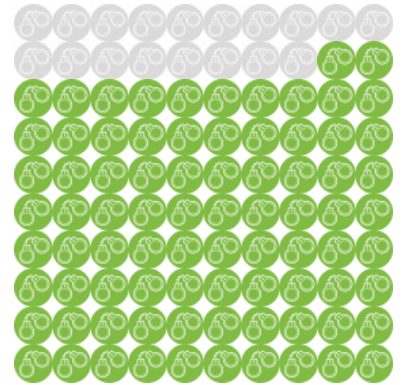
Men with ADHD features (46%)



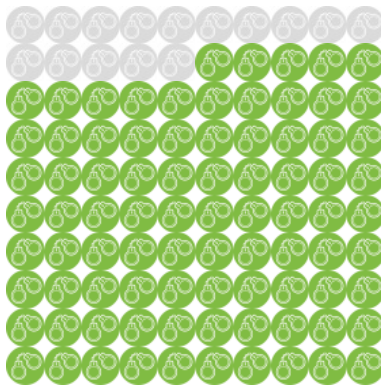
Self-reported hepatitis C without treatment (38%)



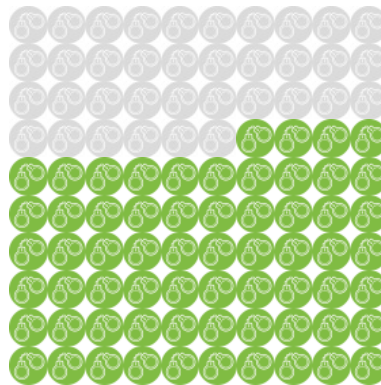
Men with any life-long substance abuse disorder (88%)



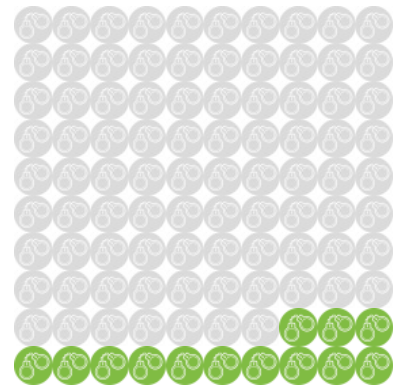
Women with any life-long substance abuse disorder (82%)



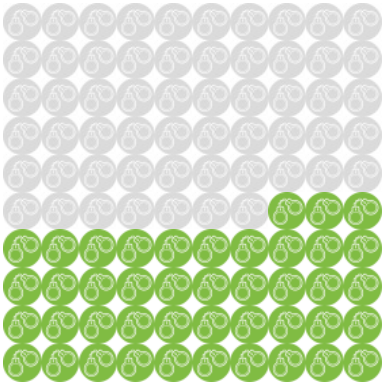
Daily smoking women (85%)



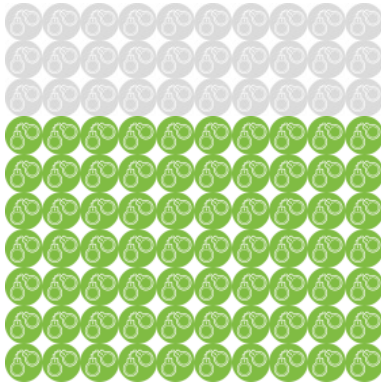
Daily smoking men (64%)



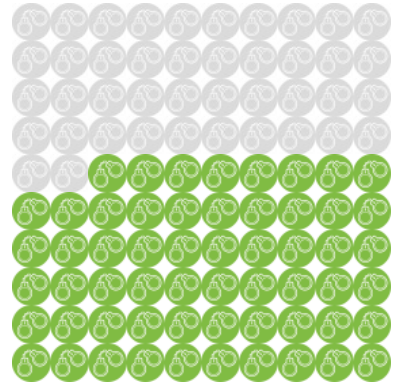
Women meeting the criteria for autism features (13%)



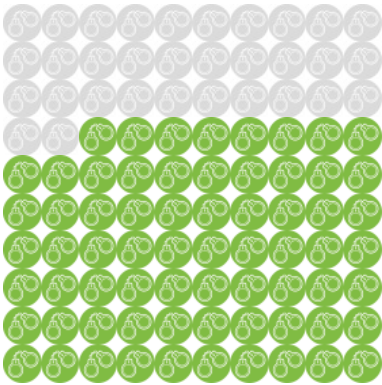
Women with ADHD features (43%)



Prisoners with ADHD features with prior disciplinary isolation (70%)

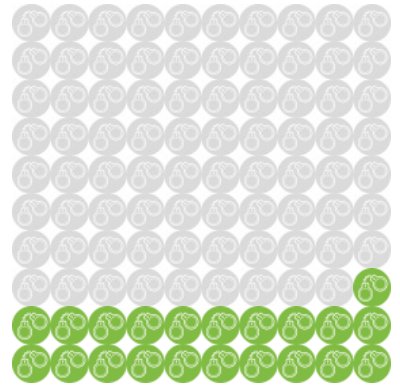


No certainty about residence after release (58%)

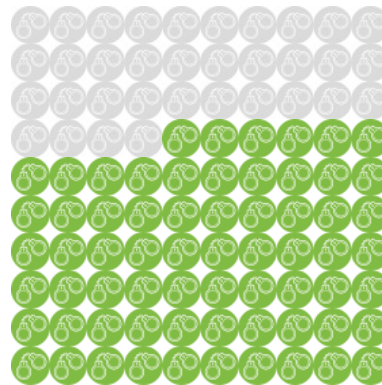


Prisoners experiencing pain (68%)

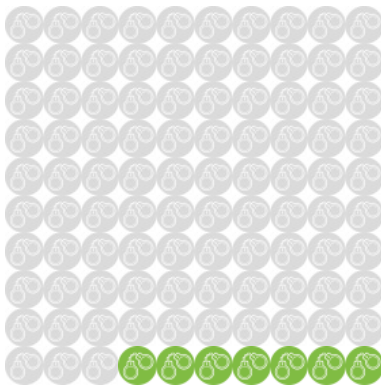
HUNDRED PRISONERS OUT OF HUNDRED PRISONERS



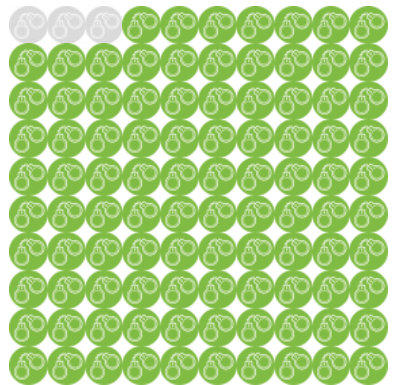
Very poor sense of inclusion (21%)



Prisoners with prior sharing of IV drug equipment in prison (66%)



Prisoners with opioid use before incarceration for whom substitution treatment has been started in prison (7%)



Women who have experienced physical violence during their lifetime (97%)



EMPOWER- ERING PRISONER

HEALTH STUDY

PARTICIPATE – GET TO KNOW YOUR HEALTH
BETTER AND HAVE AN IMPACT ON THE SERVICES
BELONGING TO ALL PRISONERS

- 1 You'll get an invitation letter
- 2 You'll meet the study nurse
- 3 You'll go through a health examination
- 4 Extra studies are oral health, mental health and blood sample

▶▶▶▶
The aim of the study is to examine 500
prisoners' health and need for services.
The study is conducted in Finnish.
Participants are chosen in a random way.
Participation is voluntary.

Undersökningen
genomförs på finska.

The research is
conducted in Finnish.

Uurimus tehakse
soome keeles.

Опрос проводится на
финском языке.

نعمل البحث في فنلندي

Preface

Carrying out a population study resembles an expedition. It helps us draw an increasingly accurate map. Meanwhile, a prison population study is like sailing to the white waters on a map—going to a place we still know little about. Both have the same goal: to help society better understand its citizens to meet their needs.

While a prison study aims to find answers to how prisoners are doing, focusing on imprisonment alone is not an adequate goal. We have to look further and see what broader meaning there is to knowing about people in prison at a given time, and what imprisonment means for health.

Imprisonment is the *panopticon* of health and welfare. I remember feeling startled when I learned how a prison dating back to the 1800s built using this central inspection model looks like. The idea of the *panopticon* is to enable the simultaneous and continuous monitoring of all prisoners through architecture. For good reason, the model has been rejected as inhumane in modern construction.

Whatever the construction method, prisoners are nonetheless still under observation. However, the view has changed, as these days, we associate punishment with the potential for change. Now, we will take a closer look at which prerequisites prisoners have for doing things differently, what is their motivation and under which conditions they live before and after their imprisonment. The *panopticon* is no longer a building, it is a *time window* that imprisonment opens into the health of a marginalised population.

People only spend a certain amount of time of their lives in prison, and prisoner turnover is high. In other words, imprisonments start and end every day, and a continuous stream of remand prisoners and default prisoners, first-timers and repeat offenders is passing through the prison

gates. Data collected from prisoners at a specific point in time therefore complement a broader and more general understanding of citizens, while in the bigger picture, prisoners as individuals merge into society as a whole.

The prisoner study (Wattu IV) opens this window and provides an opportunity for familiarisation with the world of prisoners, and through it, Finnish health and welfare as a whole. However, this expedition does not make it easy for the readers. The report contains terminology from the criminal sanctions and healthcare systems, science and practical life. The structure of the articles has been designed to make it easy to read about different topics individually, but the way that they have been written also ensures a systematic, investigative reading of the book as a whole.

Indeed, the common thread passing through the report consists of several strands. These include background information, the variables that describe the prisoner demographics but also specific themes related to the prison world. For example, voluntary request for isolation during imprisonment was a little-known phenomenon before the Wattu IV study. Researchers use the same cross-cutting approach to talk about topics such as the prisoner's ability to work or the health impacts of incapacitation, the total time spent in an institution during one's life.

The prisoner's voice is an important part of the book. Through open-ended responses and service experiences, the data speaks to the reader with the prisoner's personal observations and wishes. In addition to quantitative data, the articles make use of qualitative material.

It would not be possible to provide such a versatile set of research without cooperation. First of all, the prisoners' open-minded enthusiasm to participate mattered the most. There was not a moment of doubt regarding the prisoners' willingness and ability to answer hundreds of research questions and to participate in demanding interviews and measurements. Prisoners have always been interested in their health during treatment encounters and appreciative someone listening to their opinions. I would like to thank all the prisoners involved. Your work is valuable.

Without field workers, nothing would have gotten done. And no one could have done a better job at leading the field of study nurses than Mariitta Vaara with all her experience. After the data collection, the fully irreplaceable Merja Mikkola charted the white parts of the map. Her competence in policies and understanding of background mechanisms is what put this study in its place at Finnish Institute for Health and Wellbeing (THL). Sasu Tyni and Kennet Harald made their data competence and experience available to the entire research group in a way none other could have. The cooperation between THL, the Health Care Services for Prisoners (VTH) and the Prison and Probation Service of Finland (Rise) truly culminated in our editorial work. Very special thanks belong to Professor Fred Markowitz for his enthusiasm and talent with this English translation at hand.

The top professionals at Rise, VTH and THL have made the data collection of Wattu IV possible. The authors of this book have made the Health and Wellbeing of Finnish Prisoners 2023 report come true. As a reader, you have all the opportunities to take this expedition to the finish line and use this information to make effective decisions. And prisoner, you can get empowered!

Helsinki 25.3.2024

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Abstract

Mika Rautanen, Kennet Harald and Sasu Tyni (eds.). *The Health and Wellbeing of Prisoners 2023*. Finnish Institute for Health and Welfare (THL). Report 3/2024. 256 pages. Helsinki 2024. ISBN 978-952-408-296-9 (printed); ISBN 978-952-408-297-6 (online publication).

The Health and Wellbeing of Prisoners 2023 (Wattu IV) is a joint health examination study between the Finnish Institute for Health and Welfare (THL), the Prison and Probation Service of Finland (Rise), and the Health Care Services for Prisoners (VTH) on a group that is not visible in traditional population studies.

The project is coordinated by THL's Government Services Department. Earlier health surveys of Finnish prisoners have been a part of Rise's activities, and the previous Wattu III survey report was published in 2010. The data collection for Wattu IV utilized health and well-being indicators commonly used in general population surveys.

Similar to traditional population studies, the aim of data collection was to obtain information on health and to prevent illnesses, but in the prison population, the target was expanded to cover the accumulation of difficult social problems. At its most effective, the study will help to prevent imprisonment and reduce crime. In addition, the aim was to identify methods for strengthening the continuity of care and service paths, and to produce information to support the development of services provided by Health Care Services for Prisoners and prison administration.

The data collection consisted of a survey sent to all sentenced prisoners, an interview conducted by the study nurse, a health examination, as well as laboratory tests on sub-samples, an oral health examination, an oral panorama X-ray, and interviews on mental disorders. In addition, an anonymous questionnaire was distributed.

The study was conducted at both closed prisons (Helsinki, Riihimäki, Hämeenlinna and Turku) and open prisons (Suomenlinna, Ojoinen, Vanaja and Huittinen). VTH employees were responsible for recruiting prisoners and for performing their health examinations and interviews and for taking blood samples. The oral health examination was carried out by dentists and dental nurses employed by VTH, and the mental health interviews were conducted by psychiatric nurses employed by VTH and psychologists employed by Rise. The study nurses were trained in the use of methods with the help of THL's population study experts.

Prisoners who were serving an imprisonment for a fixed term or for life were selected for the study. Prisoners had to have Finnish citizenship, and the remaining imprisonment time of their sentence had to be at least one month at the time of the study. The research sample consisted of 403 males and 126 females (17.5% refused to participate). It was assured that backgrounds of the prisoners in the sample are comparable to those of prisoners present in closed prisons on a given day.

The results confirmed that prisoners have multiple problems and they are among those who need a lot of social and health care services. Chronic illnesses and the use of health services were more common compared to the entire population, and about a quarter of the prisoners were found to be heavy users of health care services.

Forty-six per cent of men and 43% of women were identified to have ADHD symptoms. They were younger, less likely to be first-time offenders, and less educated compared to other prisoners. Eight per cent of the prisoners experienced psychosis during their lifetime, excluding substance-induced psychosis, which 34 per cent had. In addition to psychosis, almost everyone had a substance use or personality disorder, often both.

Eighty-seven per cent of prisoners were diagnosed with a lifelong substance use disorder. Problematic alcohol consumption was more prevalent in older age groups, whereas drug problems were more common among younger groups. The use of cocaine had increased significantly compared to the previous Wattu III study.

Forty-four per cent of prisoners were infected with hepatitis C and 13% had a chronic infection. One per cent had an HIV infection. In prison, 34% of the respondents had used drugs by injecting. Two out of three had shared syringes and needles.

Prisoners felt that their oral health was average or poor more often than the rest of the population and reported a lot of oral problems, such as pain. Prisoners had a lot of fillings in their teeth. One third (32%) of prisoners reported that their teeth had been damaged due to violence and two out of five (42%) due to an accident.

The results of the health examination revealed comparatively higher levels of obesity. On average, the male prisoners had a body mass index of 28.9 and female prisoners 28.9.

Prisoners had less trust in other people than the rest of the population. Those prisoners who had been in prison longer had less trust than first-time offenders. Male prisoners felt more loneliness than females. At the collective level, the resilience of prisoners was lower than that of the general population. Half of male prisoners and three out of five female prisoners had low levels of resilience. Prisoners with low levels of resilience were more likely than other prisoners to have problems related to work ability and health, and to serve shorter sentences.

Overall, the prisoners performed well in the tasks related to linguistic skills. However, younger prisoners (under the age of 30) showed significantly lower proficiency than prisoners over the age of 30.

As a whole, prisoner health and welfare is poorer than the rest of the population. The need for services before and after the imprisonment period is evident. At the same time, there were emerging opportunities for health promotion and risk prevention. The imprisonment period was seen as an opportunity to identify and utilize these opportunities.

The data collected in Wattu IV are part of THL's data resources. It is stored and it can be utilized in accordance with THL's practices and data access authorization procedures. In addition to quantitative, epidemiological information, the research material contains qualitative information. The aim is to make multidisciplinary use of data on the prison population in further studies in order to complement the overall picture of citizens' service needs and to promote the welfare of people in vulnerable positions.

This report presents articles on selected themes that provide a more comprehensive picture of the health and welfare of prisoners. The report presents a number of data-based recommendations and suggestions for further measures.

Keywords: Wattu IV study, imprisonment, health, functional capacity, working capacity, welfare

Tiivistelmä

Mika Rautanen, Kennet Harald ja Sasu Tyni (toim.). Vankien terveys ja hyvinvointi 2023. Terveystarkastuslaitos (THL). Raportti 3/2024. 256 sivua. Helsinki 2024. ISBN 978-952-408-296-9 (painettu); ISBN 978-952-408-297-6 (verkkojulkaisu)

Vankien terveys ja hyvinvointi 2023 (Wattu IV) on THL:n, Rikosseuraamuslaitoksen (Rise) ja Vankiterveydenhuollon (VTH) yksikön yhdessä toteuttama terveystarkastustutkimus väestöryhmässä, joka ei näy perinteisissä väestötutkimuksissa. Hanketta koordinoi THL:n Valtion palvelut -osasto. Aiemmat vankitutkimukset ovat olleet osa Risen toimintaa, ja edellinen Wattu III -tutkimusraportti julkaistiin vuonna 2010. Wattu IV -tiedonkeruussa hyödynnettiin väestötutkimuksissa yleisesti käytettyjä terveys- ja hyvinvointimittareita.

Tiedonkeruun tavoite oli perinteisten väestötutkimusten tapaan saada tietoa terveydentilasta ja ehkäistä ennalta sairauksia, mutta vankiväestössä tavoite laajeni koskemaan vaikeiden sosiaalisten ongelmien kasautumista. Vaikuttavimmillaan tutkimus auttaa ehkäisemään vankeuteen päätymistä ja vähentämään rikollisuutta. Lisäksi haluttiin tunnistaa keinoja hoito- ja palvelupolkujen jatkuvuuden vahvistamiseksi ja tuottaa tietoa vankiterveydenhuollon palveluiden ja vankeinhoidon kehittämisen tueksi.

Tiedonkeruu koostui kaikille annettavasta kyselylomakkeesta, tutkimushoitajan tekemästä haastattelusta ja terveystarkastuksesta sekä alaotoksille tehdyistä laboratoriotutkimuksista, suun terveystarkastuksesta, suun panoraamaröntgenkuvasta sekä mielenterveyden häiriöitä kartoittavista haastatteluista. Lisäksi jaettiin anonymisesti palautettava kyselylomake.

Tutkimus toteutettiin sekä suljetuissa vankiloissa (Helsinki, Riihimäki, Hämeenlinna ja Turku) että avovankiloissa (Suomenlinna, Ojoinen, Vanaja ja Huittinen). VTH:n työntekijät vastasivat tutkittavien rekrytoinnista, terveystarkastuksesta, haastattelusta ja verinäytteen otosta. Suun terveystarkastuksen tekivät VTH:n hammaslääkärit ja -hoitajat, ja mielenterveyshaastatteluista vastasivat VTH:n psykiatriset hoitajat sekä Risen psykologit. Tutkimushoitajat koulutettiin menetelmien käyttöön THL:n väestötutkimusasiantuntijoiden avulla.

Tutkimusotos muodostui 403 miehestä ja 126 naisesta. Kieltäytyneitä oli 17,5 %. Tutkimukseen valittiin vankeja, jotka suorittivat määräaikaista tai elinkautista vankeutta. Vangeilla tuli olla Suomen kansalaisuus, ja rangaistuksen jäljellä olevan ajan tuli olla tutkimushetkellä vähintään yksi kuukausi. Tutkimusotoksen vangit ovat taustoiltaan vertailukelpoisia kuvaamaan tietyntä päivänä suljetuissa vankiloissa paikalla olevia vankeusvankeja.

Tutkimus vahvisti, että vangit ovat moniongelmaisia ja kuuluvat paljon sosiaali- ja terveyspalveluita tarvitsevien joukkoon. Pitkäaikaissairastaminen ja terveyspalvelujen käyttö oli koko väestöön nähden yleisempää, ja noin neljännes vangeista näyttäytyi terveyspalvelujen suurkäyttäjinä.

ADHD-oirekuva tunnistettiin 46 prosentilla miehistä ja 43 prosentilla naisista. He olivat nuorempia, harvemmin ensikertalaisia ja vähemmän kouluttautuneita muihin vankeihin verrattuna. Kahdeksalla prosentilla vangeista oli elämänsä aikana ollut jokin psykoosisairaus, pois lukien päihdepsykoosi, joka oli ollut 34 prosentilla. Lähes kaikilla oli psykoosisairausten lisäksi joko päihde- tai persoonallisuushäiriö, usein molemmat.

Elinaikainen päihdehäiriö todettiin 87 prosentilla vangeista. Ongelmallinen alkoholin käyttö painottui vanhempiin ikäryhmiin, kun taas nuoremmilla yleisimpiä olivat huumeongelmat. Kokaiinin käyttö oli merkittävästi lisääntynyt edeltävään Wattu III -tutkimukseen verrattuna.

C-hepatiittitartunnan saaneita oli 44 prosenttia ja kroonisia kantajia 13 prosenttia vangeista. Hiv-tartunta oli yhdellä prosentilla. Vankilassa huumeita oli käyttänyt pistämällä 34 prosenttia vastaajista. Heistä kahdella kolmesta oli ollut ruiskujen ja neulojen yhteiskäyttöä.

Vangit kokivat suunterveytensä keskitasoiseksi tai huonoksi useammin kuin muu väestö ja raportoivat paljon suun alueen vaivoja, esimerkiksi kipua. Vangeilla oli paljon paikattuja hampaita. Vangeista kolmannes (32 %) kertoi hampaidensa vaurioituneen väkivallan ja kaksi viidestä (42 %) tapaturman takia.

Terveystarkastuksen tulokset kertoivat lihavuudesta. Vankimiesten painoindeksi oli keskimäärin 28,9 ja naisvankien 28,9.

Luottamus toisiin ihmisiin oli vangeilla muuta väestöä vähäisempää. Luottamus oli pidempään vankilassa olleilla vangeilla ensikertalaisia matalampaa. Miesvangit kokivat naisia enemmän yksinäisyyttä.

Vankien resilienssi oli ryhmätasolla perusväestöä heikompa. Vankimiehistä puolella ja vankinaisista kolmella viidestä resilienssi jäi matalalle tasolle. Vangeilla, joiden resilienssi oli matala, oli muita vankeja useammin työkykyyn ja terveyteen liittyviä ongelmia, ja heidän tuomionsa olivat lyhyempiä.

Vangit suoriutuivat kielellisten taitojen tehtävissä kokonaisuutena hyvin. Kuitenkin alle 30-vuotiaiden vankien kyvyt olivat merkitsevästi heikompia kuin yli 30-vuotiailla.

Kokonaisuutena tarkastellen vankien terveys ja hyvinvointi oli muuta väestöä heikompa. Tarve vankeusaikaa edeltäville ja sen jälkeen jatkuville palveluille korostui. Samalla esiin nousi edellytyksiä terveyden edistämiseksi ja riskien ennalta ehkäisylle. Vankeusaika näyttöäytty mahdollisuutena tunnistaa ja hyödyntää näitä edellytyksiä.

Wattu IV -tiedonkeruussa muodostettu aineisto on osa THL:n tietovarantoa. Sitä säilytetään ja sen käyttöä edistetään THL:n käytäntöjen ja lupamenettelyjen mukaisesti. Tutkimusaineisto sisältää määrällisen, epidemiologisen tiedon lisäksi laadullista tietoa. Tarkoituksena on hyödyntää vankiväestötietoa jatkotutkimuksissa monitieteisesti, jotta kokonaiskuva kansalaisten palvelutarpeista täydentyy ja jotta haavoittuvassa asemassa olevien ihmisten hyvinvointia voidaan edistää.

Käsillä olevassa raportissa esitetään artikkeleita valikoiduista teemoista, jotka antavat aiempaa monipuolisemman kuvan vankien terveydestä ja hyvinvoinnista. Raportissa esitetään tutkitun tiedon pohjalta lukuisia suosituksia ja jatkotoimenpide-ehdotuksia.

Avainsanat: [Wattu IV tutkimus](#), [vankeus](#), [terveys](#), [toimintakyky](#), [työkyky](#), [hyvinvointi](#)

Sammandrag

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Undersökningen om fångars hälsa och välfärd 2023 (Vankien terveys ja hyvinvointi 2023, Wattu IV) är en hälsoundersökning som THL, Brottspåföljdsmyndigheten (Rise) och Enheten för hälso- och sjukvård för fångar genomför tillsammans i en befolkningsgrupp som inte syns i traditionella befolkningsundersökningar. Projektet koordineras av THL:s avdelning för statens tjänster. Tidigare undersökningar av fångar har varit en del av Rises verksamhet och den föregående undersökningsrapporten, Wattu III, publicerades 2010. I datainsamlingen Wattu IV utnyttjades indikatorer för hälsa och välfärd som används allmänt.

Målet med undersökningen var i likhet med traditionella befolkningsundersökningar att samla information om hälsotillståndet och förebygga sjukdomar, men i förestående undersökning fångpopulationen utvidgades målet att omfatta även anhopningen av svåra sociala problem. I bästa fall kan undersökningen bidra till att förebygga fängelsestraff och minska brottsligheten. Förutom detta sökte man identifiera metoder för att stärka kontinuiteten i vård- och servicetigar samt producera information som stöd för att utveckla tjänsterna inom hälso- och sjukvården för fångar och fångvården.

Datainsamlingen utfördes med enkät som delades ut till samtliga fångar, en intervju och en hälsoundersökning som genomfördes av en forskningsskötare samt för ett delurval även laboratorieundersökningar, en undersökning av munhälsan, en panoramaröntgen av munnen samt intervjuer vilka kartlade störningar i den psykiska hälsan. Utredningen omfattade även en enkät som skulle returneras anonymt.

Undersökningen utfördes både på slutna (Helsingfors, Riihimäki, Tavastehus och Åbo) och i öppna anstalter (Sveaborg, Ojoinen, Vånå och Vittis). De anställda vid Enheten för hälso- och sjukvård för fångar ansvarade för att rekrytera personer att delta i undersökningen samt för hälsoundersökningen, intervjun och blodprovstagningen. Kontrollen av munhälsan utfördes av tandläkare och tandskötare vid Enheten för hälso- och sjukvård för fångar medan psykiatriska sjukskötare vid Enheten för hälso- och sjukvård för fångar och Rises psykologer ansvarade för intervjuerna om psykisk hälsa. Forskningsskötarna fick utbildning i att använda metoderna av THL:s experter inom befolkningsundersökningar.

Undersökningsamplet bestod av 403 män och 126 kvinnor. Andelen personer som avböjde att delta i utredningen uppgick till 17,5 procent. I undersökningen inkluderades fångar vilka avtjänade fängelsestraff på antingen tid eller livstid. Fångarna skulle ha finskt medborgarskap och den tid som återstod av straffet skulle vid tidpunkten för undersökningen vara minst en månad. Fångarna i undersökningsamplet har en jämförbar bakgrund och beskriver fångar i slutna fångelser en viss dag.

Undersökningsresultaten bekräftade att fångar har många problem och hör till den grupp av människor som behöver många social- och hälsovårdstjänster. Bland fångarna fanns fler i behov av hälso- och sjukvårdstjänster än i befolkningen i stort. En fjärdedel av fångarna visade sig använda hälso- och sjukvårdstjänster i stor utsträckning.

Vid undersökningen framkom att 46 procent av männen och 43 procent av kvinnorna hade symptom vilka passade in på ADHD. Dessa patienter var något yngre och hade en lägre utbildningsnivå i jämförelse med fångpopulationen i övrigt och deras andel av återfall i brott var högre. Livstidsprevalensen av psykosjukdom var åtta procent och av dessa fångar hade majoriteten även en diagnosticerad rusmedels- och/ eller personlighetsstörning, och ofta båda. Rusmedelsinducerade mera kortvariga psykotiska episoder framkom hos 34 % av fångarna. Nästan alla hade utöver en psykosjukdom också antingen en missbruks- eller personlighetsstörning, ofta båda.

Av fångarna hade 87% i något skede av livet haft en missbruksrelaterad problematik. Problematisk alkoholkonsumtion koncentrerades till äldre åldersgrupper, medan de yngre oftare hade problem med narkotika. I utredningen framkom en markant ökning i användningen av kokain i jämförelse med föregående Wattu undersökning.

Av respondenterna hade 34 % injicerat droger i fängelse och två av tre hade delat sprutor och nålar med andra fångar. 44 procent framkom som hepatit C positiva och 13 % var kroniska bärare av sjukdomen. En procent av fångarna var hiv positiva. 34 procent av respondenterna hade injicerat droger i fängelset. Två av tre hade använt sprutor och nålar tillsammans med andra.

Fångarna upplevde sin munhälsa som medelmåttig eller dålig oftare än den övriga befolkningen och de rapporterade mycket besvär i munområdet, till exempel smärta. Fångarna hade många lappade tänder. En tredjedel (32 %) av fångarna berättade att deras tänder skadats på grund av våld och två av fem (42 %) på grund av olycksfall.

Resultaten från hälsoundersökningen vittnade om omfattande fetma bland fångarna. Viktindexet för såväl manliga som kvinnliga fångar var i genomsnitt 28,9.

Fångarna hade mindre förtroende för andra människor än den övriga befolkningen. Förtroendet var lägre hos fångar som suttit i fängelse en längre tid än hos fångar som satt i fängelse första gången. Manliga fångar upplevde mer ensamhet än vad de kvinnliga fångarna upplevde.

Fångarnas resiliens var på gruppnivå sämre än hos basbefolkningen. Hos hälften av de manliga fångarna och hos tre av fem av kvinnorna låg resiliensen på en låg nivå. Fångar med låg resiliens hade ofta kortare domar än de övriga fångarna men de hade oftare problem med arbetsförmåga och hälsa.

Fångarna klarade i det stora hela uppgifter som mäter de språkliga färdigheterna bra. Färdigheterna hos fångar under 30 år var dock betydligt svagare än hos fångar över 30 år.

Som helhet var fångarnas hälsa och välfärd sämre än hos befolkningen i övrigt. Behovet av tjänster före och efter fängelsetiden var markant. Utredningen visade att fängelsetiden gav förutsättningar för att identifiera och förebygga risker samt förutsättningar för att främja hälsa i den undersökta populationen. Fängelsetiden visade sig vara en möjlighet att identifiera dessa förutsättningar.

Det material som bildats i datainsamlingen Wattu IV är en del av THL:s datalager. Materialet bevaras och hanteras i enlighet med THL:s praxis och tillståndsförfaranden. Forskningsmaterialet innehåller förutom kvantitativ, epidemiologisk information även kvalitativ information. Syftet med det insamlade materialet är att främja tvärvetenskapligt forskningssamarbete och komplettera informationen om medborgarnas servicebehov så att helhetsbilden av medborgarnas servicebehov kompletteras och så att välfärden hos personer i utsatt ställning kan främjas.

I rapporten presenteras artiklar om utvalda teman vilket ger en mer mångfaceterad bild av fångarnas hälsa och välfärd än tidigare. I rapporten presenteras utifrån den information som framkommit ett flertal rekommendationer och förslag till fortsatta åtgärder

Nyckelord: Undersökningen Wattu IV, fångenskap, hälsa, funktionsförmåga, arbetsförmåga, välfärd

Table of contents

Preface	7
Authors	9
Abstract	10
Tiivistelmä	12
Sammandrag	14
Background information to support readers.....	19
Implementation of the Wattu IV study	23
Highlights from the research data	33
ADHD and neurodivergent characteristics	45
Experiences of violence and prevalence of post-traumatic stress symptoms.....	57
Psychotic disorders	67
Oral health.....	77
Infectious diseases.....	91
Use of tobacco and nicotine products	103
Substance use and substance use disorders.....	113
Use of doping agents	135
Gambling problems	141
Alexithymia.....	153
Resilience	161
Linguistic skills.....	171
Loneliness and social relationships.....	183
The experience of social inclusion	195
Usage of health services	209
Means to reduce feelings of aggression.....	217
Work ability and obstacles to employment.....	227
Wattu-do.....	234
Appendix 1: Information sheet about the Health and Wellbeing of Prisoners study	239
Appendix 2: Description of the SCID method	243
Appendix 3: Description of assessment methods for ADHD and autism spectrum traits	245
Appendix 4: Working group and acknowledgements	249
Appendix 5: Wattu grandfather reminisces	251



300 QUESTIONS ABOUT YOUR HEALTH!

PARTICIPATE – GET TO KNOW YOUR HEALTH
BETTER AND HAVE AN IMPACT ON THE SERVICES
BELONGING TO ALL PRISONERS

- 1 You'll get an invitation letter
- 2 You'll meet the study nurse
- 3 You'll go through a health examination
- 4 Extra studies are oral health, mental health and blood sample

▶▶▶ The aim of the study is to examine 500 prisoners' health and need for services. The study is conducted in Finnish. Participants are chosen in a random way. Participation is voluntary.

Undersökningen genomförs på finska.

The research is conducted in Finnish.

Uurimus tehakse soome keeles.

Опрос проводится на финском языке.

نعمل البحث في فنلندي

Background information to support readers

Prison and probation system

In Finland's criminal justice system, common types of punishment include different fines, community service, a monitoring sentence, and conditional and unconditional imprisonment (1). Unconditional imprisonment may be imposed as a fixed-term sentence of imprisonment or life imprisonment. The duration of fixed-term imprisonment varies according to the penal scale; the common minimum length of a fixed-term sentence of imprisonment is 14 days and the maximum length is 15 years. In this case, the maximum sentence includes prison sentences for several offences at the same time. A person may only be sentenced to life imprisonment for some of the most aggravated offences (e.g. murder). The duration of life imprisonment is typically 14–15 years.

Sentenced prisoners are serving an unconditional fixed-term or life imprisonment sentence. A person serving a sentence of unconditional imprisonment is released for conditional release once they have served a set portion of their prison sentence. A prison sentence with a maximum duration of two years may be imposed as conditional imprisonment for a probationary period of at least one and no more than three years. If the sentenced person commits offence during the probationary period for which they are sentenced to unconditional imprisonment, the enforcement of the conditional imprisonment may be ordered in full or in part.

A fine is a type of pecuniary punishment. The total amount of the fine is based on two factors: the severity of the offence and the solvency of the fined person. If a fine

cannot be collected, a conversion sentence may be imposed instead of the unpaid fine under the conditions laid down in the Criminal Code (1).

Imprisonment is regulated by several provisions in the law, but the Imprisonment Act is the most significant of these (2). When investigating an offence, a person may be imprisoned for the duration of the investigation. Remand imprisonment is a coercive measure used during a pre-trial investigation and judicial proceedings. Remand prisoners must not be placed in open prisons. The admission of a remand prisoner to prison is based on a remand warrant issued by a court. The Prison and Probation Service and the police are responsible for the implementation of remand imprisonment (3). A so-called 'zero-day' target has been set as the goal of the reform of the Remand Imprisonment Act. This means that a person remanded for an offence is admitted to prison immediately after a remand warrant has been issued by a court.

The Wattu IV study focused on sentenced prisoners because the duration of imprisonment of remand prisoners or so-called fine default prisoners serving a conversion sentence would have been too short or unpredictable, making the multi-phase data collection impossible. Sentenced prisoners are prisoners serving unconditional fixed-term or life imprisonment sentences.

Imprisonment

The number of prisoners can be examined in several ways; the most typical method is the average number of prisoners per day. The estimate includes all prisoners under different imprisonment types. The average number of prisoners per day was 3,056 in 2022, of whom around 57% were in closed prisons and around 43% in open prisons.

During the coronavirus pandemic, the commencement of enforcement was limited on several occasions. For example, in 2021, the total number of prisoners per day was 2,809. On average, prison sentences are short; more than half of sentenced prisoners were serving their sentence for a maximum of six months. In 2022, about eight per cent of prisoners were women, about three per cent were under the age of 21 and 16 per cent were foreigners (4). In 2021, sentenced prisoners accounted for 78 per cent of all prisoners and of them, around 38 per cent had been convicted of violent offences, 23 per cent of property crimes, 22 per cent of drug offences, 9 per cent of driving under the influence, and 7 per cent of sexual offences (5).

Serving a sentence of imprisonment is based on an individual sentence plan. The plan contains information about matters such as the placement of prisoners, their activities and support measures that promote life management during the sentence as well as information on support measures at the release phase.

Prison and Probation Service (Rise)

The Prison and Probation Service of Finland is responsible for the enforcement of prison sentences and community sanctions in Finland. It operates under the direction

of the Ministry of Justice. Rise's goal is to help prevent reoffending and increase public safety. The basic task of Rise is to enforce criminal sanctions.

The prison network consists of 28 units located around Finland, half of which are closed or remand prisons. There is considerable variation in prison sizes, and the largest prison in Helsinki has more than 300 prisoner places. Other large prisons include the prisons in Turku, Riihimäki and Vantaa. The smallest open prisons have less than 50 prisoner places. The aim is to place prisoners as openly as possible and integrate them into the activities of the rest of society, taking safety aspects into account. The principle guiding reintegrative activities is that the sanctions served would not have any further adverse consequences on the lives of the sentenced persons in addition to the restrictions caused by the sentence itself. The activities of Rise are laid down in law (6, 7).

Health Care Services for Prisoners (VTH)

The Health Care Services for Prisoners is an independent legal unit under the performance management of the Finnish Institute for Health and Welfare and falls within the administrative branch of the Ministry of Social Affairs and Health. VTH operations are based on a legislative act (8). VTH provides all prisoners with health services implemented as outpatient and inpatient services. VTH also include conducting forensic psychiatric assessments, such as mental examinations, violence risk assessments and assessments of medical treatment of sexual offenders.

VTH has its own national Medicines Centre. VTH operates at 28 prison outpatient clinics. VTH also include a hospital that provides somatic inpatient care at a health centre hospital unit in Hämeenlinna Prison Hospital and specialized psychiatric inpatient care wards in connection with the Turku and Vantaa prisons.

VTH operates on the so-called 'normality principle', according to which prisoners are offered the same level of health care services as the rest of the population. The services not provided as a part of VTH are mainly procured from the counties or other providers of medical services, where prisoners are transported for needed care.

All prisoners undergo an initial health examination by a nurse when arriving. The primary purpose of this examination is to investigate the person's state of health, use of medicines, functional capacity and work ability in relation to prison conditions and draw up any necessary treatment plans. The aim of the health care services is that, upon their release, prisoners will be healthier, have better functional capacity, and be motivated to take care of their welfare. All the health care services for prisoners are covered by annually-allocated budget funds.

References

- 1) <https://oikeusministerio.fi/en/criminal-sanctions>
- 2) Imprisonment Act 767/2005
- 3) Remand Imprisonment Act 768/2005
- 4) Financial statements and annual report of the Prison and Probation Service of Finland
- 5) Statistics of the Prison and Probation Service of Finland 2021
- 6) Act on the Prison and Probation Service (finlex.fi)
- 7) Decree on the Prison and Probation Service (finlex.fi)
- 8) Act on the Health Care Services for Prisoners (1635/2015)



Implementation of the Wattu IV study

Introduction

There is a long tradition of research on the health of prisoners in Finland. The planning, data collection and publication of the previous study was carried out between 2005 and 2010. At that point, Wattu III was the most comprehensive health examination of prison and probation clients.

Carrying out a new data collection was important for many reasons. As the citizens who end up in prison are basically excluded from health studies targeted at the general population, there was a clear knowledge gap at the societal level. On the other hand, it was known that the people found in prisons are likely to belong to groups in need of many services due to marginalisation. It was essential to compile an up-to-date picture of the health and welfare of prisoners, to investigate any changes in their health and, in particular, to obtain comparable data in relation to the rest of the population.

New data is necessary both from the perspective of understanding and improving the service system as well as the viewpoint of the welfare of a person admitted to and released from prison. The research data can be used to develop the activities of the Health Care Services for Prisoners and the Prison and Probation Service to better meet actual needs and to promote the re-entry of prisoners to society. While the key objective is the same as in traditional population studies – to prevent illnesses – it extends to concern the accumulation of difficult social problems. At its most effective, the study contributes to preventing imprisonment, by focusing on social reintegration and reducing offending.

Designing the Wattu IV study began when the Health Care Services for Prisoners unit had just moved from under the direction of the Prison and Probation Service to the Finnish Institute for Health and Welfare (THL) in 2016. Implementation methods, funding and content were sought for the study at the same time as administrative reforms were carried out in each of the three parties of this consortium.

The steering group for the study was chaired by Anneli Pouta, Director of Department, Government Services at THL. The steering group had representatives of the Health Care Services for Prisoners (Director Jussi Korkeamäki, Medical Specialist Hannu Lauerma and Research Director Mika Rautanen), and the Prison and Probation Service (Senior Specialists Ilppo Alatalo and Ulla Knuuti) and the Deaconess Institute (Senior Specialist Sakari Kainulainen). The research project also had a scientific research group (project group) whose chair was the Study Director and whose members were the authors of the chapters of this report.

After preliminary planning work, systematic implementation started in 2019. The field phase was launched in November 2020 and the recruitment of research subjects ended in June 2022. The decision on implementation had to be made in the uncertain situation arising from the coronavirus pandemic, which was taken into account both in ensuring the health security of field workers and when analysing the representativeness of the results at the reporting stage. The pandemic prolonged the data collection but did not cause insurmountable problems.

The Prison and Probation Service served as the main funder, THL provided both funding and the expertise of its specialists and IT solutions for the formation of data resources, and the Health Care Services for Prisoners was responsible for the management and practical implementation of the study. The division of labour was appropriate in relation to the expertise of specialists, and each consortium member provided significant extra-budgetary person-hours and resources to pursue the common objective. THL and the Health Care Services for Prisoners served as the controllers of the research data.

The starting point for the study was to create a setting that enables long-term monitoring and to create a brand-new data resource that enables increasingly multidisciplinary research on the prison population. The FinHealth 2017 research tradition served as an example, and using methods similar to it will enable comparison with the general population in the future as well as the follow-up of registers.

The research data are used to find answers to the following questions, some of which are discussed in more detail in the specialist articles included in this report:

- How are Finnish prisoners doing?
- What types of somatic diseases do prisoners have?
- What kinds of mental disorders do prisoners have?
- What kinds of social and other wellbeing-related skills do prisoners have?
- How has the health or wellbeing of prisoners changed compared to the previous study?
- How does the health and wellbeing of prisoners seem compared to the general population?
- What (health) services do prisoners need while they are serving their sentence or after this?

Data collection, dataset and methodology of the study

The data collection consisted of a survey sent to all prisoners, an interview with the study nurse and a health examination, as well as laboratory tests on sub-samples, an oral health examination, an oral panorama X-ray and interviews on mental disorders. In addition, a voluntary and anonymous questionnaire was distributed. The topics and participation rates of the data contents are described in Table 1.

The aim was to form a total sample of at least 400 men and 100 women, from which questionnaire and health examination data are collected. An additional aim was to obtain at least 300 sub-samples of the subjects for sub-studies, ensuring that the samples would be as representative as possible for the entire prison population as well as for men and women. These goals were achieved and representativeness will be discussed later in this chapter.

Table 1. Data content by topic and gender and participation rate.

	participants n (male/female)	refused n (%)
Consent to participate in the study	529 (403/126)	112 (17,5)
Forms:		
Basic questionnaire (checked by the study nurse)	526 (402/124)	0 ¹
Interview form (filled out by the research nurse)	527 (401/126)	0 ²
Anonymous questionnaire (filled out by the prisoner)	372	132 (26,2)
Measurements taken by the study nurse:	527 (401/126)	0 ²
Blood pressure and pulse		
Height and weight		
Waist circumference		
Cognitive tests (part of the CERAD question series)		
Getting up from a chair		
Hand grip strength test		
Blood samples and analyses:		
At the THL laboratory in a centralised manner⁴:		
ALAT, ASAT, ALP, Albumin, Apo A-I, Apo B, Calcium, hs-CRP, GGT, Creatinine, Cholesterol, calculated LDL, HDL-Cholesterol, Trigly, Urate, COV-2 IgG II (quantitative), Glucose, HbA1c, Insulin	324 (227/97) ³	58 (15,2)
Locally at the Health Care Services for Prisoners' contract laboratories:	397 (299/98)	46 (10,8)
PVK+T, HIVAgAb, HBsAg, HAVAbG, HCVAb, HCVN _{h0} (from HCVAb-positive prisoners)	140 (98/42)	24 (14,6)
Oral clinical examination by a dentist and dental assistant	311 (225/86)	25 (7,4)
Panoramic dental X-ray	241 (164/77)	43 (15,1)
Interview studies on mental health disorders:		
SCID I	295 (239/56)	43 (12,7)
SCID II	330 (270/60)	33 (9,1)
DIVA 2.0	331 (271/60)	34 (9,3)
Consent for register study	529 (403/126)	112 (17,5)
To be implemented as a separate 20-year follow-up project		

¹ three participants were released/transferred from the research prisons before receiving the questionnaire

² two were released/transferred from the research prisons before meeting the study nurse

³ some individual analyses could not be performed due to sample defects

⁴ the samples are stored for future needs in accordance with research consent (see [Appendix 1](#))

The study was conducted at both closed prisons (Helsinki, Riihimäki, Hämeenlinna and Turku) and open prisons (Suomenlinna, Ojoinen, Vanaja and Huittinen). Employees from the Health Care Services for Prisoners trained for the task were responsible for the recruiting subjects and for conducting their, health examinations and interviews and for taking blood samples. An oral health examination was carried out by dentists and dental nurses employed by Health Care Services for Prisoners, and interviews on mental health were conducted by psychiatric nurses employed by Health Care Services for Prisoners and psychologists employed by the Prison and Probation Service of Finland.

Study nurses were trained with the help of THL's population research specialists (health examination, measurements, review of questionnaires). Competence was ensured through intermediate training carried out during the study. Similarly, training and supplementary training sessions were organised on the mental health interviews (SCID I and II, DIVA). The quality assurance of data collection was also based on a common field instruction manual and the examination of data during the data collection process.

The management and analysis of blood samples consistent with population studies was carried out with the help of the laboratory of the Finnish Institute for Health and Welfare's Biomarker Team. Pre-treated and frozen sections were analysed in a single run at the end of 2022. Some of the samples were analysed at the Health Care Services for Prisoners' local contract laboratories during the data collection to immediately utilise the results, such as information on infectious diseases.

Representativeness of the sample

We aimed to make the data of the Wattu IV study representative both in terms of the daily population of sentenced prisoners and the flow of sentenced prisoners in time. The original sampling plans also took into account the special characteristics of prisons, the relationship between open prisons and closed prisons, and geographical representativeness in relation to prison location as well as prisoner backgrounds.

Prisoners serving a fixed-term sentence of imprisonment or life imprisonment and prisoners who, in addition to imprisonment, were serving fine default or remand imprisonment (sentenced imprisonment + remand/fine default) were selected for the study. Persons serving only remand imprisonment or fine default imprisonment were excluded from the study. In addition, the prisoners had to be present in the prison, they had to have Finnish citizenship, and the remaining time of their sentence had to be at least one month at the time of the study to ensure sufficient time for study meetings. Fine default prisoners and probation clients were excluded from the study due to their difficult accessibility.

The restrictions imposed on implementation during the coronavirus pandemic particularly affected the numbers of fine default prisoners and short-term prisoners in the prisons. During the restrictions, the proportion of long-term prisoners was emphasised in the daily prisoner population; for example, the number of prisoners sentenced to unconditional imprisonment for violent offences was higher than in normal

circumstances. The coronavirus pandemic significantly impaired the implementation of the original sampling plan. After the beginning, it was necessary to abandon the randomisation of prisoners arriving at the prison as research subjects, as the monthly inflow of prisoners remained very small, and prisons included in the study were reduced to only include those in the south and west of the country. The selection of prisons was also partly affected by the availability of research staff. The sample was collected from eight different prisons, in which any prisoners meeting the inclusion criteria could be included in the sample. Prisoners were asked to participate in the study based on their presence. Due to the pandemic, the collection of research data occurred later than in the original schedule as prisoners were released or removed from research prisons before their recruitment for the study.

The representativeness and nonresponse analyses of the study were carried out based on data from the Prison and Probation Service's prisoner data system (Vati). The prisoners' background information, such as age, principal offence, number of times in prisons and length of sentence, was compared to the data of the prisoner structure survey on 1 May 2022 and to the prisoners who started the sentence in 2021. The background information of the research subjects was actively followed approximately once every two months, and the sample was corrected by instructing the research staff during the data collection to avoid any distortions of distribution in the background information. In further studies, the distributions can be adjusted, for example by means of weighting coefficients.

The Prison and Probation Service aims at the gradual release of long-term prisoners. This means that prisoners begin to serve their sentence in a closed prison, and the aim is to later transfer the prisoner to an open prison and ultimately towards probationary liberty under supervision and a probationary period in liberty. Short-term prisoners can be placed directly in an open prison or a rehabilitation unit outside prison. A large share of prisoners are transferred to an open prison at some point during their sentence. Indeed, in many respects, the study results represent prisoners in open prisons, even though the proportion of prisoners placed directly in open prisons was lower than intended due to the coronavirus restrictions.

In addition to the prison type, the study could not take into account the prisoners' home municipalities or the geographical location of prisons. Nearly 90 per cent of the prisoners examined in this study had been placed in the prison and probation region of southern or western Finland. Based on the Prison and Probation Service's previous regional division, the three different prison and probation regions had an equal number of prisoners.

Meanwhile, the prisoners' other background factors were very consistent with the data of the cross-sectional day of the 2022 prisoner structure survey. An examination of the data based on gender also revealed no statistically significant differences between prisoners' backgrounds. Compared to prisoners who started their sentence in 2021, the prisoners in the study differed to some extent. They had been sentenced to prison more times and were on average slightly older than the prisoners in the sample, as shown in Table 2.

Table 2. Comparison data from the Wattu IV sample in relation to the prison population.

	number of imprisonments (median)	comparison with sample, p-value	age at start (median)	comparison with sample, p-value
Wattu IV sample	4.1 (2.0)		35.0 (34.0)	
prisoner structure 1 May 2022 (stock)	4.3 (2.0)	0.298	34.0 (34.0)	0.188
imprisoned in 2021 (flow)	4.7 (3.0)	0.002	37.1 (35.2)	0.015

The backgrounds of the prisoners in the Wattu IV study sample are comparable to the population present in closed prisons on a given day. With minor reservations, the study results can also be generalised to describe prisoners and who have started their sentences and open prisoners by taking into account changes in the flow of prisoners and the prisoners’ backgrounds after the COVID-19 restrictions have been lifted.

Ethical perspectives

The target population of the Wattu study, prisoners, is a particularly sensitive and vulnerable group, which sets high data protection requirements for the study. The EU General Data Protection Regulation covers the publication of sensitive data, and in general, the risk of disclosure of personal data is addressed by means such as identifying statistical units that concern less than five cases – i.e. so-called sensitive table cells that refer to a population with less than around 100 people. Data that applies 100% (0% or 100% cells) to the study population can also be interpreted as sensitive data.

The principle is that it must not be possible to identify the characteristics of individual persons in the target population from the data presented. Any such data must be removed or redacted from the published report. Based on case-by-case assessment, also sensitive statistical data may be presented if there are, for example, societal justifications for obtaining the data.

Wattu research data was collected from the prisoner population comprising approximately 3,000 people on a daily basis in the years preceding the study. Every year, the number of people arriving in prison from freedom was approximately 6,000. Correspondingly, the daily number of sentenced prisoners was approximately 2,200. This means that, each day, several imprisonments start and end and the flow of prisoners is high – 40% of prisoners are serving a sentence whose duration is less than three months.

Recruitment to the Wattu study took place within nearly two years, so the subjects were selected from a constantly changing population. In addition, when the report was published, more than a year had passed since the final recruitment round after which the population has continued to change. Therefore, the risk of identifying an individual respondent is essentially lower than, for example, when examining the population of a municipality. However, combining various data concerning the subjects’ health or social life clearly increases the risk of identification, especially in the case of

rare or multiple simultaneous disorders. Due to this fundamental sensitivity, special discretion has been exercised in presenting the data.

The data obtained in the prisoner study can be considered to significantly increase the understanding of the welfare and health of the entire population by eliminating blind spots. The data can be considered socially significant. This report also publishes key figures on rare phenomena, applying the rule of five. However, any published data has been made less detailed, for example, regarding information related to the principal offence or the term of imprisonment, or has been considered non-sensitive data depending on the context. No individual respondent can be identified based on the data.

The ethical principles also extend to the practices of implementing field studies. As a rule, the voluntary consent of a prisoner is an uncertain concept, as freedom of choice must be interpreted more narrowly in institutional conditions than in civilian life. A person in a subordinate position, in this case, a prisoner, may feel compelled to make choices between different benefits and negative sanctions rather than based on their free will. For example, a prisoner may feel that participating in the study stigmatises them to others or that refusing to participate in the study would harm their progress towards more open conditions.

Both the confidential and the voluntary nature of the study was emphasised to the prisoners recruited for the study. They were also reassured that participation would not cause them any financial harm and that the employed participants would receive remuneration, i.e. an activity allowance, corresponding to an equivalent time spent at work. The research subjects were not paid separate compensation for their participation.

Instead of paid compensation, the subjects received feedback on their performance and information on their health during the meetings. If the participants were found to have non-urgent illnesses requiring treatment, they were advised to seek care assessment at the prison outpatient clinic. In urgent or serious situations, treatment could be started immediately, for example with a dentist's appointment, or an appointment booked at an outpatient clinic.

The study received a favourable opinion from the Ethics Committee of the Hospital District of Southwest Finland (ETMK 85/1801/2019).

Common themes

Certain common themes cut across the Health and Wellbeing of Prisoners 2023 report as joint perspectives on the data collected. The authors of the report have attached these demographic background variables and special themes related to the prison population to the results and conclusions of the sub-studies. The basic distributions of the sample are described in Table 3.

Age and age groups. Age is described as a continuous variable but also classified into three groups: Prisoners aged 29 and younger represent 'young prisoners', those aged 30-47 form a group of middle-aged prisoners, and prisoners aged over 47 are the oldest group. The classification was influenced by the bias in age distributions, as

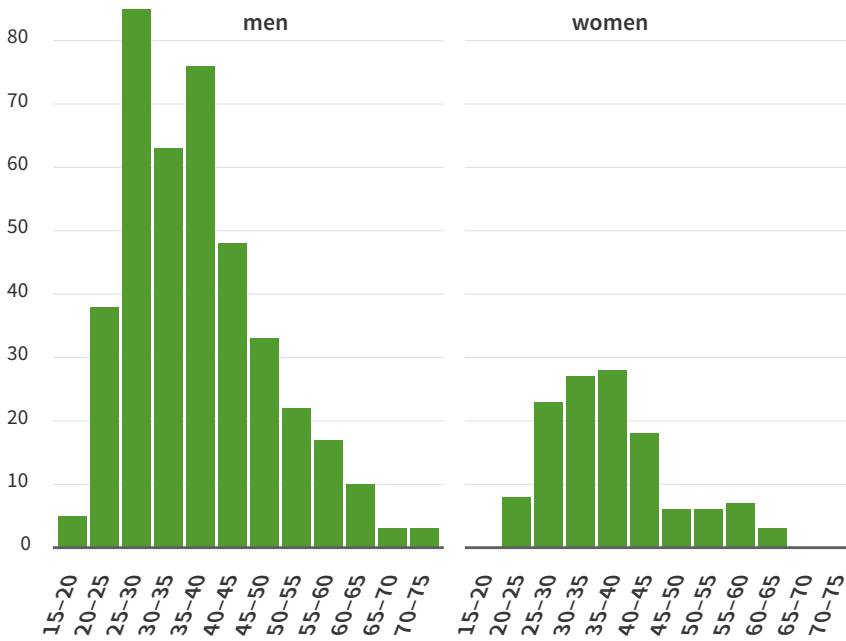


Figure 1. Age distribution histograms of the study sample.

shown on the following page in Figure 1, the definition of young prisoners as at most 29 years old used in various contexts, and the prisoner’s life expectancy set at 47 years.

Level of education. The sample is divided into two groups depending on whether the respondent reported having completed basic education at most, or whether they had completed training beyond this. This low level of education must be taken into account, for example, when making comparisons with the general public.

First-time offender status. When recruited for the study, the prisoners were in prison either for the first time or they were multiple offenders.

Principal offence category. The sentence valid at the time of the study may have consisted of several different offences. The principal offence refers to the offence that led to the most severe punishment, and the classification used here was based on the size of the groups and commonly used titles.

Length of current sentence exceeds two years. The length of the prison term is essential information when planning services for the prison term. There is no established definition of short-term imprisonment, and this may be used to refer to sentences of a few months or less than two years. As the focus in the research sample was on long-term prisoners, the division into two categories at two years particularly enables examining the needs of prisoners imprisoned for a long term. The length of the sentence is based on an estimate used by the Prison and Probation Service at the time of study recruitment.

Total length of imprisonment time during life exceeds two years. In this classification, imprisonment includes all days the research subject has spent in imprisonment. The days may have accumulated during a single, long sentence or several shorter sen-

Table 3. Basic distributions of the research sample based on gender and common themes.

Background variable (missing data)	men n=403	women n=126
age when recruited to study (0%)		
average (standard deviation)	37.0 (11.0)	37.4 (9.8)
min ≤ med ≤ max	18.5 ≤ 35.8 ≤ 71.9	20.8 ≤ 35.8 ≤ 63.8
age group (0%)		
less than 30	128 (31.8%)	31 (24.6%)
30–47	202 (50.1%)	74 (58.7%)
over 47	73 (18.1%)	21 (16.7%)
level of education (0.6%)		
at most basic education	209 (52.0%)	75 (60.5%)
more than basic education	193 (48.0%)	49 (39.5%)
first-time prisoner (0%)		
yes	138 (34.2%)	70 (55.6%)
no	265 (65.8%)	56 (44.4%)
principal offence category (0.6%)		
drug offence	94 (23.3%)	26 (20.6%)
violent offence	206 (51.1%)	65 (51.6%)
theft/offence against property	45 (11.2%)	17 (13.5%)
other offences	56 (13.9%)	17 (13.5%)
length of current sentence exceeds 2 years (1.3%)		
yes	235 (59.0%)	39 (31.5%)
no	163 (41.0%)	85 (68.5%)
total length of imprisonment time during life exceeds 2 years (0%)		
yes	283 (70.2%)	55 (43.7%)
no	120 (29.8%)	71 (56.3%)
placement prison type (0%)		
closed prison	329 (81.6%)	98 (77.8%)
open prison	74 (18.4%)	28 (22.2%)
willingness to set health targets in one's sentence plan (4.9%).		
yes	232 (60.3%)	68 (57.6%)
no	153 (39.7%)	50 (42.4%)
treatment appointments outside the Health Care Services for Prisoners (2.3%)		
yes	218 (55.2%)	58 (47.5%)
no	177 (44.8%)	64 (52.5%)
Work ability on the free market assessed by a study nurse (0.4%)		
full work ability	215 (53.6%)	70 (55.6%)
reduced work ability	186 (46.4%)	56 (44.4%)
Self-reported voluntary isolation during imprisonment (2.9%)		
yes	79 (20%)	17 (14%)
no	311 (80%)	104 (86%)
Self-reported isolation as a disciplinary measure during imprisonment (2.9%)		
yes	215 (55%)	43 (36%)
no	175 (45%)	78 (64%)

tences or remand imprisonments. The variable describes the so-called total incapacitation time; the time a person has spent locked up in institutions, away from free society.

Placement prison. At the time of the study, the prisoner was either in a closed prison or in an open prison. They may have moved between the two prison types up to

several times during the study. The prison type mainly describes the subject's situation at the time of the health examination and when filling out the questionnaire.

Willingness to set health related goals in sentence plan. The sentence plan is an analysis jointly prepared by the prisoner and the Prison and Probation Service on the prisoner's needs and the available means, and its purpose is to gradually promote reintegration into society. In this study, the prisoners were asked whether they also wanted health-related topics to be included in their sentence plans. This information helps in the joint planning and organisation of the services by the Health Care Services for Prisoners and Prison and Probation Service.

Treatment appointments outside the Health Care Services for Prisoners. The prisoners may have needed services not provided by the Health Care Services for Prisoners operating in prison conditions. For example, imaging appointments in civilian health care or first aid situations require coordination from the Health Care Services for Prisoners and safety practices from the Prison and Probation Service, which are challenging to implement. Knowledge of prisoners with needs for treatment appointments helps planning the necessary range of services.

Work ability on the free market assessed by a study nurse. This was based on the factors carried out using a standardised approach at the end of the health examination. The prisoners may have had a normal or reduced work ability or complete inability to work. Reduced work ability may be recoverable with rehabilitation. The two-class variable describes people with work ability and a group with health-related barriers to finding employment.

Isolated during imprisonment. A prisoner may, as a result of their own actions, be subjected to isolation for a set period as a form of disciplinary punishment. A prisoner may also personally request isolation. The reasons for this may include a justified fear of other prisoners or a need to manage a difficult mental condition.

The future and further use of the dataset

The dataset collected in Wattu IV is part of THL's data resources. It is stored and it can be utilised based on THL's practices and data access authorisation procedures. THL is the controller of the data. The Prison and Probation Service oversees the use of criminal background information attached to the data in accordance with a separate permit procedure.

The prisoner study has a website which contains a summary of the description of the data content, instructions for carrying out further research and key study results. The aim is to maintain an up-to-date picture of the completed and ongoing further research projects on the website. The website is available at www.thl.fi with the search term Wattu.

Indeed, we kindly request that information about any further studies such as theses and articles prepared based on this report be provided to THL to make accessible, up-to-date information that benefits researchers and, ultimately, prisoners.

Highlights from the research data

In addition to quantitative, epidemiological information, the research contains qualitative data, including answers to open-ended questions provided by prisoners on topics such as the health problems that they find most important. Due to the wide scope of the data, this section presents excerpts from the results, describes key indicators and derived data that provide a view into prisoners' health and welfare, term of imprisonment on one hand, and prisoners' perceptions of their own situation on the other. In the later chapters of this report, researchers focused on the selected themes in depth, and present both results as well as conclusions and proposals for measures, or recommendations.

Overall, we may note that the participation rate among prisoners was good. Only 17.5% of the reached prisoners refused to participate, and often the reason for not participating was the fact that they were busy. Also, some prisoners could be soon released, they may have moved from a closed prison to an open prison, or they may have been expecting a family visit and did not find the study relevant to them as a result. After choosing to participate, the research subjects only missed very few sub-studies. Even then, the reason could be the same as above: being too busy.

The information provided by the subjects was of high quality. There were only a few inconsistencies or missing information in the questionnaire responses, and these could be solved when constructing the database. No systematic errors were found. The forms had also been reviewed by the study nurses and supplemented already at the data collection stage if needed. The results presented in the report can therefore be considered to be of high quality.

Table 4. Excerpts of the health and functional capacity data of the prison population and the rest of the population by gender (FH17). The age range of the FH17 population was limited to correspond to the Wattu dataset.

	men			women		
	FH17 mean	Wattu IV mean (min–med–max)	p-value	FH17 mean	Wattu IV mean (min–med–max)	p-value
height (cm)	178.4	179.3 157.2–179.6–200.2	0.011* 0.401**	164.1	164.6 146.4–164.9–181.1	0.196* 0.157**
weight (kg)	83.4	93.5 50.6–93.5–157.0	<0.001 <0.001**	66.8	78.4 51.4–75.2–131.0	<0.001 <0.001**
BMI, body mass index (kg/m ²)	26.8	28.9 18.1–28.5–48.3	0.029* 0.024**	24.9	28.9 18.3–27.8–49.4	<0.001* <0.001**
waist circumference (cm)	96.8	98.6 69.0–96.1–146.4	0.015* <0.001**	87.4	91.2 66.8–89.4–132.8	<0.001* <0.001**
hand grip strength (second, better result, kg)	49.6	45.7 17.0–47.0–76.0	<0.001* <0.001**	30.5	29.1 16.0–31.0–53.0	<0.001* 0.006**
chair test, time of getting up 10 times (s)	17.7	16.9 0–17.0–53.0	0.012* 0.078**	18.7	18.3 0–17.9–29.1	0.172* 0.184**
Over the past 12 months, on how many days was it impossible or very difficult for you to cope with your daily tasks and duties because of the injuries caused by the accident?	2.6	30.1 0–365	<0.001* <0.001**	2.5	15.2 0–365	<0.001* <0.001**

*Chi-squared test was used in the comparison. ** In the regression model testing significance, age and education were selected as standard factors.

Health and functional capacity data

Table 4 contains findings on the health and functional capacity data of the prison population and the general population (FinHealth 2017, FH17). Compared to the general population, prisoners have more health and welfare risk factors, such as a high body mass index, high waist circumference and poor hand grip strength.

Based on self-reporting, accidents have caused significantly more harm to prisoners than to the rest of the population. During the previous one-year period, male prisoners had found it difficult or impossible to perform normal activities due to an injury on 30 days, compared to 2.6 days for men in the general population. The figure is also several times higher among female prisoners.

The comparison of health problems reported by the prisoners and the general population continues in Table 5. Prisoners, especially women, rated their health as poor more often than the rest of the population. Approximately six out of ten prisoners had a long-term illness or health problem, and the health problems caused some level of constraints on performing ordinary activities more often than among the participants in the FinHealth study.

Table 5. Excerpts of the self-reported health problems of the prison population and the rest of the population by gender (FH17). The age range of the FH17 population was limited to correspond to the Wattu dataset.

	men			women		
	FH17	Wattu IV	p-value	FH17	Wattu IV	p-value
How would you describe your state of health at present?						
good	31.5%	27.1%		32.0%	21.8%	
fairly good	38.4%	36.8%		39.8%	37.9%	
moderate	24.2%	25.6%	0.001*	21.5%	28.2%	<0.001*
fairly poor	4.7%	9.2%		6.0%	9.7%	
poor	1.2%	1.2%		0.6%	2.4%	
Do you have a chronic illness or other chronic health problem?						
no	59.2%	43.3%	<0.001*	53.4%	35.5%	<0.001*
yes	40.8%	56.7%	<0.001**	46.6%	64.5%	<0.001**
Are you limited from participating in common activities by a health problem?						
severely limited	5.3%	11.3%		5.2%	7.4%	
restricted, but not seriously	26.2%	38.8%	<0.001*	31.2%	47.9%	<0.001*
not limited at all	68.5%	49.9%		63.5%	44.6%	
Have you been limited for at least the past 6 months?						
no	12.6%	17.5%	0.055*	10.7%	14.1%	0.288*
yes	87.4%	82.5%	0.761**	89.3%	85.9%	0.964**
Have you had any of the following illnesses diagnosed or treated by a doctor in the past 12 months?						
heart failure						
no	98.1%	97.7%	0.623*	99.0%	98.3%	0.352*
yes	1.9%	2.3%	0.004**	1.0%	1.7%	0.234**
coronary artery disease (CAD)						
no	97.0%	99.0%	0.019*	98.7%	100.0%	<0.001*
yes	3.0%	1.0%	0.997**	1.3%	0.0%	<0.001**
cancer						
no	98.1%	99.2%	0.100*	98.2%	99.2%	0.302*
yes	1.9%	0.8%	0.487**	1.8%	0.8%	0.691**
rheumatoid arthritis						
no	99.1%	98.7%	0.465*	97.8%	100.0%	<0.001*
yes	0.9%	1.3%	0.184**	2.2%	0.0%	<0.001**
arthrosis of the back, other back condition						
no	86.2%	78.3%	<0.001*	85.7%	74.4%	<0.001*
yes	13.8%	21.7%	<0.001**	14.3%	25.6%	<0.001**

* Chi-squared test was used in the comparison. ** In the regression model testing significance, age and education were selected as standard factors.

Back disorders were particularly common among both male and female prisoners and nearly one in four prisoners reported these. Among the general population, around one in seven respondents reported an arthrosis of the back. In male prisoners, cardiac insufficiency was more common than among the general population.

Table 6. Results of the blood sample analyses of the prison population.

	men	women	in total	
	mean (standard deviation)	mean (standard deviation)	mean (standard deviation)	min < med < max
fP-Gluc (mmol/l)	5.4 (1.0)	5.4 (0.8)	5.4 (1.0)	3.1 < 5.3 < 14.1
fS-Gluc (mmol/l)	4.9 (1.1)	5.0 (1.0)	5.0 (1.0)	2.1 < 4.8 < 9.0
fS-Chol-HDL (mmol/l)	1.1 (0.2)	1.4 (0.3)	1.2 (0.3)	0.5 < 1.1 < 2.3
fS-Trigly (mmol/l)	1.6 (1)	1.5 (0.9)	1.6 (0.9)	0.5 < 1.3 < 6.6
fS-Chol-LDL (mmol/l)	3.1 (0.9)	3.0 (0.8)	3.1 (0.9)	0.9 < 2.9 < 6.5
S-LipoA1 (g/l)	1.3 (0.2)	1.6 (0.3)	1.4 (0.2)	0.6 < 1.4 < 2.5
S-LipoB (g/l)	1.0 (0.3)	1.0 (0.2)	1.0 (0.3)	0.3 < 1.0 < 1.8
S-ALAT (U/l)	35.3 (41.5)	29.2 (40.1)	33.5 (41.1)	6.0 < 21.5 < 427.0
S-ASAT (U/l)	35.1 (26)	32.0 (25.4)	34.1 (25.9)	14.0 < 27.0 < 266.0
S-GT (U/l)	34.2 (34.2)	29.8 (27.2)	32.9 (32.3)	8.0 < 22.0 < 308.0
fS-Crea (µmol/l)	82.2 (11.3)	64.2 (10.1)	76.8 (13.7)	40.0 < 76.0 < 113.0
S-Urat (µmol/l)	351.5 (70.1)	276.6 (67.4)	329.1 (77.2)	123.0 < 322.5 < 588.0
S-Ca (mmol/l)	2.4 (0.1)	2.4 (0.1)	2.4 (0.1)	2.1 < 2.4 < 2.6
S-hs-CRP (mg/l)	2.2 (3.4)	3 (4.2)	2.4 (3.7)	0.0 < 1.1 < 39.9
S-Insu (mU/l)	12.3 (20.2)	11.2 (11.3)	11.9 (18.0)	1.1 < 8 < 210.7
S-Alb (g/l)	44.7 (2.8)	42.6 (2.7)	44.0 (3)	35.0 < 44.0 < 52.0
S-AFOS (U/l)	80.1 (21.6)	73.0 (22.5)	78.0 (22.1)	24.0 < 76.0 < 164.0
S-COV2-IgGII (AU/mL)	4954.7 (10850.6)	3185.9 (5960.1)	4452.2 (9674.4)	0.0 < 107.5 < 69014
B-GHb-A1C (%)	5.2 (0.5)	5.2 (0.4)	5.2 (0.5)	4.2 < 5.1 < 9.1
B-HbA1c (mmol/mol)	33.5 (5.9)	33.6 (4.3)	33.5 (5.5)	22.0 < 33.0 < 76.0
B-Hb (g/l)	154.1 (10.3)	137.5 (13.1)	149.9 (13.2)	92.0 < 152.0 < 197.0
B-Leuc (E9/l)	6.7 (1.8)	7.0 (2.4)	6.8 (2.0)	2.8 < 6.4 < 13.6

Blood sample analyses

Blood samples were analysed centrally in the Finnish Institute for Health and Welfare's laboratory. Haemoglobin (Hb) and white blood cells (Leuk), presented at the bottom of Table 6, were analysed locally in contract laboratories near different prisons (n counts in Table 1).

The results show values that are within the reference range, even though many other indicators, such as self-reported diseases or a high body mass index and high waist circumference, indicate high morbidity rates among prisoners. Based on the results, there are good prerequisites for preventive health efforts among the prison population.

Mental health disorders

The summary data of the mental health interview (SCID I and II) by gender are presented in Tables 7 and 8. [Psychotic disorders](#) and [Substance use and substance use dis-](#)

Table 7. Summary data of the mental health interview (SCID II) on the prevalence of personality disorders by gender (%).

	men (%) n=270	women (%) n=60	total (%) n=330
avoidant	15.2	16.7	15.5
dependent	3	6.7	3.6
obsessive-compulsive	17	28.3	19.1
passive-aggressive	10.7	15	11.5
paranoid	20.4	23.3	20.9
schizotypal	2.2	0	1.8
schizoid	4.4	3.3	4.2
histrionic	0.7	0	0.6
narcissistic	4.4	1.7	3.9
borderline	20.4	28.3	21.8
antisocial	81.9	83.3	82.1
unspecified	0.7	3.3	1.2
any personality disorder	88.1	88.3	88.2

Table 8. Summary data of the mental health interview (SCID I) by gender (%). Prevalence rates (%) are reported for the person’s lifetime and the month preceding the interview.

	men (n=239)		women (n=56)		total (n=295)	
	prevalence lifetime (%)	prevalence previous month (%)	prevalence lifetime (%)	prevalence previous month (%)	prevalence lifetime (%)	prevalence previous month (%)
bipolar disorder	6.7	2.5	26.8	3.6	10.5	2.7
severe depression	34.3	4.6	44.6	3.6	36.3	4.4
other depressive episodes	10.0	1.7	3.6	1.8	8.8	1.7
other specified affective disorder	8.4	1.7	8.9	1.8	8.5	1.7
any affective disorder	55.6	10.5	71.4	8.9	58.6	10.2
panic disorder	18.4	5.0	33.9	8.9	21.4	5.8
agoraphobia	2.5	0.8	0	0	2.0	0.7
social phobia	9.6	5.9	10.7	7.1	9.8	6.1
specific phobia	2.5	0.8	16.1	8.9	5.1	2.4
obsessive-compulsive disorder	6.3	3.3	12.5	7.1	7.5	4.1
post-traumatic stress disorder	9.2	4.6	26.8	14.3	12.5	6.4
generalised anxiety	8.8	0.8	8.9	0	8.8	0.7
other specified anxiety disorder	10.5	1.3	7.1	3.6	9.8	1.7
any anxiety disorder	46.4	15.9	57.1	30.4	48.5	18.6
pain syndrome	2.1	–	1.8	–	2.0	–
hypochondriasis	0	–	1.8	–	0.7	–
body dysmorphic disorder	0.4	–	1.8	–	0.7	–
anorexia nervosa	0.4	0	5.4	1.8	1.4	0.3
bulimia nervosa	0	–	5.4	–	1.0	–
binge-eating disorder	0	0	3.6	1.8	0.7	0.3
other disorder	1.3	1.3	0	0	1.0	1.0
other mental health disorder	4.2	1.3	19.6	3.6	7.1	1.7

[orders](#) are presented separately in the later chapters of this report. It should be noted that the interview does not lead to diagnosing a psychiatric disorder, but rather to an assessment of its preconditions. More info in [Appendix 2](#).

Depression and anxiety were highlighted in both genders as being prevalent both during one’s lifetime and as a current disorder. Nearly one in two female prisoners had suffered from severe depression, one in three from panic disorder and one in four from post-traumatic stress disorder during their lifetime. The prevalence rates were lower among men but the order of prevalence was the same.

The disorder profiles depicting the prisoners’ more current status during the previous month (i.e., during their imprisonment) differed somewhat from their profiles during their entire lifetime. Anxiety, especially panic disorder and social anxiety, was the most common mental disorder in both men and women.

Of personality disorders, antisocial disorder was the most common. Nine out of ten prisoners met the diagnostic criteria for a personality disorder.

Quality of life

Quality of life was measured with the [15D instrument](#). Its 15 dimensions are described in Figure 3. Based on the prisoners’ responses, an index score was formed for each element of quality of life, approaching number one in the best and zero in the worst situation.

Prisoners report that they experience several problems and symptoms, especially sleeping problems, anxiety and depression. The results confirm the perception of key problems in the prison population that emerged in the mental health interviews.

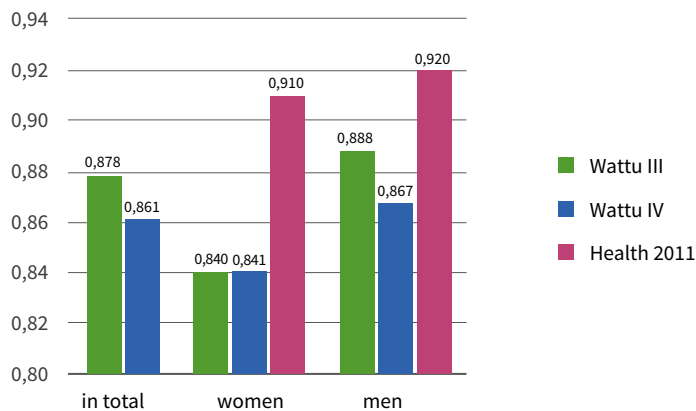


Figure 4. The average score of the 15D quality of life instrument in the previous and current prison population study and the Health 2011 population survey by gender. The quality of life of prisoners, especially women, is lower than that in the rest of the population. The quality of life of male prisoners has decreased compared to the previous study, and the quality of life of female prisoners has remained unchanged.

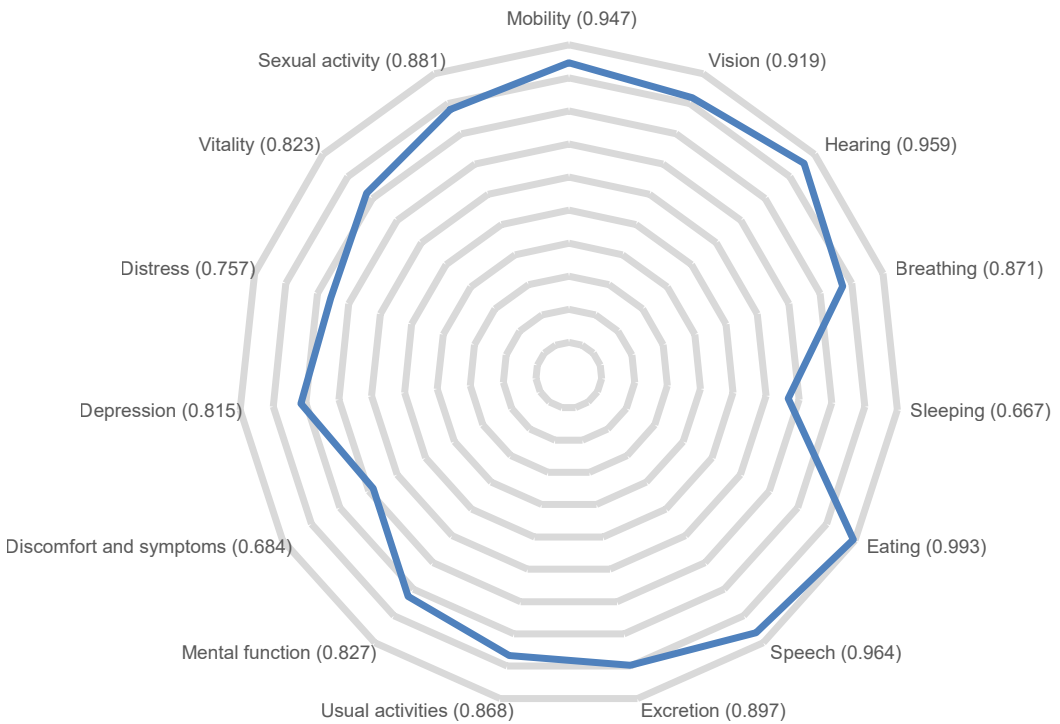


Figure 3. Health dimensions in the prison population according to the 15D quality of life instrument. The centre of the pattern represents the worst-case scenario (index number=0) and the outer circumference describes the best-case scenario (index number=1). Prisoners experience several problems and symptoms, especially sleeping problems, anxiety and depression.

Figure 4 shows the average total scores of the quality of life instruments in the previous and current prison population studies and the Health 2011 population survey by gender. The quality of life of prisoners, especially women, was lower than that in the rest of the population. Compared to the previous study, the quality of life of male prisoners had decreased in the previous roughly 15 years, and the quality of life of women had also not improved.

Polypharmacy

Based on the questionnaire responses, 125 prisoners reported that they had five or more different medicines at their disposal. The drug data of this so-called polypharmacy group were extracted from the Health Care Services for Prisoners’ patient information system, and the indications of the drugs were classified into 12 categories, each of which is presented in Figure 5 on the next double-page spread. The aim was to highlight the risks associated with polypharmacy while illustrating the health needs of prisoners based on their use of medications. It appears that there are several inappropriate combinations of medicines, which gives rise to further examination of this topic.

The indications of the drugs in the polypharmacy group are shown in the order of prevalence in Figure 6. The medications used and combinations of medications were most likely to be related to pain management and insomnia. This finding is consistent with both the quality of life instrument results and the responses to the questionnaire and interview.

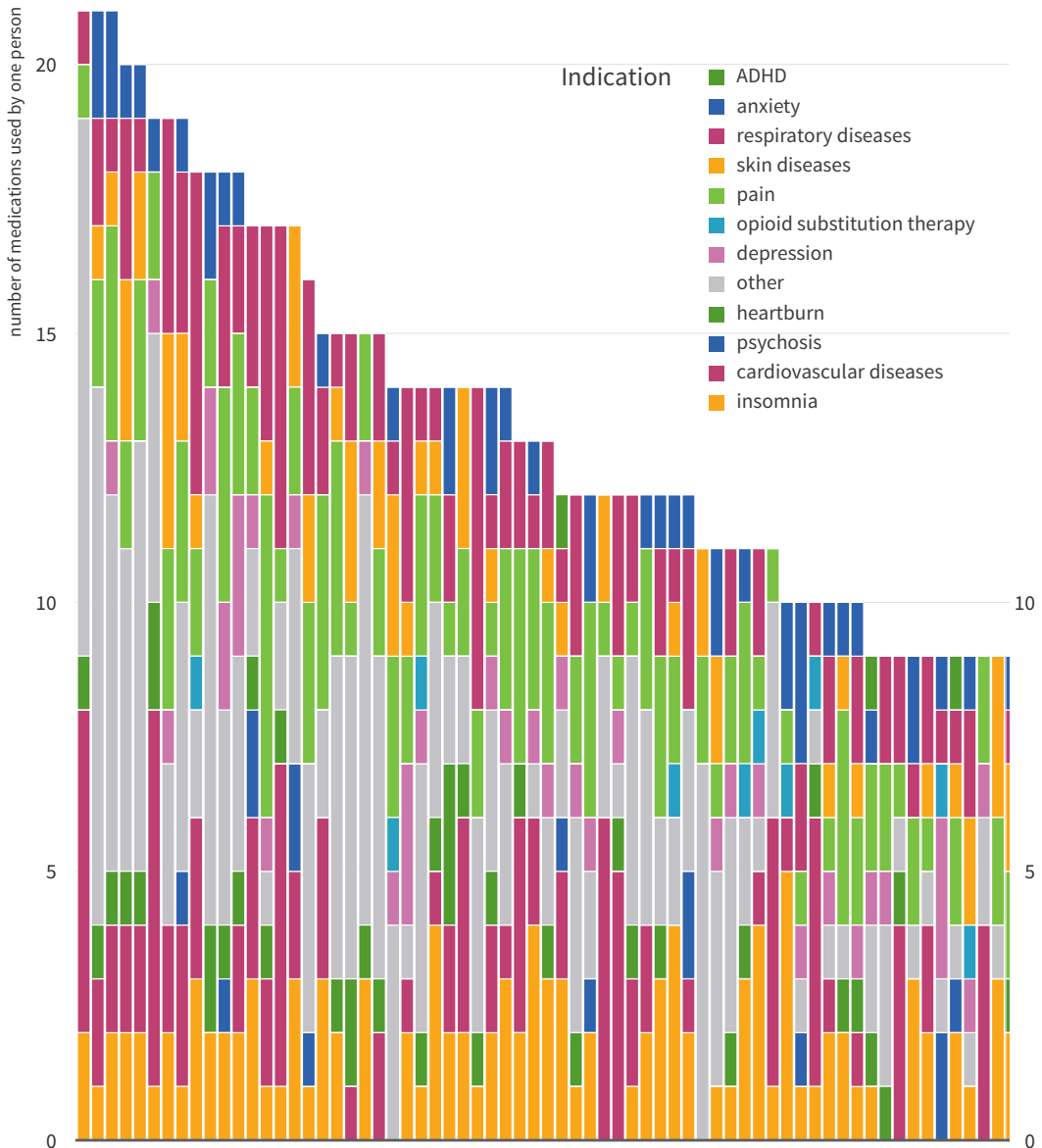


Figure 5. Number of medications and their indication in the group of prisoners who reported using five or more medicines. The column height indicates the number of medications used by one person and the colour of the column describes the indications. The polypharmacy figure continues on the next page.

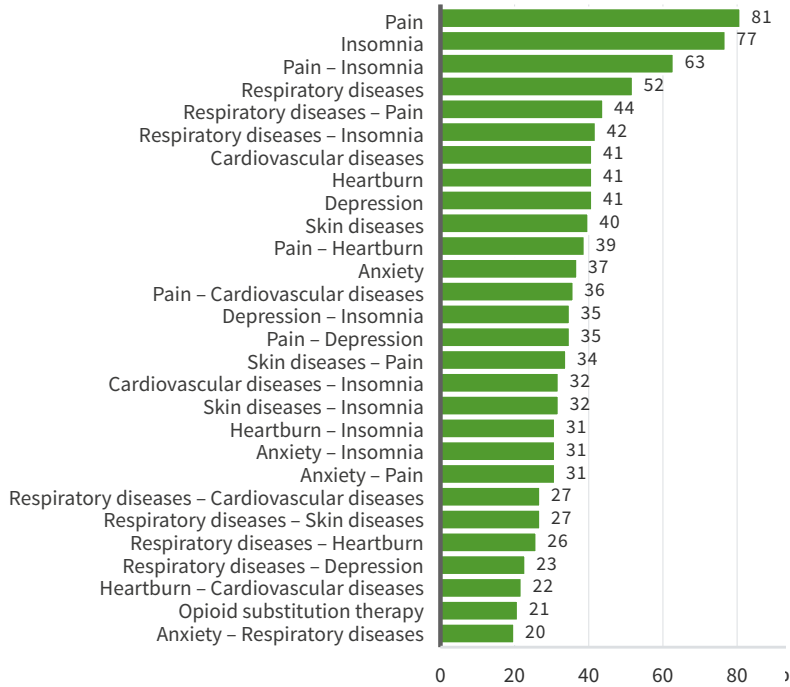
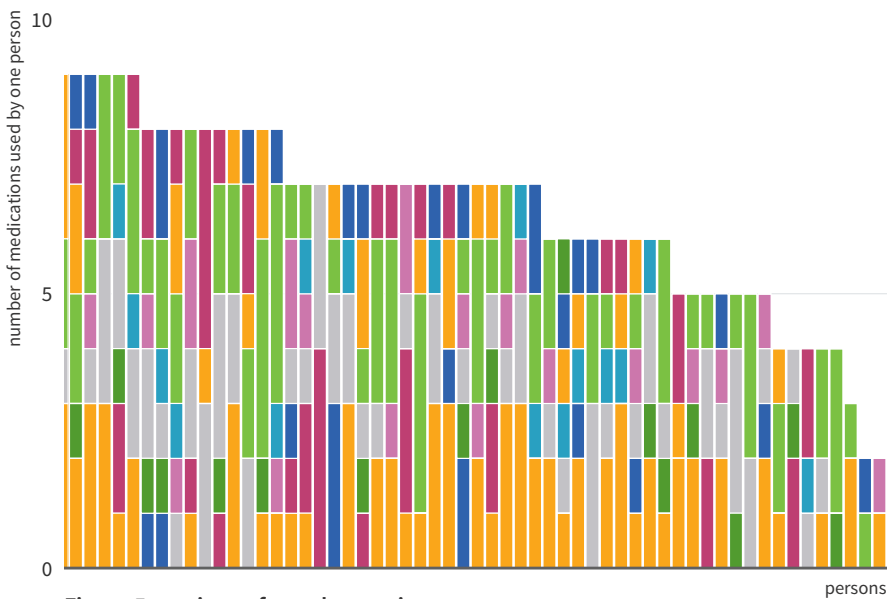


Figure 6. Indications of the medications used by prisoners in the poly-pharmacy group in order of prevalence (%). The medications and their combinations were most likely to be related to pain management and insomnia.



What do you think, five years after release, will you have:

1) broken the cycle of imprisonment: 49%

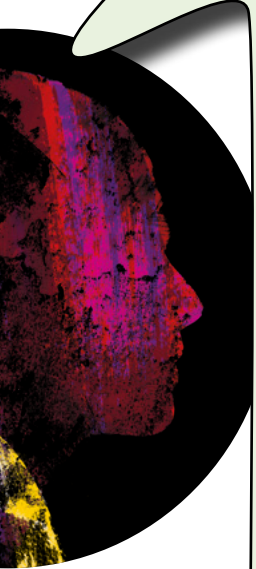
2) got stuck in the cycle of imprisonment: 4%

3) died: 2%

4) a job: 48%

5) Something else, please specify:

- I will live happily with my child, and our life will be as normal as possible.
- I will live abroad and have a family.
- I will have a normal life with my family.
- I will live my life and make my dreams come true, surrounded by people close to me.
- I will live my life and also be in my child's life. I will be a better parent.
- I don't think that far ahead, I think about things day by day.
- I don't know, I've been in the cycle of imprisonment since 1998.
- I can't predict.
- I'm doing well, will hopefully be a father.
- I've left the life of crime behind.
- Aiming towards the future, have finished school.
- I'm so used to living in an institution, it increases the risk of reoffending.
- I will be part of my child's life.
- An additional punishment for prisoners has been to revoke family visits for 8 months – relationships have ended.
- Preferably at home, retired and without drugs.
- A normal balanced life with my daughter.
- Normal life with my wife.
- I will be a touring musician.
- I will have moved on in my life.
- I will be free, have a normal daily life with work/school (meaningful), go to the gym and travel, have a home of my own.
- A happy, ordinary citizen, with a profession, a family, a job.
- I will study alongside work. I will help people who have it worse.
- Partly in working life/studying. Hopefully I will have completed psychotherapy.
- My relationship will have survived and I would have a family. I haven't been able to see my family and loved ones due to coronavirus.
- Family, calm and have left criminal life behind, happy.
- Mother of a family.
- I will run my own gym.
- A peaceful family life and something meaningful to do with my hands, such as renovation work.
- Depends on how I'll be able to get an active life that satisfies me in many ways without messing around. I'm working on it, but unless I can find a solution, I'll be back.
- We'll see, I have illnesses, injuries, attrition etc.
- I will have completed my studies and moved to a larger apartment.
- Probably unemployed or retired.
- Hopefully, I'll live abroad.
- I hope I'll get out alive.
- I hope I can live a healthy life without intoxicants.
- On disability pension.
- Will have forgotten about this pointless, shitty time.
- Will live without fear of violence, in a flat where I live all by myself.
- Will be on pension and maybe study.
- Living in the golden middle way.
- Spending time with my children and grandchildren.
- As an entrepreneur.





ADHD symptoms were found in 46 per cent of men and 43 per cent of women. Compared to other prisoners, the prisoners in this group were younger, less likely to be first-time offenders, less educated and ended up in disciplinary isolation more often than others. The results indicate that prisoners with ADHD traits have greater difficulty in adapting to the prison environment.

In the self-assessment questionnaire, 40 per cent of prisoners identified characteristics of ADHD and eight per cent identified autistic traits.

Further research is needed on the suitability of different screening methods for this target group, the special support needs of neurodivergent prisoners, and the link between the characteristics of neurodivergence and psychiatric co-morbidity.

Identifying and taking into account the needs related to the characteristics of neurodivergence in individual work with prisoners and in the planning of the period of imprisonment and rehabilitation programmes is important and may have an impact on the individual's wellbeing, safety during imprisonment and recidivism.

ADHD and neurodivergent characteristics

Introduction

While the incidence of the characteristics of ADHD and autism spectrum disorder in prisoners and those with a criminal background has been studied around the world, there is still little data available on the characteristics of ADHD among Finnish prisoners, and there is no previous research on the autistic traits among Finnish prisoners.

The core characteristics of ADHD are defined as inattentiveness, hyperactivity and impulsiveness, and its prevalence in adults is estimated to be between 2.5 and 3.4 per cent (1). In a study covering several countries, the prevalence of ADHD was found to be on average 30 per cent among juvenile prisoners and 26 per cent among adult prisoners (2). In a study investigating the psychiatric morbidity of juvenile prisoners convicted of violent offences and offences against property (16–22 years), approximately one in two was found to have ADHD (3). A Finnish doctoral dissertation examined the neurocognitive performance of Finnish male prisoners, their problems with reading, spelling and mathematics, and the associations of these with psychiatric disorders and substance addiction (4). Neurocognitive difficulties were found to be common and recidivists appeared to have a tendency to react impulsively in a manner similar to ADHD.

ADHD is an independent risk factor for criminal behaviour and recidivism (5). Compared to other prisoners, the adjustment of prisoners with characteristics of ADHD to the prison environment has proved difficult, and they would appear to have

a higher frequency and severity of violation entries during imprisonment compared to prisoners without ADHD traits (6, 7, 8, 9). Most of the prisoners meeting the diagnostic criteria for ADHD have not been diagnosed, and only a small proportion of the prisoners diagnosed have been treated for their symptoms (10).

The diagnostic criteria for autism spectrum disorder include deficits in social communication and social interaction, restricted repetitive patterns of behaviour, interests, or activities, and hyper- or hyporeactivity to sensory input; the prevalence of autism is estimated to be one per cent of the population (11). Based on studies conducted in the United Kingdom, between 2.1 and 9 per cent of prisoners (9) have characteristics of autism spectrum disorder. A Swedish study (12) assessed that 10 per cent of young men convicted of violent offences met the diagnostic criteria for the autism spectrum, half of whom also simultaneously met the diagnostic criteria for ADHD.

Autism is not an independent risk factor for criminal behaviour, but simultaneous ADHD traits, psychiatric disorders and late diagnosis can increase the risk of criminal behaviour (13). In addition, certain characteristics related to the autism spectrum, such as special interests, inflexibility of activities and thinking, and difficulties in social interactions, may serve as the underlying factors of the offence (14, 15).

Current Care Guidelines (1, 11) have been published on ADHD and autism spectrum disorder, describing recommended practices for the implementation of diagnostic processes and rehabilitation. In the diagnostic processes for ADHD and autism spectrum specified in the Current Care Guidelines, comprehensive information is collected on the individual's developmental history, the occurrence of symptoms and characteristics and their impact on the person's functional capacity in different areas of life and at different stages of development, other factors that may affect symptoms and characteristics (e.g. learning difficulties, stress factors, traumas, substance abuse, brain injuries), and other aspects related to the person's mental and physical health and current life situation.

ADHD in adults is primarily diagnosed by a psychiatric specialist, and the monitoring of treatment is carried out in primary health care, but in demanding differential diagnosis questions, the diagnosis is verified in specialised medical care. Diagnoses of autism spectrum disorder should be made in a multidisciplinary working group acquainted with the condition. This study did not involve carrying out clinical diagnostic assessments but rather examined the manifestation and screening of ADHD and autistic traits in prisoners. For more information about the linguistic characteristics of ADHD and autism spectrum disorder, see the [Linguistic skills](#) chapter of this report.

Research questions and methods

The aim of the sub-study was to examine the prevalence of the neurodivergent characteristics (ADHD and autism) in Finnish prisoners based on a diagnostic interview and self-assessment forms. In addition to the prevalence of the neurodivergent characteristics the differences between the groups were examined in terms of age, gender, lev-

el of education, work ability, first-time offender status, main offence and the isolation measures taken during imprisonment for various reasons. The comparisons also included the willingness of the subjects to set health related goals in their sentence plan.

The Diagnostic Interview for ADHD in Adults (DIVA 2.0) was conducted by prison psychologists and psychiatric nurses from the Health Care Services for Prisoners who had received an orientation on using the method. The results of the DIVA 2.0 interview were scored according to the DSM-5 classification. The characteristics of ADHD and autism spectrum were screened with the generally used Adult ADHD Self-Report Scale-V1.1 Screener (ASRS-A) and Autism Spectrum Quotient –10 items (AQ-10) self-assessment forms as well as The Neurodivergence Screening tool 2.0 assessment form based on the employee's observations. For more information on the used instruments, see [Appendix 3](#).

The distributions of variables and their interdependencies were examined using cross-tabulation. Pearson's chi-squared test was used to test the significance of class frequencies in the cross-tabulation and analysis of variance was used to test the significance of continuous variables.

Results

Diagnostic Interview for ADHD (DIVA 2.0)

The prevalence of the symptoms of ADHD in childhood and adulthood according to the semi-structured DIVA 2.0 diagnostic interview are shown in Table 1. There was no difference in the prevalence between men and women in childhood or in adulthood. The majority of subjects with a significant amount of symptoms indicative of ADHD (hereinafter referred to as the ADHD group) had combination of symptoms of inattentiveness, hyperactivity and impulsiveness (combined type). The number of those subjects who primarily experience the symptoms of hyperactivity or impulsiveness was the lowest. As Table 1 does not separate the combined type from the other types occur-

Table 1. Different types of ADHD in childhood and adulthood based on the DIVA 2.0 interview. ADHD-T=predominantly inattentive type, ADHD-Y/I=predominantly hyperactive-impulsive type, ADHD-C=combined type, ADHD=all types.

	women n = 60	men n = 271	total n = 331
Childhood			
ADHD-T	29 (48.3%)	132 (48.7%)	161 (48.6%)
ADHD-Y/I	25 (41.7%)	121 (44.6%)	146 (44.1%)
Adulthood			
ADHD-T	8 (13.3%)	51 (18.8%)	59 (17.8%)
ADHD-Y/I	3 (5%)	12 (4.4%)	15 (4.5%)
ADHD-C	15 (25%)	61 (22.5%)	76 (23%)
ADHD	26 (43.3%)	124 (45.8%)	150 (45.3%)

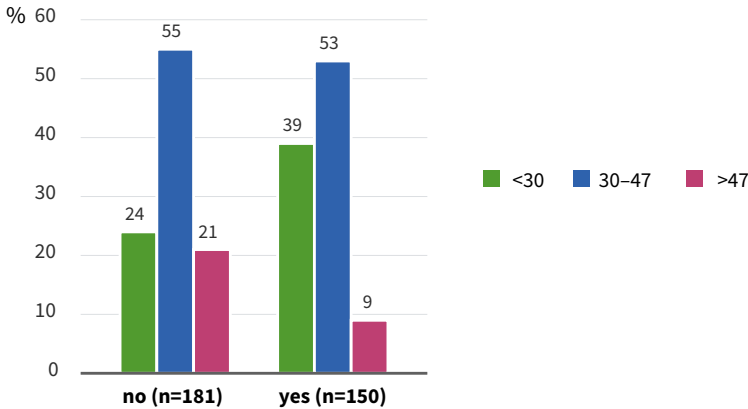


Figure 1. Prevalence of the range of symptoms of ADHD by age group. Although the symptoms focused on younger age groups, prevalence was also high in the oldest group.

ring in childhood, there is an overlap between the groups with the predominantly inattentive type (ADHD-T) and predominantly hyperactive-impulsive type (ADHD-Y/I).

The subjects in the ADHD group were younger than the subjects without symptoms indicating ADHD – hereinafter referred to as the non-ADHD group – (34.0 years vs. 38.7 years, $p < 0.001$). Figure 1 shows the age distributions in three age groups. There was a difference between the various types of ADHD: on average, those who met the criteria for the inattentive/distractible type (ADHD-T) were younger than others (34.5 years vs. 37.0 years), but this difference was not statistically significant. The subjects (ADHD-Y/I) that mainly met the criteria for the hyperactive-impulsive type did not differ from the other subjects in terms of age. The research subjects who met the criteria for the combined type (ADHD-C) were younger than those who did not meet the criteria for the combined type (33.2 years vs. 37.6 years, $p < 0.001$).

The majority of the subjects in the ADHD group had completed at most comprehensive school, and there was a statistically significant difference compared to non-ADHD group subjects (60% vs. 46%, $p = 0.012$). Correspondingly, a higher number of the subjects in the ADHD group reported having been in disciplinary isolation during their imprisonment than in the non-ADHD group (70% vs. 42%, $p = 0.001$). A larger share of the subjects in the ADHD group was more willing to set health related goals in their sentence plan compared to the subjects in the non-ADHD group (73% vs. 52%, $p < 0.001$). A smaller share of the subjects in the ADHD group were first-time offenders compared to those in the non-ADHD group (34% vs. 44%), but this difference was not statistically significant. No difference was found between the subjects in the ADHD group and the non-ADHD group related to the principal offence category (drug offence, violent offence, theft or offence against property) or estimated work ability.

Adult ADHD Self-Report Scale ASRS-A

Based on the DIVA 2.0 interview, 69 per cent of those who currently meet the criteria for a range of symptoms indicating ADHD also received a positive result from the

ASRS-A self-report scale used to screen for ADHD traits. The result indicates a screening sensitivity of 0.69. Of the research subjects meeting the non-ADHD criteria, 19 per cent received a positive screening result, making the ASRS-A specificity in this study group 0.81.

A larger share of women met the criteria of the ADHD self-report scale compared to men (54% vs. 36%, $p=0.001$). Of those who met the criteria of the ADHD self-report scale, 34 per cent had completed some studies after comprehensive school. By contrast, of the research subjects who did not meet the criteria of the ADHD self-report scale, 54 per cent had completed some studies after comprehensive school. The subjects who identified ADHD traits in themselves were younger compared to the other subjects (average age 34.3 years vs. 38.7 years, $p<0.001$). A larger share of those who met the criteria of the ADHD self-report scale reported that they had spent time in isolation either for disciplinary reasons (60% vs. 46%, $p=0.002$) or at their request (23% vs. 16%, $p=0.044$) compared to the other subjects.

A larger proportion of those who met the criteria of the ADHD self-report scale was estimated to have some kind of problem reducing their work ability than the other subjects (52% vs. 42%, $p=0.021$). A larger share of the subjects meeting the criteria of the ADHD self-report scale was more willing to set health related goals in their sentence plan compared to the other subjects (69% vs. 54%, $p=0.001$).

Autism Spectrum Quotient 10 items (AQ-10)

Based on the self-administered AQ10 screening tool used to screen for autistic traits, 8.3 per cent of the subjects identified autistic traits in themselves, seven per cent of men and 12.6 per cent of women. This difference between men and women approached statistical significance ($p=0.051$). No differences regarding the level of education, age, first-timer status, principal offence category, work ability and isolation during imprisonment were found between the research subjects identifying autistic traits and the other research subjects. A larger share of the subjects identifying autistic traits in themselves was willing to set health related goals in their sentence plan compared to the other subjects (76% vs. 58%, $p=0.024$).

The Neurodivergence Screening tool 2.0

The brief NPT 2.0 screen (Neurodiversity Profiling Tool 2.0) used to investigate ADHD and autistic traits based on the study nurse's observations was filled out for all the subjects ($n=527$). Based on the screening tool, 27 (5.1%) of the subjects were identified to have characteristics of ADHD, eight (1.5%) subjects were identified to have characteristics of autism spectrum and 20 (3.8%) subjects were found to have characteristics of both ADHD and autism spectrum. A total of 10.4 per cent of the subjects received positive screening results from the NPT 2.0. of women, 4.8 per cent were found to have characteristics of ADHD traits, 3 per cent autistic traits and 3.2 per cent characteristics of both ADHD and autism. Of men, 5.2 per cent were found to have ADHD traits, one per cent autistic traits and four per cent both ADHD and autistic traits.

Conclusions

The results of this sub-study on the prevalence of the characteristics of ADHD and autism were consistent with previous research literature (2, 3, 9, 12). Based on a diagnostic interview, nearly one in two subjects were identified to have a range of symptoms indicative of ADHD, and about 40 per cent of the subjects identified characteristics related to ADHD in themselves when measured by a self-report scale. Approximately eight per cent of the participants identified characteristics of autism in themselves.

There were differences in the results of the diagnostic interview and self-assessment forms used to screen for the symptoms and characteristics of ADHD. Approximately one in three subjects found to have a range of symptoms indicative of ADHD in the diagnostic interview did not meet the ADHD criteria based on the self-report scale. On the other hand, approximately one in five subjects with no symptoms indicative of ADHD based on the diagnostic interview met the ADHD criteria based on the self-report scale. Based on this study, it appears that the ASRS screen is not a particularly sensitive instrument for identifying prisoners whose symptoms are indicative of ADHD and who should therefore potentially be referred to a more accurate diagnostic assessment.

The self-identification and self-assessment of ADHD traits may be hampered by factors such as the individual's poor self-reflection capabilities or tendency to play down their own difficulties. In addition, due to the highly restricted and structured environment in prison, executive function deficits and inattention typical of ADHD may not be revealed.

According to previous research literature, ADHD appears to be a risk factor for criminal behaviour and habitual offending that begins earlier in life (5) as well as poorer coping with studies and working life (1). The results of this study were consistent with previous research; the subjects whose symptoms were indicative of ADHD were younger and less educated compared to other subjects, and a larger proportion of this group was estimated to have some problem reducing their work ability compared to the other subjects. In addition, a smaller proportion of the subjects with a range of symptoms indicative of ADHD were first-timer offenders compared to other subjects, although the difference was not statistically significant.

A significant proportion of the subjects whose range of symptoms was indicative of ADHD based on the diagnostic interview had been isolated for disciplinary reasons related to their activities during imprisonment compared to the other subjects. The majority of those who met the ADHD self-report scale criteria had also been isolated for disciplinary reasons but also at their own request. This higher incidence of isolation could be related to the impulsiveness and difficulties in emotional regulation characteristic of ADHD. The reasons for isolation at the prisoner's own request were not explained in more detail in this study, but it is possible that those more aware of their own symptoms related to inattention, impulsiveness and hyperactivity may be more likely to seek isolation at their own request to better regulate their actions

and environmental stimuli. The results indicate that prisoners with ADHD traits have greater difficulty in adapting to the prison environment.

As regards the autism spectrum, this study examined the prevalence of autistic traits based on a self-assessment instrument filled out by the subjects. The research subjects identifying characteristics of the autism spectrum in themselves did not differ from the others in terms of age, educational level, work ability, first-time offender status, principal offence or isolation, but a larger share of them was willing to set health related goals as part of their sentence plan compared to the other research subjects.

Interestingly, a larger proportion of women met the criteria for autistic traits in the self-assessment instrument compared to men, although the result was not statistically significant. The result is surprising, as the autism spectrum is more common among boys/men than women/girls in the general population (11).

The prevalence of ADHD is also more common among boys/men than women/girls in the general population (1). However, a larger share of the women participating in this study met the criteria of the ADHD self-report scale compared to men. No difference was found between men and women in the prevalence of symptoms indicative of ADHD in childhood or adulthood. Similar results have also been obtained in previous international studies, and it has been proposed that the factors that generally protect girls/women against criminal behaviour may not provide protection to girls/women with ADHD (2). Under-identification and under-diagnosis of ADHD in girls and women may also influence the higher prevalence of a range of symptoms indicative of ADHD among female prisoners compared to the general population.

Based on this study, the NPT 2.0 tool that relies on the study nurses' observations seems to be a very strict screen for identifying neurodivergent characteristics and related needs. For example, while approximately one in two subjects were found to have ADHD traits based on the diagnostic interview and two out of five subjects based on the self-report scale, the screening tool filled out by the study nurse identified these characteristics in fewer than one in ten subjects. The screening tool "has been developed specifically to support prison workers who work closely with prisoners in the everyday life and rehabilitation of neurodivergent prisoners, so it is possible that the research meetings used as the basis for filling out the NPT 2.0 were not supported with enough information on the possible neurodivergent characteristics in the research subjects or that the criteria had been set too strictly.

Recommendations for practice and future research

Neurodivergent prisoners are a significant group of prisoners with special needs, and it is important to pay attention to this group to foster equality during imprisonment, intervene in the risk factors of recidivism and improve prison security. The characteristics related to both ADHD and autism spectrum reduce the individual's ability to cope in the criminal justice system (9). Failure to identify persons with these traits

poses a risk to their legal protection and the misalignment of rehabilitation measures and, through these, higher recidivism. For many prisoners, imprisonment is one of the most fruitful times for health promotion and preparing and initiating rehabilitation plans. This was also particularly reflected in the willingness of neurodivergent prisoners to set health related goals in their sentence plan.

Health care during imprisonment should be developed and be made to include diagnostics and treatment/rehabilitation in line with the Current Care Guidelines to ensure equal health services for all based on good clinical practices. Prisoners often have several concurrent psychiatric disorders, such as traumas, personality, mood and addiction disorders, and neurological disorders, such as acquired brain injuries and neurodevelopmental disorders (4, 6, 9, 16). This makes posing differential diagnostic questions in neuropsychiatry a complex and challenging task that requires multiprofessional cooperation (psychiatric specialist, neuropsychologist, occupational therapist and speech therapist) and diagnostic competence corresponding to specialised medical care. Despite this, there is a clear mismatch between the resources for carrying out neuropsychiatric assessment periods during imprisonment and the need for them.

In addition to the inadequacy of resources allocated to the neuropsychiatric assessment periods, the results of this study indicate that there is a need to develop and enhance the screening of the neurodivergent prisoners who might benefit from and therefore should be referred to a more accurate diagnostic assessment. The ADHD screening tools are not appropriate in a situation where one in two sentenced prisoners have symptoms indicative of ADHD.

On the other hand, such screening tools could be useful in identifying autistic prisoners and referring them to a neuropsychiatric assessment. Indeed, there is a need for more research-based knowledge and data collected from the day-to-day life in prison regarding which neurodivergent prisoners would benefit from diagnostic examinations and medical treatment and which of them would be adequately supported with psychoeducation, everyday support measures and low-threshold rehabilitation.

According to the Current Care Guidelines, the treatment and rehabilitation of ADHD and autism spectrum disorder includes psychoeducation, psychosocial treatments and medications for ADHD and possible comorbidities. Everyday support measures and necessary modifications in the prisoners' environment should be initiated as soon as there is a suspicion that the prisoner may be autistic (11) or is observed to have problems in functioning or learning related to attentiveness or hyperactivity (1). To implement this recommendation, it would be important to provide training to the personnel at both the Prison and Probation Service and the Health Care Services for Prisoners on how to better identify the neurodivergent characteristics and related special needs and to utilise an approach that takes neurodiversity into account in their work.

It would be important to develop the referral to diagnostic examinations and their implementation as well as treatment, rehabilitation and everyday support measures for neurodivergent prisoners in cooperation with Health Care Services for Prisoners and the Prison and Probation Service. Good diagnostic processes and rehabilitation plans also benefit the health care outside prison provided after imprisonment. Indeed,

it would be important to strengthen cooperation between the health care provided during and after imprisonment to safeguard the continuity of care both at the beginning of the prison sentence as well as at the release stage and to avoid unnecessary interruptions in treatment.

Further studies should examine the link between the characteristics of ADHD and autism spectrum disorder and concurrent psychiatric morbidity, rehabilitation needs, and work ability and functional capacity. It would be important to find out what kinds of special support needs neurodivergent prisoners have during their imprisonment and how these needs could be met. More information would also be needed on the appropriateness and effectiveness of rehabilitation programmes provided during the prison term in neurodivergent prisoners. In the future, it would be important to collect data on the recidivism, employment, morbidity and rehabilitation needs of neurodivergent prisoners in a longitudinal design.

Special attention should be paid to the group of neurodivergent female prisoners. Female prisoners are a special group in itself, and neurodivergent female prisoners are a special group among the group of female prisoners. Based on estimates, both ADHD and autism spectrum disorder are underrecognised and underdiagnosed in women (1, 11). More investments should be made in identifying neurodivergent female prisoners and their special needs and in developing forms of support and rehabilitation in both planning further studies and the implementation of day-to-day practice in prison.

This study investigated the characteristics of the autism spectrum using a short self-reported screening tool and a screening tool based on the observations of an employee. The NPT 2.0 form based on the employee's observations appeared to be a strict screen, and there is reason to further examine its cut-off scores and applicability to identifying the special needs of neurodivergent prisoners. In the future, further information should be collected on the prevalence of autism spectrum disorder among Finnish prisoners and the suitability of different screening methods for this target group. Characteristics and special needs related to the autism spectrum are essential factors to consider both in different forensic psychiatric assessments and in prison term planning. They should also be taken into account in the planning and implementation of rehabilitation programmes aimed at preventing recidivism.

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Conflicts of interest: Reivon rehabilitation services provided by Autism Foundation Finland for neurodivergent clients whose symptoms include criminal or other risky behaviour, involved in the development of the Neurodivergence Screening Tool 2.0 since 2019.

Mika Rautanen

References

- 1) ADHD (attention-deficit hyperactivity disorder) Current Care Guidelines. Working group set up by the Finnish Medical Society Duodecim, the Finnish Child Neurology Association, the Finnish Society for Child and Adolescent Psychiatry and the Finnish Youth Psychiatry Association. Helsinki: Suomalainen Lääkäriseura Duodecim, 2019 (last accessed on 31 May 2023). Available online at: www.kaypahoito.fi
- 2) Young, S., Moss, D., Sedgwick, O., Fridman, M., & Hodgkins, P. 2015a: A meta-analysis of the prevalence of attention deficit hyperactivity disorder in incarcerated populations. *Psychological medicine*, 45(2), 247–258.
- 3) Haapasalo, J., Hämäläinen, T. 1996: Childhood family problems and current psychiatric problems among young violent and property offenders. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(10), 1394–1401.
- 4) Tuominen, T. 2018: Neurocognitive deficits, academic difficulties and substance dependence among Finnish offenders: connections to recidivism and implications for rehabilitation. In *Turun Yliopiston Julkaisuja – Annales Universitatis Turkuensis*.
- 5) Mohr-Jensen, C., Steinhausen, H. C. 2016: A meta-analysis and systematic review of the risks associated with childhood attention-deficit hyperactivity disorder on long-term outcome of arrests, convictions, and incarcerations. *Clinical psychology review*, 48, 32–42.
- 6) Young, S., Sedgwick, O., Fridman, M., Gudjonsson, G., Hodgkins, P., Lantigua, M., González, R. A. 2015b: Co-morbid psychiatric disorders among incarcerated ADHD populations: a meta-analysis. *Psychological Medicine*, 45(12), 2499–2510.
- 7) González, R. A., Gudjonsson, G. H., Wells, J., Young, S. 2016: The role of emotional distress and ADHD on institutional behavioral disturbance and recidivism among offenders. *Journal of attention disorders*, 20(4), 368–378.
- 8) Young, S., Gudjonsson, G. H., Wells, J., Asherson, P., Theobald, D., Oliver, B., Mooney, A. 2009: Attention deficit hyperactivity disorder and critical incidents in a Scottish prison population. *Personality and Individual Differences*, 46(3), 265–269.
- 9) Young, S., González R., Mullens H., Mutch L., Malet-Lambert I., Gudjonsson G. 2018: Neurodevelopmental disorders in prison inmates: comorbidity and combined associations with psychiatric symptoms and behavioural disturbance. *Psychiatry Research*, Volume 261, 109–115.
- 10) Young, S., & Cocallis, K. M. 2019: Attention Deficit Hyperactivity Disorder (ADHD) in the Prison System. *Current psychiatry reports*, 21(6), 41.
- 11) Autism spectrum disorder. Current Care Guidelines. Working group set up by the Finnish Medical Society Duodecim, the Finnish Society for Child and Adolescent Psychiatry, the Finnish Youth Psychiatry Association, the Finnish Society of Intellectual Disability Medicine, the Finnish Pediatric Neurology Association and the Finnish Psychiatric Association. Helsinki: Suomalainen Lääkäriseura Duodecim, 2023 (last accessed on 31 May 2023). Available online at: www.kaypahoito.fi
- 12) Billstedt, E., Anckarsäter, H., Wallinius, M., & Hofvander, B. 2017: Neurodevelopmental disorders in young violent offenders: overlap and background characteristics. *Psychiatry research*, 252, 234–241.
- 13) Heeramun, R., Magnusson, C., Gumpert, C. H., Granath, S., Lundberg, M., Dalman, C., Rai, D. 2017: Autism and convictions for violent crimes: population-based cohort study in Sweden. *Journal of the American Academy of Child & Adolescent Psychiatry*, 56(6), 491–497.
- 14) Collins, J., Horton, K., Gale-St Ives, E., Murphy, G., Barnoux, M. 2022: A Systematic Review of Autistic People and the Criminal Justice System: An Update of King and Murphy (2014). *Journal of Autism and Developmental Disorders*, 1–29.
- 15) Helveschou, S. B., Rasmussen, K., Steindal, K., Søndanaa, E., Nilsson, B., Nøttestad, J. A. 2015: Offending profiles of individuals with autism spectrum disorder: A study of all individuals with autism spectrum disorder examined by the forensic psychiatric service in Norway between 2000 and 2010. *Autism*, 19(7), 850–858.
- 16) Joukamaa, M., Aarnio, J., Von Gruenewaldt, V., Hakamäki, S., Hypén, K., Lauerma, H., Wuolijoki, T. 2010: Health, working capacity and need for treatment of criminal sanction clients. Available online at: www.rikosseuraamus.fi





Nearly all prisoners had experienced physical violence at some point in their lives.

More than one in four prisoners had experienced emotional abuse during their imprisonment.

One in four prisoners reported post-traumatic symptoms, women more often than men. The prevalence of symptoms had clearly increased compared to a previous study.

Rehabilitation should be offered during imprisonment based on symptoms, not only based on offences.

In addition to actual treatment, it is important to enable corrective interactions in day-to-day situations that pay attention to traumatisation.

As trauma symptoms have increased among men, there is reason to develop trauma-conscious treatment practices aimed at men.

Experiences of violence and prevalence of post-traumatic stress symptoms

Introduction

According to a Finnish study, more than half of male prisoners sentenced for violent offences had experienced physical violence during their childhood (1). An extensive Canadian survey found that approximately one in two prisoners had been exposed to traumatic adverse childhood experiences (ACE) (2). According to a study conducted in the United States, recurrent early ACEs, such as experiences of abuse in childhood or ineffective childhood family dynamics, explained the use of violence later in life (3).

In the previous Wattu III study (2010) the traumatic life experiences of prisoners were studied. Fine default, life sentence and female prisoners reported more frequently experiences of violence in their childhood homes compared to male prisoners. In addition to violence in childhood, female prisoners had also experienced all other forms of violence significantly more than others (4).

In addition to experiences of childhood trauma and violence, more recent studies have shown interest in trauma symptoms during imprisonment. Post-traumatic symptoms can appear in many ways in an individual's everyday life: the most common symptom include constant anxiety, avoidance of the source of trauma or anything resembling this, and constant hypervigilance or alertness. Anxiety may result from constantly re-experiencing the traumatic event in memories and mental images or in nightmares, for instance. These symptoms may end up in a behaviour where a person avoids certain places which reminds of traumatic events. All these symptoms

may lead the person to isolate themselves from others, perhaps even significantly, or they may restrict their emotions to the point that it is difficult for them to experience and express their emotion. Meanwhile, staying constantly on alert may cause sleeping difficulties, irritability, inability to concentrate or increased reactivity (5).

The incidence of post-traumatic stress disorder (PTSD) is relatively high in prisoners, although the results vary considerably between studies. This is probably due to the use of different criteria for investigating PTSD in the studies. A meta-analysis carried out in 2018 which compiled several studies on prisoners, found that the prevalence of PTSD was on average 6 per cent in male prisoners and 21 per cent in female prisoners (6). In the Wattu III study, the prevalence of PTSD among Finnish prisoners was approximately two per cent in men and 17 per cent in women based on an examination of current symptoms (4).

The treatment of post-traumatic symptoms during imprisonment is divided into services provided by the Health Care Services for Prisoners and the Prison and Probation Service or programmes produced by third parties. In 2023, the available services included no special treatment programme focused on post-traumatic symptoms or trauma-related intervention.

According to a survey commissioned by Life without Crime, the assistance received by Finnish prisoners for their mental health issues appeared to be minor – less than 15 per cent reported having received treatment (7). In one thesis, prison and probation clients had been asked about their needs for support and assistance, and all interviewees had found it beneficial to have appointments with a psychologist (8). As a shortcoming, the prisoners reported that the well started treatment usually got interrupted when they moved from one prison to another, which resulted in fragmented mental health care, among other things. Instead of individual psychological treatment, the form of support usually reported by the prisoners was substance abuse treatment and support for a crime-free life. For example, many accredited prison care programmes, such as “Anger Management” and “A New Direction”, are related to the prisoner’s offence instead of their symptoms.

Research questions and research methods

This sub-study examined the prisoners’ lifetime experiences of violence, current PTSD symptoms and the connection between them. The incidence of experiences of violence was studied by gender, age groups, first-timers and multiple offenders, between people assessed to have work ability and those with reduced work ability, and in different groups divided by offence types. The experiences of violence during imprisonment were separately examined by gender.

The used research methods included a violence questionnaire. In the questionnaire, the respondents assessed their experiences of violence throughout a lifetime. The form was a Finnish translation of the original NorVold Abuse Questionnaire (NorAQ) (9) augmented with a question on economic abuse. The lifetime experienced

violence was asked in four categories: physical abuse, emotional abuse, sexual abuse and economic abuse. Each category included one to four questions about the type of violence, and the answer options varied between “none”, “as a child”, “as an adult”, “as a child and adult” and “during imprisonment”. This sub-study did not specify whether the self-assessed violence had taken place during the respondents’ childhood or adulthood. Instead, even one “yes” response in a given category was interpreted to mean that the respondent had experienced violence during their lifetime. The violence experienced during imprisonment was investigated separately.

Current post-traumatic stress symptoms were studied with the Trauma Screening Questionnaire (TSQ) (10), which has ten questions about the respondent’s current PTSD symptoms. The instrument has been developed for screening for post-traumatic stress disorder and is used to investigate the trauma re-experiencing and anxiety symptoms during the two weeks preceding the symptoms (11). The screen is considered positive if the subject has selected the “yes” response to six or more items. TSQ has been found to be a reliable self-assessment method (12) that has been endorsed as a screening tool by, among others, the Current Care Guideline for examining a patient for PTSD diagnostics (13). However, this is not an actual diagnostic interview but a screening tool for symptoms.

Pearson’s chi-squared test and analysis of variance (ANOVA) were used to compare differences between groups.

Results

More than 90 per cent of all prisoners had experienced physical violence at some point of their lives. More than two out of three had experienced psychological abuse, approximately one out of three had experienced economic abuse and more than one fifth of prisoners had experienced sexual abuse. Prisoners’ lifetime experiences of violence are presented in Figure 1.

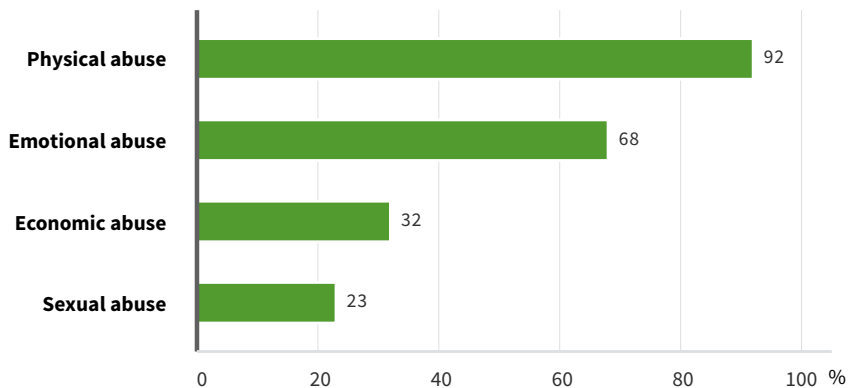


Figure 1. Prisoners’ lifetime experiences of violence and abuse. 92% of all prisoners reported having experienced physical abuse. 68% had experienced emotional abuse, 23% had experienced sexual abuse and 32% had experienced economic abuse.

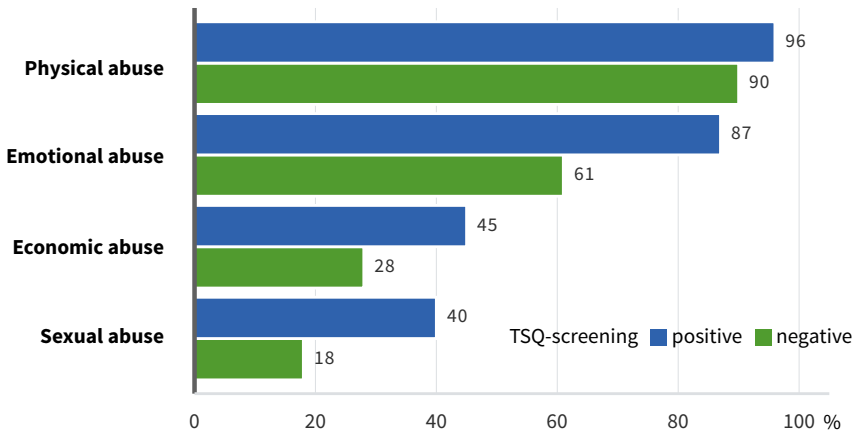


Figure 2. Distribution of the results of the TSQ screening tool on the presence and absence of post-traumatic symptoms in different groups of experiences of abuse (%).

The results of the Trauma Screening Questionnaire could be divided into two groups in which the trauma screen was either positive or negative, i.e. the respondents' symptoms were either clinically significant or not. Of all prisoners, one in four (25%) showed clinically significant symptoms, see Figure 2 above. Nearly all respondents (96%) in the group with current traumatic stress symptoms also had life experiences of violence. Of the prisoners with trauma symptoms, 87 per cent had experienced emotional abuse, 40 per cent had experienced sexual abuse and 45 per cent had experienced economic abuse. The respondents with no clinical trauma symptoms had also encountered all the aforementioned forms of violence.

Women reported experiences of all the abuse types (emotional, physical, sexual, economic) in their lives more than men, Figure 3. By contrast, men had more experiences of violence during their imprisonment than women. The experiences of sexual abuse during imprisonment seemed to be extremely rare in both sexes, see Figure 4. Female prisoners reported more trauma symptoms than men, but no significant differences were observed in the prevalence of trauma symptoms between men and women. More than one fifth of men (23%) and less than one third of women (31%) received positive TSQ screening results.

Trauma symptoms were most common in the group of prisoners aged 30-47 (50%), and the difference to other age groups was significant. More than one third of prisoners under the age of 30 (38%) received a positive trauma screen, while the oldest prisoner group, i.e. those over the age of 47, reported the least trauma symptoms (12%).

The majority (82%) of the prisoners who had been assessed to have full work ability by the study nurse did not experience post-traumatic symptoms. Of the prisoners assessed to have reduced work ability, 33 per cent had trauma symptoms.

Approximately three out of four (78%) prisoners with trauma symptoms were willing to set health care targets in their sentence plan. Meanwhile, more than half (53%) of those in the group with no trauma symptoms were also willing to do so.

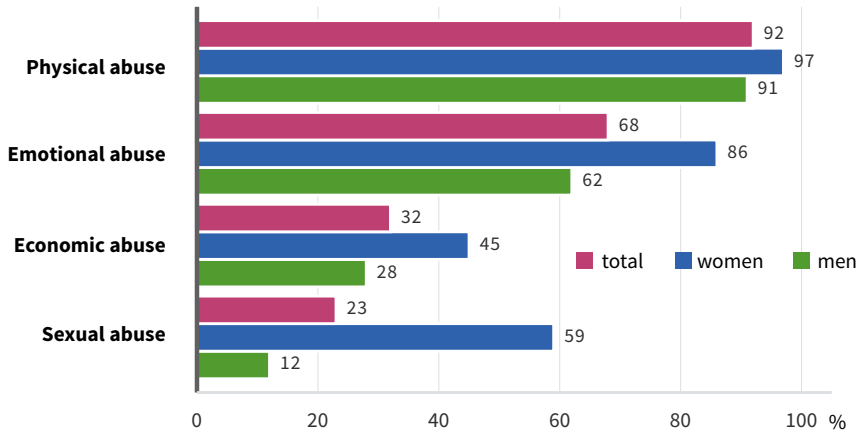


Figure 3. Lifetime prevalence of different forms of violence and abuse by gender (%). Women reported having encountered all forms of violence more often than men.

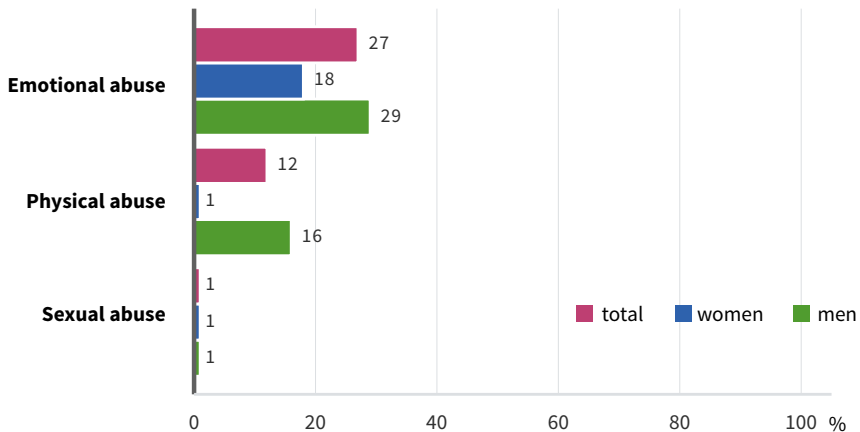


Figure 4. Forms of violence and abuse experienced during imprisonment by gender (%).

No link was found between first-timer status or the principal offence category and the incidence of trauma symptoms. There was also no connection between the symptoms and whether the prisoner was serving a long sentence (over two years) or a shorter sentence. By contrast, respondents who had spent more than two years of their life in prison either consecutively or as separate periods seemed to experience fewer trauma symptoms than others.

It was separately checked how the TSQ self-assessment method was realised in cases where the respondent had also undergone a Structured Clinical Interview for DSM Disorders (SCID) and an assessment of PTSD included in the interview. Of the prisoners with a positive result in the TSQ, only 22 per cent met the criteria for PTSD in the interview. Meanwhile, in the group meeting the criteria for PTSD, 49 per cent of the respondents had a positive result in the TSQ.

Conclusions

In this study the prevalence of violence experiences appeared to fall in line with previous research results: more than half of male and female prisoners had experienced some form of violence during their lives. The exceptions were economic abuse and experiences of sexual abuse among men. Almost every prisoner had experienced physical violence. Women prisoners report more experiences of violence than male prisoners.

Violence also occurs during imprisonment. During their imprisonment, more than one in ten male prisoners had experienced physical abuse and more than one in four prisoners had experienced emotional abuse. The study results do not answer the question of where the experiences of violence arise during imprisonment; whether they describe activities between prisoners, whether they concern messages from outside the prison, which can be interpreted as emotional abuse, and whether in some cases they are situations between staff and prisoners.

The surveys on the experiences of violence and abuse also do not lend themselves to determine whether those previously exposed to violence are experiencing related trauma symptoms. There are major differences between individuals regarding the after-effects of similar experiences. For this reason, it was important that the examination was not limited to violent and potentially traumatic experiences, but also included an interview used to explore how the trauma symptoms currently appear in the person's life.

In this study, gender differences in trauma symptoms emerged as an interesting topic slightly differing from the previous prisoner study. In the previous Wattu III study, women reported clearly more PTSD symptoms than men. In the results obtained in the present study, women still reported more trauma symptoms than men in the TSQ screen, but the gap in the results had decreased as men reported more trauma symptoms than before. It would appear that the TSQ screen succeeds better at making the post-traumatic symptoms of male prisoners visible than the more demanding SCID interview used to chart PTSD.

Instead of a diagnostic investigation of PTSD, the TSQ screen can be used to determine symptoms more easily, which helps assess the actual prevalence of clinical symptoms in prisoners. It might make more sense to screen for symptoms instead of carrying out diagnostic interviews for the purpose of assessing treatment needs even from the viewpoint of time use and necessary expertise.

In addition to gender differences, differences were also observed in the prevalence of trauma symptoms by age group. In the middle age group in the dataset, i.e. prisoners aged 30–47, the incidence of symptoms was highest while being the lowest in the oldest group. This study does not lend itself to determining what causes these differences between the generations of prisoners.

The incidence of trauma symptoms seems to have increased. Compared to the previous prisoner survey of 2010, in which just over two per cent met the criteria for PTSD symptoms investigated with the SCID interview, now 13 per cent of the total prison sample meet the criteria of the interview. In this study, the increase in the inci-

dence of PTSD was a surprising observation and, according to the preliminary results, it remains unclear what causes the higher incidence of PTSD.

In the international study mentioned in the introduction (6), the prevalence of PTSD during the previous 12 months was 9.9 in male prisoners and 26.1 in female prisoners. These figures seem to correspond better to the current findings on the prevalence of PTSD in Finland. In European surveys, the prevalence of PTSD in the normal population over a 12-month period has been reported as 1.1–5.6% (14, 15, 16). Compared to these figures, the two-per-cent prevalence rate in the previous Wattu III study seems low, and the current result is better aligned with the commonly held view of the prevalence of trauma symptoms.

An interesting observation was also made in the group of prisoners with more than two years of lifetime imprisonment. The group includes both recidivists and prisoners serving a single, long sentence. The long period spent in an institution appeared to reduce trauma symptoms: 80 per cent had a negative result in the TSQ, compared to 66 per cent among all other respondents.

Recommendations for practice and future research

The results of this report indicate that the prevalence of trauma symptoms has increased from previous studies. It would therefore be important to investigate what explains the increase of more than ten per cent in PTSD symptoms between the present and previous prisoner study. There is also reason to examine whether recidivists more frequently experience lifetime violence compared to first-timers or those who have been sentenced only once. More details related to the experiences of violence also still remain unexplored in the dataset, such as whether the violence experienced by the respondents occurred more often in their childhood or adulthood, or whether trauma symptoms are more common in those who have experienced violence as children rather than as adults. The link between violence experienced during imprisonment and symptoms is a useful topic for further research.

At the international level, there are many treatment programmes that take into account the life histories of prisoners, which are typically more difficult than average, and seek to prevent recidivism. One study carried out in the United States found men who had personally witnessed abuse or been assaulted or abused in their childhood were particularly likely to be guilty of domestic violence (17). Special therapeutic programmes implemented in the prison environment with the goal of preventing recidivism have been developed for men guilty of domestic violence. However, based on research literature, the results of the programmes have somewhat varied. In some cases, the programmes have failed to have a significant impact on recidivism (18, 19), whereas some studies have reported lower recidivism among a group receiving treatment (20).

The present results confirm the idea that rehabilitation should be offered specifically according to the prisoner's symptoms instead of only based on the prisoner's offence. The results indicate that the offence-based group shows no significant associ-

ation with whether or not the prisoner has trauma symptoms. In fact, in the future, rehabilitation during imprisonment could be developed by separating the prisoners with post-traumatic symptoms from their offence-based groups and providing them with trauma-oriented treatment regardless of the offence they have committed. Prisoners with post-traumatic symptoms could benefit from treatment for trauma, while asymptomatic prisoners could continue in an offence-specific programme. This might enable better targeting of rehabilitation.

There are new studies on psychological treatments for mental symptoms in prisoners, but the results seem uncertain. For example, the results of psychological treatments for depression and anxiety based on CBT and mindfulness among prisoners remain modest, and prisoners with trauma symptoms did not benefit much from the treatment (21). On the other hand, a programme aimed at treating trauma symptoms aimed at female prisoners managed to reduce symptoms (22). In a Canadian study (23), the authors suggest that trauma-oriented treatment should be offered not only to female prisoners but also more extensively to male prisoners than at present. This corresponds to the observations described in the report on the increase in trauma symptoms among men compared to previous studies, so there are grounds to also develop a trauma-conscious treatment practice aimed at men in the future. Preliminary results are available on this topic: a trauma programme adapted to prisons has produced promising results in both men and women (24).

The results of this study show that prisoners have a lot of lifetime experiences of violence as well as trauma symptoms. An encouraging finding of the present study is that two thirds of the prisoners with trauma symptoms wished that their sentence plan would include health-related goals. More broadly, mental health care and rehabilitation could serve as a common goal between prisoners and the Prison and Probation Service

Post-traumatic stress disorder appears in many different ways, and recognising behaviour as a part of an extensive clinical picture helps staff to regard prisoners' actions with more understanding and competence. Indeed it is important to enable corrective interactions in day-to-day situations in addition to actual treatment.

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References

- 1) Haapasalo, J. and Hämäläinen, T. 1996: Childhood family problems and current psychiatric problems among young violent and property offenders. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(10), 1394–1401.
- 2) Bodkin, C., Pivnick, L., Bondy, S.J., Ziegler, C., Martin, R.E., Jernigan, C., Kouyoumdjian, F. 2019: History of childhood abuse in populations incarcerated in Canada: A systematic review and meta-analysis. *American Journal of Public Health*, 109(3), e1–e11.
- 3) Duke, N.N., Pettingell, S.L., McMorris, B.J., Borowsky, I.W. 2010: Adolescent violence perpetration: Associations with multiple types of adverse childhood experiences. *Pediatrics*, 125(4), e778–e786.
- 4) Publications by the Criminal Sanctions Agency 1/2010. Prison and Probation Service. Referenced on 12 May 2023. Available at: https://www.rikosseuraamus.fi/material/attachments/rise/julkaisut-risenjulkaisusarja/6AqMACEr8/RISE_1_2010_Rikosseuraamusasiakkaiden_terveys_tyokyky_ja_hoidontarve.pdf
- 5) Huttunen M. 2018: Post-traumatic stress disorder. Lääkärikirja Duodecim. Kustannus Oy Duodecim 30 November 2018. <https://www.terveyskirjasto.fi/dlk00526#s1>
- 6) Baranyi, G., Cassidy, M., Fazel, S., Priebe, S., Mundt, A.P. 2018: Prevalence of posttraumatic stress disorder in prisoners. *Epidemiologic reviews*, 40(1), 134–145.
- 7) Niemelä, H., Turunen, S., Harsu, A., Kaurala, M., Sunikka, S. Daavittila, T. 2021: Kriminaalihuollon tukisäätiö. "Et vapautusta olis elämä, jota elää". Selvitys rikosseuraamusasiakkaiden tarpeista ja oikeuksien toteutumisesta. Available at: <https://rets.fi/wp-content/uploads/2021/11/Kysely-vangeille-verkkojulkaisu-2021.pdf>
- 8) Ojanperä, J. 2016: Criminal sanctions clients' thoughts about their need for support and help.
- 9) Swahnberg, I.K., Wijma, B. 2003: The NorVold Abuse Questionnaire (NorAQ) Validation of new measures of emotional, physical, and sexual abuse, and abuse in the health care system among women. *The European Journal of Public Health*, 13(4), 361–366.
- 10) Brewin, C.R., Rose, S., Andrews, B., Green, J., Tata, P., McEvedy, C., Foa, E.B. 2002: Brief screening instrument for post-traumatic stress disorder. *The British Journal of Psychiatry*, 181(2), 158–162.
- 11) Mielentervestalo.fi. n.d. Indicators. Accessed on 24 April 2023. <https://www.mielentervestalo.fi/fi/pro/mittarit/tsq-trauma-screening-questionnaire>
- 12) Walters, J.T., Bisson, J.I., Shepherd, J.P. 2007: Predicting post-traumatic stress disorder: validation of the Trauma Screening Questionnaire in victims of assault. *Psychological medicine*, 37(1), 143–150.
- 13) Post-traumatic stress disorder. Current Care Guideline. Working group set up by the Finnish Medical Society Duodecim, the Finnish Psychiatric Association and the Finnish Society for Child and Adolescent Psychiatry 2022 (referred on 12 April 2023). Available at: https://www.kaypahoito.fi/hoi50080#s6_1
- 14) Darves-Bornoz, J.M., Alonso, J., de Girolamo, G., Graaf, R.D., Haro, J.M., Kovess-Masfety, V., Gasquet, I. 2008: Main traumatic events in Europe: PTSD in the European study of the epidemiology of mental disorders survey. *Journal of traumatic stress*, 21(5), 455–462.
- 15) Perkonig, A., Kessler, R.C., Storz, S., Wittchen, H.U. 2000: Traumatic events and post-traumatic stress disorder in the community: prevalence, risk factors and comorbidity. *Acta psychiatrica scandinavica*, 101(1), 46–59.
- 16) Frans, Ö., Rimmö, P.A., Åberg, L., Fredrikson, M. 2005: Trauma exposure and post-traumatic stress disorder in the general population. *Acta Psychiatrica Scandinavica*, 111(4), 291–290.
- 17) Reavis, J.A., Looman, J., Franco, K.A., Rojas, B. 2013: Adverse childhood experiences and adult criminality: how long must we live before we possess our own lives? *The Permanente Journal*, 17(2), 44.
- 18) Babcock, J.C., Green, C.E., Robie, C. 2004: Does batterers' treatment work? A meta-analytic review of domestic violence treatment. *Clinical psychology review*, 23(8), 1023–1053.
- 19) Marques, J.K., Wiederanders, M., Day, D.M., Nelson, C., Van Ommeren, A. 2005: Effects of a relapse prevention program on sexual recidivism: Final results from California's Sex Offender Treatment and Evaluation Project (SOTEP). *Sexual abuse: A journal of research and treatment*, 17, 79–107.
- 20) Hanson, R.K., Gordon, A., Harris, A.J., Marques, J.K., Murphy, W., Quinsey, V.L., Seto, M.C. 2002: First report of the collaborative outcome data project on the effectiveness of psychological treatment for sex offenders. *Sexual Abuse: A journal of research and treatment*, 14, 169–194.
- 21) Yoon, I.A., Slade, K., Fazel, S. 2017: Outcomes of psychological therapies for prisoners with mental health problems: A systematic review and meta-analysis. *Journal of consulting and clinical psychology*, 85(8), 783.
- 22) Lynch, S.M., Heath, N.M., Mathews, K.C., Cepeda, G.J. 2012: Seeking safety: an intervention for trauma-exposed incarcerated women? *Journal of Trauma & Dissociation*, 13(1), 88–101.
- 23) Wanamaker, K.A., Brown, S.L., Czerwinsky, A.M. 2022: Abuse, neglect and witnessing violence during childhood within justice-involved samples: A meta-analysis of the prevalence and nature of gender differences and similarities. *Journal of Criminal Justice*, 82, 101990.
- 24) Gajewski-Nemes, J. and Messina, N. 2021: Exploring and healing invisible wounds: Perceptions of trauma-specific treatment from incarcerated men and women. *Journal of Trauma & Treatment*, 10(5), 1–8.



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Eight per cent of the prisoners had experienced psychosis during their lifetime (excluding substance-induced psychosis, which 34 per cent had experienced). In addition to psychosis, almost everyone had a substance use or personality disorder, often both.

In this group, imprisonment was most often the result of a violent offence. However, only one in ten prisoners sentenced due to a violent offence had suffered a psychosis during their lifetime.

Prisoners with psychosis are a vulnerable group with many disorders and a low level of education and reduced work ability. During their imprisonment, they are more likely to be subject to isolation measures than others.

It must be ensured that prisons do not become an inappropriate place for the placement of people with serious mental illness.

Psychotic disorders

Introduction

Psychoses are severe mental health disorders associated with serious difficulty in determining what is real and are a temporary or permanent impairment of functional capacity. Symptoms typical of psychosis include hallucinations, delusions, disorganisation of speech and behaviour, flat affect and a decline in cognitive functions, such as memory, alertness and executive functions. Psychoses are linked to general social disadvantage and pose a serious risk of social exclusion for those affected.

Similar to other psychological disorders, psychoses are overrepresented in the prison population (1). The total lifetime prevalence of psychotic disorders (other than substance-induced psychosis) belonging to the schizophrenia group ICD-10 (F20–F29) is approximately two per cent in the Finnish population (2). In the previous prisoner study conducted between 2006 and 2010 (Wattu III), the lifetime prevalence of these psychoses in the prison population was around six per cent (3).

The association of psychoses with violence and offending has been studied extensively. A link between schizophrenia and an increased risk of violence has been observed in several studies (4, 5, 6). The risk of violence for a person suffering from psychosis is increased by factors such as an antisocial personality, substance abuse disorder, prior violence, lack of insight into the condition, and neglecting medical treatment (5, 7). In itself, psychosis seems to increase the risk of violence, especially when left untreated or occurring simultaneously with a substance abuse disorder (4, 5, 6).

The violence that emerges in connection with psychoses may actually be better explained by so-called criminogenic factors, such as antisocial companions, positive attitudes towards crimes, unemployment, and substance use, which are more common among people with mental illness than in the general population (5).

Despite the increased risk of violence, only a small proportion of persons with psychosis are violent (6), and only a small proportion of the perpetrators of violent crime suffer from psychosis (8). However, among those suffering from schizophrenia, there is a minority who repeatedly commit acts of violence while in a psychotic state and often under the influence of intoxicants (7). Violent psychosis patients are at risk of being left without appropriate treatment, and in the eyes of the general public, the violent behaviour of this marginal group may unfairly stigmatize all schizophrenia patients (7).

In recent years, there has been discussion on the increase in prisoners with psychosis within the field. The number of psychoses has been observed to have increased tenfold in the Finnish prison population between 2005 and 2016 (9), and prisoners have been released to receive treatment outside the prison more frequently in recent years due to chronic psychosis (10). These findings indicate that for some, the treatment for a serious mental health disorder may only be available through the prison system (11). However, the Psychiatric Prison Hospital is primarily intended as an acute care unit and does not enable the provision of progressive and rehabilitative treatment for a patient suffering from chronic psychosis (10).

As imprisonment exacerbates existing psychological symptoms and as psychotic symptoms increase the risk of recidivism and violence, this group of prisoners has extensive individual, social and economic impacts.

Research questions and research methods

The study examined the lifetime psychoses and concurrent substance abuse and personality disorders and hepatitis C in Finnish prisoners. The study focused on disorders F20–F29, which are classified as psychotic disorders under ICD-10: schizophrenia, schizotypal disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, a psychotic disorder brought on by a systemic disease and unspecified psychotic disorder. Psychotic disorders triggered by psychoactive substances, or so-called substance-induced psychoses, were examined as a separate group from other psychoses, as they differ from chronic and progressive psychoses in terms of both their origin and characteristics.

Psychoses and substance abuse and personality disorders in prisoners were assessed using the semi-structured SCID I and SCID II interview methods (Structured Clinical Interview for DSM-IV), of which more information is available in [Appendix 2](#). The instruments can be used to assess whether individuals meet the diagnostic criteria for the most common mental health disorders (SCID I) and personality disorders (SCID II) acutely (diagnostic criteria met in the previous month) and during one's lifetime (diagnostic criteria met at some point in life). The study examined the lifetime

prevalence of psychoses. It should be noted that psychosis is not actually diagnosed based solely on the SCID interview, as the diagnosis requires further information on health and an assessment by a physician. However, the SCID method provides sufficient uniform data for the purposes of comparative research.

The prevalence of hepatitis C was examined on the basis of questionnaire responses. For information about Hepatitis C, see the [Infectious diseases](#) chapter.

The research questions were examined in a descriptive manner based on cross-tabulation and frequencies. Differences between prisoners with a lifetime psychosis and other prisoners were examined using Pearson's chi-squared test and the analysis of variance (ANOVA).

Results

Lifetime psychoses

Eight per cent of the prisoners participating in this study were found to have a lifetime psychosis. The most common form of psychosis was schizophrenia (3%) and the second most common delusional disorder (2%). Two per cent had acute psychosis at the time of the study.

Of the individual psychotic disorders, schizophrenia occurred in female prisoners statistically significantly more often than in male prisoners ($p=0.023$). No statistically significant differences were observed in the examination of other individual psychotic disorders by gender or age group.

In an analysis separate from other psychoses, a lifetime psychotic disorder triggered by a psychoactive substance was observed in one in three (34%) research subjects. One in five (21%) of the prisoners who had a lifetime psychosis also had substance-induced psychosis at some point in their lives. For more information about substance abuse disorders, see the chapter [Substance use and substance use disorders](#).

Table 1 presents the prevalence of lifetime psychoses and simultaneous substance abuse and personality disorders as well as hepatitis C in this study and in the previous 2010 Wattu III study insofar as data were available. The absolute prevalence numbers in the Wattu III study have been calculated using the percentages mentioned in the study's final report. Changes occurring in the prevalence of lifetime and acute psychoses between these two studies have also been calculated for the table.

The comparison is descriptive, as it was not possible to make a statistical comparison between the two population samples differing in terms of time and background factors in this study.

Simultaneous substance abuse and personality disorders and hepatitis C

Almost all prisoners with a lifetime psychosis (96%) had a simultaneous substance abuse disorder and, correspondingly, nearly all (96%) had a simultaneous personality disorder. Nearly all the prisoners with a simultaneous substance abuse disorder ($n=23$)

Table 1. Lifetime psychoses, simultaneous substance abuse and personality disorders and simultaneous hepatitis C in the Finnish prisoner population in the periods 2006–2010 (Wattu III) and 2020–2022 (Wattu IV).

	men			women			in total		
	Wattu IV n=239	Wattu III n=309	change	Wattu IV n=56	Wattu III n=101	change	Wattu IV n=295	Wattu III n=410	change
Lifetime psychosis	16 (6.7%)	15 (4.9%)	37%	8 (14.3%)	11 (10.9%)	31%	24 (8.1%)	26 (6.3%)	29%
& substance abuse disorder	16 (100%)	–	–	7 (88%)	–	–	23 (96%)	–	–
& personality disorder	15 (94%)	–	–	6 (75%)	–	–	21* (96%)	–	–
& substance abuse and personality disorder	15 (94%)	–	–	6 (75%)	–	–	21* (96%)	–	–
& Hepatitis C	10 (63%)	–	–	1 (13%)	–	–	11 (46%)	–	–
Acute psychosis	5 (2.1%)	7 (2.3%)	-9%	2 (3.6%)	8 (7.9%)	-54%	7 (2.4%)	15 (3.7%)	-35%
Lifetime psychosis triggered by a psychoactive substance (substance-induced psychosis)	84 (35%)	–	–	16 (29%)	–	–	100 (34%)	–	–
Acute substance-induced psychosis	2 (1%)	–	–	0 (0%)	–	–	2 (1%)	–	–

* n=22, information on personality disorder missing for two

were addicted to alcohol (96%) and narcotics (96%). The most common personality disorder type occurring simultaneously with a lifetime psychosis disorder was antisocial personality disorder, which was diagnosed in everyone in the group, in addition to which the research subjects could have other personality disorders.

Nine out of ten (88%) of the prisoners in the psychosis group had a simultaneous substance abuse and personality disorder. All prisoners with a lifetime psychosis and personality disorder also had a substance abuse disorder.

Almost half (46%) of those in the lifetime psychosis group reported that they also currently or previously had hepatitis C.

Violent offence as principal offence

For three out of four (75%) prisoners with a lifetime psychosis, a violent offence was their principal offence. The principal offence type refers to the most serious offence for which the prisoner had been sentenced to prison during the study. The prisoners in the psychosis group were statistically significantly more likely to have had a violent offence as their principal offence type compared to other subjects ($p=0.038$). Of all the prisoners whose principal offence was a violent offence, one in ten (10%) had had a psychosis at some point of their lives.

While violent offences seemed to be somewhat more frequently associated with a lifetime psychotic disorder compared to other offence categories, this statistical association was not strong and disappeared when the association was examined dichotomously in two categories, violent or other offences ($p=0.096$).

Level of education

Nearly three out of four (71%) prisoners with a lifetime psychosis had completed basic education at most. These prisoners were more likely than other prisoners to have no education beyond basic education ($p=0.043$).

Isolation for disciplinary reasons or at the prisoner's request

Three out of four (78%) prisoners in the psychosis group had been isolated for disciplinary reasons at some point, and almost half (48%) had been isolated at their own request at some point. These prisoners had spent time in isolation statistically more often isolated than other prisoners, both for disciplinary reasons ($p=0.020$) and at their own request ($p<0.001$).

Work ability

Three out of four (75%) prisoners with a lifetime psychosis had a reduced work ability based on the study nurse's assessment. The work ability of these prisoners was significantly lower compared to other research subjects ($p<0.001$).

Forensic mental health examination

In the psychosis group, just under one third (29%) reported that they had undergone a forensic mental health examination at some point during their life in accordance with the Health Care Services for Prisoners (VTH) service map. No statistically significant difference in participation in the forensic mental health examination was found between this prisoner group and other prisoners.

Conclusions

Eight per cent of the prisoners participating in the study had suffered from some psychotic disorder included in the schizophrenia group F20-F29 during their lives. The most common psychotic disorder was schizophrenia. According to this study, all lifetime psychoses in the schizophrenia group are around four times more common and schizophrenia is around three times more common in the prison population than in Finland's general population.

Almost all prisoners with a lifetime psychosis had a simultaneous substance abuse and/or personality disorder. In addition, one in two had hepatitis C, and one in four had also had a substance-induced psychosis at some point. These findings show that prisoners have multiple disorders, which must be taken into account in the planning and implementation of treatment and rehabilitation.

The personality disorder type of all the subjects in the psychosis group was anti-social personality. As such, this finding on antisocial behaviour among prisoners is no surprise – after all, antisocial behaviour can even be regarded as a precondition for committing offences and ending up in prison. However, the prevalence of antiso-

cial personality disorders in prisoners with psychotic disorders raises concerns about whether psychoses are unidentified due to antisocial traits. It is known that diagnosing a psychotic disorder is already difficult in itself, and it is particularly challenging when it occurs simultaneously with substance abuse, personality disorders and criminal behaviour (11). There is a risk that the prisoner will be left without proper treatment, or that the courts will not order a mental examination, even for prisoners who meet the criteria for it. The increase in the number of psychosis patients released for out-of-prison treatment in recent years can be partly explained by the fact that psychotic disorders tend to be only identified once the symptoms are highly severe.

The most common principal offence category for prisoners with a lifetime psychosis was a violent offence. This finding supports the view that violent psychosis patients are at risk of being excluded from help in society. However, it is important to remember that only one in ten prisoners whose principal offence was a violent offence had developed a psychosis at some point in their lives.

The prisoners of the psychosis group ended up in isolation more often than other prisoners both for disciplinary reasons and based on their own request. This can be explained by the fact that people with mental health disorders are more poorly equipped to deal with prison conditions and related stress (12). This may manifest as disruptive behaviour, which prison staff may unsuccessfully try to curb by punitive measures, such as isolation (12). On the other hand, prisoners with psychosis may personally request isolation to get a respite from the stressful prison environment. Whatever the reason for isolation, it is known to have harmful psychological effects on everyone, especially those with severe mental health disorders, such as psychotic disorders (12).

In addition to multiple disorders and a high prevalence of isolation measures, prisoners with a lifetime psychosis were more likely than other prisoners to have completed no education beyond basic education and have a reduced work ability. The results reflect the diverse vulnerability of prisoners with psychotic disorders, which should be taken into account in care and rehabilitation plans both during and after their imprisonment.

Less than one third of prisoners with a lifetime psychosis had undergone a forensic mental health examination produced by the Health Care Services for Prisoners. Although the research findings do not provide a detailed picture of those who have undergone a forensic mental health examination in general – the question concerned only the studies produced by the Health Care Services for Prisoners and it could also be answered by those who underwent a mental examination in another hospital – they raise a question of the extent to which those with a serious mental illness are ordered to undergo mental examinations. The number of completed forensic mental health examinations has decreased significantly in recent decades (13). Indeed, the disorders belonging to the psychosis group are the most common diagnoses found in mental examinations, and these will lead to the person undergoing mental examination being considered criminally irresponsible nearly without exception (13). Although the results of this study do not lend themselves to drawing conclusions on the number of prisoners with psychotic disorders who have undergone a mental examination, they provide a motivation for exploring the topic further in the future.

What about the increase in the number of psychotic disorders in the prison population? This can be assessed by examining the prevalence rates in previous studies. Both in the 2010 Wattu III study and the 2017 psychosis study (9), the prevalence of prisoners' lifetime psychoses was around six per cent. In view of these findings, it appears that the number of lifetime psychoses in the prison population has increased in recent years. However, the studies are not directly comparable, as they differ in terms of the research subjects' background factors, such as education, among other things. In addition, the research population of Wattu IV and the 2017 study consisted of sentenced prisoners, whereas the population of Wattu II included fine default prisoners and probation clients in addition to sentenced prisoners. Data on lifetime psychoses was collected using the SCID I and SCID II interviews in Wattu III and Wattu IV, whereas the data of the 2017 study was based on the prison's patient information system.

Perhaps the most reliable comparative data on the increase in lifetime psychosis rates can be obtained by examining the differences between Wattu III and Wattu IV regarding the gender-specific prevalence of psychosis. Table 1 shows that, in the previous 15 years, the number of psychosis cases has increased by about one third (+29%), and the increase has been almost the same in both male (+37%) and female (+31%) prisoners' groups. This comparison supports the idea of an increase in the lifetime psychotic disorder rate among the population that ends up in prison. However, the prevalence of acute psychotic disorders that require immediate treatment identified in research has been simultaneously decreasing.

Recommendations for practice and future research

In an ideal situation, all persons with a mental illness would be reached and referred to treatment long before a need to even consider imprisonment. The onset of psychosis is often preceded by months or years of prodromal symptoms and an overall decline in cognitive functions. The earlier the risk of psychosis is detected, the better the prognosis is for treating the disease. Therefore, there is a need to pay attention and allocate resources to both the availability of services during imprisonment and, above all, the functionality, availability and adequacy of the entire public mental health service system. A patient with multiple problems who struggles to adhere to care challenges the treatment system, especially in places where the continuity of services is not ensured.

Efforts can be made to prevent or delay the onset of psychosis, for example by treating anxiety and affective symptoms and through psychoeducation and cognitive psychotherapy (14). For this reason, it should be ensured that sufficient competence and resources for identifying patients at risk of psychosis and know-how for providing treatment that prevents the onset of psychotic disorders are available at the primary health care level.

At the population level, the risk factors of psychosis can be reduced, for example, by careful monitoring of pregnancy and foetal development, reducing stress during preg-

nancy and inflammatory diseases, offering family interventions that support parenthood, and eradicating negative socio-economic factors, such as bullying at school (14).

The prison term provides an opportunity to examine the person's health history as a whole, without haste and perform diagnostic examinations, including highly demanding ones, in a situation where the intoxicant-free lifestyle of the subject, resulting from prison conditions, supports the interpretation of results. The motivation for adopting health-related content is also often better in prison than in civilian life.

Despite the best efforts, not all people with psychoses will receive treatment in time. To guarantee both the individual's legal protection and the efficient use of resources, it would be important to identify offenders with mental illness as early as possible in the judicial process. Those involved in the pre-trial investigation and court proceedings process could benefit from additional training aimed at the better identification of offenders with mental illness. In addition, the judicial system should be encouraged to consult forensic psychiatry professionals with a lower threshold on topics such as the need for a mental examination. Persons who undergo forensic mental health examination and subsequently end up in prison with full or diminished criminal responsibility also appear to need psychiatric treatment. They could even be referred to as *forensic psychiatric prisoners*, as is done in the [Usage of health services](#) chapter of this report.

Prisoners with psychosis are a particularly vulnerable group of prisoners. Key cornerstones of the treatment of a prisoner with a psychotic disorder include encouraging to commit to medication and other treatment, paying attention to other simultaneous disorders, such as substance use disorder in the person's treatment plan, and ensuring the continuity of treatment also after the end of imprisonment. From the perspective of rehabilitation, key areas include, in addition to treating the illness itself, ensuring that the prisoner receives the benefits they are entitled to, such as disability pension, and taking measures focusing on tackling various factors that contribute to marginalisation, such as substance abuse, pro-crime attitudes, homelessness and unemployment.

According to the Western concept of justice, persons with a mental illness guilty of an offence should not be sentenced to prison, but should instead be offered psychiatric treatment. It is crucial that we adhere to this concept of justice in every way and ensure that prisons do not become inappropriate locations for the placement of people with serious mental illness.

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References

- 1) Gómez-Figueroa, H. and Camino-Proañó, A. 2022: Mental and behavioral disorders in the prison context. *Revista Española de Sanidad Penitenciaria*, 24(2), 66–74. doi: 10.18176/resp.00052.
- 2) Perälä, J., Suvisaari, J., Saarni, S.I., Kuoppasalmi, K., Isometsä, E., Pirkola, S., Partonen, T., Tuulio-Henriksson, A., Hintikka, J., Kieseppä, J., Härkänen, T., Koskinen, S., Lönnqvist, J. 2007: Lifetime prevalence of psychotic and bipolar I disorders in a general population. *Archives of General Psychiatry*, 64, 19–28. doi: 10.1001/archpsyc.64.1.19.
- 3) Joukamaa, M., Aarnio, J., Von Gruenewaldt, V., Hakamäki, S., Hypen, K., Lauerma, H., Wuolijoki, T. 2010: Health, working capacity and need for treatment of criminal sanction clients. Prison and Probation Service. Available at: <https://www.rikosseuraamus.fi>
- 4) Fazel, S., Gulati, G., Linsell, L., Geddes, J., Grann, M. 2009: Schizophrenia and Violence: Systematic Review and Meta-Analysis. *PLoS Medicine*, 6(8), 1–15. doi: 10.1371/journal.pmed.1000120.
- 5) Lamberti, S., Katsetos, V., Jacobowitz, D. & Weisman, R. 2020: Psychosis, mania and criminal recidivism: associations and implications for prevention. *Harvard Review of Psychiatry*, 28, 179–202. doi: 10.1097/HRP.0000000000000251.
- 6) Whiting, D., Gulati, G., Geddes, J. & Fazel, S. 2022: Association of schizophrenia spectrum disorders and violence perpetration in adults and adolescents from 15 countries: a systematic review and meta-analysis. *JAMA Psychiatry*, 79(2), 120–132. doi: 10.1001/jamapsychiatry.2021.3721.
- 7) Hallikainen, T. & Repo-Tiihonen, E. 2015: Managing aggression and violence associated with psychosis. *Lääketieteellinen aikakauskirja Duodecim*, 131(15), 1361–1366. Accessed on 19 May 2023 at: <https://www.duodecimlehti.fi/duo12375>
- 8) Walsh, E., Buchanan, A. & Fahy, T. 2002: Violence and schizophrenia: examining the evidence. *The British Journal of Psychiatry*, 180, 490–495. doi: 10.1192/bjp.180.6.490.
- 9) Jüriloo, A., Pesonen, L. & Lauerma, H. 2017: Knocking on prison's door: a 10-fold rise in the number of psychotic prisoners in Finland during the years 2005–2016. *Nordic Journal of Psychiatry*, 71, 543–548. doi: 10.1080/08039488.2017.1351579.
- 10) Lauerma, H. 2021: Vankeusrangaistuksen keskeyttäminen. In Ahlgrén-Rimpiläinen, A., Elénij, C., Joelsson, P., Kaarre, H., Kolehmainen, M.K., Lappi-Seppälä, T., Lauerma, H., Lauri, M., Melander, S., Niinistö, K., Rautanen, M., Törölä, M. Decrease in forensic psychiatric examinations and the psychiatric treatment of violent offenders. Publications of the Government's analysis, assessment and research activities, No 2021:30, Prime Minister's Office, Helsinki. p. 219–220. Accessed on 15 December 2022 at: <http://urn.fi/URN:ISBN:978-952-383-374-6>.
- 11) Rautanen, M. and Lauerma, H. 2011: Imprisonment and diagnostic delay among male offenders with schizophrenia. *Criminal Behaviour and Mental Health*, 21, 259–264. doi: 10.1002/cbm.820.
- 12) Metzner, J.L. and Fellner, J. 2010: Solitary Confinement and Mental Illness in U.S. Prisons: A Challenge for Medical Ethics. *The Journal of the American Academy of Psychiatry and the Law*, 38(1), 104–108.
- 13) Lappi-Seppälä, T. and Kolehmainen, M.K. 2021: Mielentila ja syyntakeisuus. In Ahlgrén-Rimpiläinen, A., Elénij, C., Joelsson, P., Kaarre, H., Kolehmainen, M.K., Lappi-Seppälä, T., Lauerma, H., Lauri, M., Melander, S., Niinistö, K., Rautanen, M., Törölä, M. Decrease in forensic psychiatric examinations and the psychiatric treatment of violent offenders. Publications of the Government's analysis, assessment and research activities, No 2021:30, Prime Minister's Office, Helsinki. p. 17–117. Accessed on 15 December 2022 at: <http://urn.fi/URN:ISBN:978-952-383-374-6>.
- 14) Penttilä, M., Huhtaniska, S., Jääskeläinen, E. & Granö, N. 2017: Psykoosin ehkäisyn mahdollisuudet. *Lääketieteellinen aikakauskirja Duodecim*, 133(22), 2117–2123. Accessed on 20 May 2023 at: <https://www.duodecimlehti.fi/duo14025>.



Prisoners were found to have poorer oral health than the adult Finnish population, with the exception of the condition of the periodontium.

Prisoners perceived oral health was average or poor more often than the adult Finnish population and they reported several oral problems, such as pain.

Prisoners had a lot of fillings in their teeth. More than half of the participants (54%) were found to have at least one decayed tooth. One third (32%) of prisoners reported that their teeth had been injured due to violence and two out of five (42%) due to an accident.

Any prior experiences of violence and accidents should be taken into account when facing a patient with a criminal background in oral health care. It is important to promote healthy lifestyle to protect teeth and jaw and encourage the regular use of services.

Oral health plays an extensive role in the functional capacity and social quality of life of a person with a criminal background and should be studied further.

Oral health

Introduction

A healthy mouth is an important part of a person's welfare. Oral health has a significant impact on a person's quality of life. The World Dental Federation defines oral health as follows: "Oral health is a multifaceted issue affecting the person's ability to speak, smile, smell, taste, touch, chew, swallow and convey different emotions through facial expressions without pain, discomfort or illnesses in the craniofacial complex" (1).

Poor oral health is assumed to be a risk factor for many other chronic diseases. Oral infections and the outcomes of body's immune reactions can access other parts of the body through blood circulation and have been therefore found to be associated with other diseases. Diseases and conditions such as Alzheimer's disease, diabetes, metabolic syndrome and obesity have been linked to poor oral hygiene and chronic oral infections (2). A bidirectional association has been found between oral health and some diseases. For example, the therapeutic control of periodontitis affects the therapeutic control of diabetes and vice versa (3).

Previous studies have shown that prisoner's oral health is poorer compared to the general adult populations. In a study carried out in the United Kingdom in 2008, prisoners were found to have more decayed teeth than the population. The number of fillings and missing teeth was found to be lower, indicating that prisoners use oral health care services less than the population (4). A study conducted in Italy found that 85

per cent of prisoners had a need for dental prosthetics and that only 11 per cent had healthy periodontium (5).

In Finland, research on the oral health of prisoners is scarce. The results of a study conducted in the Pelso Prison support the view that the prisoners have poorer oral health than the population, but the results represent only one prison. According to the results, most prisoners (81%) had a need for restorative dental care, each examined had gingivitis, nine out of ten were found to have moderate or severe dental erosion, and six out of ten were diagnosed with a temporomandibular disorder (6). The use of oral health care services was irregular in four out of five prisoners in the Pelso Prison (7).

Research questions and research methods

Oral health and health-related behaviour of participated prisoners was examined using a questionnaire, interviews, a clinical oral examination, and radiography.

A questionnaire survey was conducted to examine perceived oral health, the oral health-related quality of life, oral health habits including eating habits, and the use of oral health care services (n=526). This report describes the responses concerning perceived oral health, toothache or other problems related to teeth or dentures during the past year, dental injuries caused by violence and accidents, use of drugs delivered via the mucosa of the mouth, teeth brushing frequency, most recent oral health care visits, barriers to the use of services, and dental fear.

The Oral Health Impact Profile (OHIP-14) was used to measure the oral health-related quality of life, i.e. problems related to teeth, mouth or dentures in the last month. The instrument consists of 14 questions measuring seven dimensions: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap (8). Some prisoners (n=311) also underwent a clinical oral examination and a panoramic dental X-ray (n=232).

The clinical oral examination was carried out using detailed instructions in accordance with previous population studies at the dental clinics of the prisons of Helsinki, Turku, Riihimäki and Hämeenlinna. The clinical oral examination was performed by a dental team comprising a dentist and a nurse. The dentist performed the clinical examination, and the nurse saved the dictated observations in the electronic study database. The instruments used were a dental mirror, a WHO ballpoint periodontal probe, a tweezer, an articulating paper holder for examining the masticatory system, and a letter scale for the calibration of the probing force used in measuring the periodontal pockets. Other equipment used included a 22 mm black articulating paper, cotton wool rolls size 2, mandibular saliva ejector (Hygoformic) and high volume suction.

The clinical examination included assessing occlusion, and the condition and functionality of removable dentures and the oral mucousa (lips, inner surfaces of the mouth and tongue). Gaps due to lost teeth in dental arch and prosthetic structures used to replace them were examined. Occurrence of dental plaque, decayed teeth, fill-

ings and fractures as well as periodontal pocket depths and gingival bleeding was recorded for each tooth. If the participant needed dental care, they were instructed to contact the dental clinic to book an appointment. If the participant was experiencing pain or some other need for acute treatment emerged, an appointment was booked for them. Further treatment was provided at the prison dental clinic.

The dentist referred the participant for a panoramic radiography examination if more than six months had passed since from the most recent panoramic radiography or if imaging was required for treatment reasons. A specialist in oral radiology analyzed the images in accordance with previous Finnish population studies (9). Results for apical periapical lesions and horizontal and vertical bone loss are reported here.

The research data were analysed based on background factors using simple descriptive statistical methods. Age and gender were used as background factors. The other factors used to describe the prisoners' backgrounds in all the sub-studies were also used.

Results

Survey

Of the prisoners, 40 per cent perceived their oral health was at least fairly good (see Table 1). During the previous year, two thirds of the prisoners had experienced pain or discomfort in their mouth or teeth. While a larger proportion of younger prisoners had experienced pain or discomfort compared to the older prisoners, the proportion of those who perceived their oral health at least good was slightly higher in the younger age group than among older prisoners. Slightly more than half of the prisoners (56%) brushed their teeth twice per day, see Table 1. Those who had been in prison for more than two years over their lifetime (61%) brushed more often compared to those who had been in prison for less than two years (47%), Table 2. A larger proportion of those prisoners assessed by the study nurse as able to work perceived their oral health as good or fairly good, brushed their teeth at least twice a day, and a smaller proportion reported pain in their mouth or teeth compared to the group of prisoners with reduced work ability, Table 3.

About one third of the prisoners (32%) reported having had injuries to their teeth due to violence (Table 1). Two in five prisoners (41%) reported their teeth had been injured due to an accident. Men had injured teeth in an accident more often than women. Almost two thirds (60%) of the prisoners reported having used drugs, medications or other substances delivered via the mucosa of the mouth for intoxication purposes. This was much more common among prisoners aged under 47 at one two of three compared to older prisoners, where the corresponding rate was one out of three. Dental injury caused by violence or an accident and the use of drugs, medicines or other substances on mucosa for intoxication purposes was more common in the group of recidivists than in first-time prisoners, Table 2.

Table 1. Perceived oral health and use of oral health care services by gender and age group.

	total	gender		age group (years)		
	n=526	men n=402	women n=124	18–29 n=158	30–47 n=274	47– n=94
Good or fairly good perceived oral health	208 (40%)	156 (39%)	52 (42%)	75 (47%)	97 (36%)	36 (38%)
Pain or discomfort during 12 months	350 (67%)	264 (66%)	86 (69%)	110 (70%)	190 (70%)	50 (54%)
Problems caused by mouth/teeth at least occasionally during the past month	312 (66%)	233 (64%)	79 (70%)	86 (60%)	174 (70%)	52 (63%)
Brushing teeth at least twice a day	293 (56%)	216 (54%)	77 (62%)	90 (57%)	154 (57%)	49 (53%)
Dental damage due to violence	167 (32%)	130 (33%)	37 (31%)	47 (30%)	94 (35%)	26 (29%)
Dental damage due to accident	216 (42%)	176 (45%)	40 (33%)	60 (38%)	119 (45%)	37 (41%)
Drugs etc. delivered via the mucous membranes of the mouth	305 (60%)	240 (62%)	65 (55%)	106 (69%)	170 (64%)	29 (34%)
Time since most recent appointment						
12 months	361 (71%)	278 (71%)	83 (70%)	100 (65%)	195 (73%)	66 (75%)
1–2 years	74 (15%)	56 (14%)	18 (15%)	26 (17%)	41 (15%)	7 (8.0%)
Over 2 years	75 (15%)	57 (15%)	18 (15%)	29 (19%)	31 (12%)	15 (17%)
Previous appointment in the Health Care Services for Prisoners	407 (77%)	323 (80%)	84 (68%)	121 (77%)	219 (80%)	67 (71%)
Toothache as the reason of previous appointment	292 (56%)	219 (54%)	73 (59%)	96 (61%)	162 (59%)	34 (36%)
Long waiting times as a barrier to receiving treatment	180 (36%)	121 (32%)	59 (50%)	58 (38%)	97 (37%)	25 (29%)
Client fees as a barrier to receiving treatment	70 (14%)	50 (13%)	20 (17%)	18 (12%)	32 (12%)	20 (23%)
Fear as a barrier to receiving treatment	186 (37%)	120 (31%)	66 (55%)	46 (30%)	118 (45%)	22 (25%)
Inappropriate treatment as a barrier to receiving treatment	55 (11%)	32 (8.5%)	23 (20%)	14 (9.3%)	32 (12%)	9 (10%)
A dentist's appointment is...						
Not frightening at all	209 (41%)	184 (48%)	25 (21%)	77 (50%)	86 (32%)	46 (53%)
Somewhat frightening	216 (43%)	161 (42%)	55 (46%)	59 (38%)	128 (48%)	29 (34%)
Very frightening	81 (16%)	42 (11%)	39 (33%)	19 (12%)	51 (19%)	11 (13%)

The most common problems related to the mouth, teeth or dentures were related to pain and aches and difficulty eating certain foods, Figure 1. Approximately one third of the prisoners reported at least occasional inconvenience, tension and confusion during the previous month. In the past month, around 20 per cent were sometimes, about seven per cent often, and about six per cent very often dissatisfied with their lives due to problems related to teeth, mouth or dentures.

Table 2. Perceived oral health and use of oral health care services based on first-timer status and the total incapacitation days in prison being more than two years during lifetime.

	first-time offender		total prison days over 2 years	
	no n=321	yes n=205	no n=189	yes n=337
Good or fairly good perceived oral health	116 (36%)	92 (45%)	71 (38%)	137 (41%)
Pain or discomfort during 12 months	216 (68%)	134 (66%)	130 (69%)	220 (66%)
Problems caused by mouth/teeth at least occasionally during the past month	203 (70%)	109 (59%)	114 (67%)	198 (65%)
Brushing teeth at least twice a day	189 (59%)	104 (51%)	89 (47%)	204 (61%)
Dental damage due to violence	117 (37%)	50 (25%)	59 (32%)	108 (33%)
Dental damage due to accident	146 (46%)	70 (35%)	65 (35%)	151 (46%)
Drugs etc. delivered via the mucous membranes of the mouth	204 (66%)	101 (51%)	103 (57%)	202 (63%)
Time since most recent appointment				
12 months	227 (73%)	134 (68%)	116 (63%)	245 (75%)
1–2 years	48 (15%)	26 (13%)	26 (14%)	48 (15%)
Over 2 years	37 (12%)	38 (19%)	41 (22%)	34 (10%)
Previous appointment in the Health Care Services for Prisoners	266 (83%)	141 (69%)	118 (62%)	289 (86%)
Toothache as the reason of previous appointment	188 (59%)	104 (51%)	108 (57%)	184 (55%)
Long waiting times as a barrier to receiving treatment	104 (34%)	76 (39%)	71 (39%)	109 (34%)
Client fees as a barrier to receiving treatment	38 (12%)	32 (16%)	31 (17%)	39 (12%)
Fear as a barrier to receiving treatment	113 (37%)	73 (37%)	77 (42%)	109 (34%)
Inappropriate treatment as a barrier to receiving treatment	35 (12%)	20 (10%)	19 (11%)	36 (11%)
A dentist's appointment is...				
Not frightening at all	128 (41%)	81 (41%)	67 (37%)	142 (44%)
Somewhat frightening	134 (43%)	82 (42%)	75 (41%)	141 (44%)
Very frightening	47 (15%)	34 (17%)	40 (22%)	41 (13%)

Almost three out of four subjects (71%) had received oral health care within the past year, while for four per cent, over five years had passed since their last visit, see Tables 1–3. For around four out of five prisoners, the most recent oral health care visit had been with Health Care Services for Prisoners. The reason for the most recent visit was a tooth ache for more than half the prisoners. The most common obstacles for not using oral health care services were long waiting lists (36%) and fear of dental care (37%).

Table 3. Perceived oral health and use of oral health care services based on assessed work ability and willingness to set health goals in the sentence plan.

	health goal in sentence plan		full work ability	
	no n=203	yes n=300	no n=241	yes n=283
Good or fairly good perceived oral health	87 (43%)	111 (37%)	81 (34%)	125 (44%)
Pain or discomfort during 12 months	138 (68%)	201 (67%)	166 (70%)	183 (65%)
Problems caused by mouth/teeth at least occasionally during the previous month	120 (63%)	187 (68%)	146 (69%)	166 (64%)
Brushing teeth at least twice a day	125 (62%)	153 (51%)	115 (48%)	176 (62%)
Dental damage due to violence	66 (33%)	99 (33%)	87 (38%)	80 (29%)
Dental damage due to accident	87 (43%)	123 (41%)	107 (46%)	109 (39%)
Drugs etc. delivered via the mucous membranes of the mouth	115 (58%)	183 (62%)	142 (63%)	162 (59%)
Time since most recent appointment				
12 months	142 (71%)	208 (70%)	176 (76%)	183 (66%)
1–2 years	29 (14%)	45 (15%)	28 (12%)	46 (17%)
Over 2 years	30 (15%)	44 (15%)	27 (12%)	48 (17%)
Previous appointment in the Health Care Services for Prisoners	155 (76%)	243 (81%)	195 (81%)	210 (74%)
Toothache as the reason of previous appointment	111 (55%)	175 (58%)	135 (56%)	156 (55%)
Long waiting times as a barrier to receiving treatment	72 (36%)	104 (35%)	83 (37%)	96 (35%)
Client fees as a barrier to receiving treatment	18 (9.2%)	49 (17%)	39 (17%)	31 (11%)
Fear as a barrier to receiving treatment	68 (35%)	113 (38%)	84 (37%)	102 (37%)
Inappropriate treatment as a barrier to receiving treatment	21 (11%)	31 (11%)	29 (13%)	26 (9.7%)
A dentist's appointment is...				
Not frightening at all	85 (43%)	118 (40%)	96 (42%)	112 (40%)
Somewhat frightening	82 (41%)	130 (44%)	99 (44%)	116 (42%)
Very frightening	31 (16%)	47 (16%)	32 (14%)	49 (18%)

Around one in ten (11%) reported that experienced inappropriate treatment during an appointment had deterred them from receiving oral health care. Slightly under two out of three were frightened of dentist's appointments, women clearly more often than men, and 30–46-year-olds more often than younger or older prisoners, Table 1.

Clinical oral examination

Most of those examined had full dentition. The median number of teeth was 26 in total and 27 for men and 25 for women, Table 4 and Figure 2. The older prisoners had fewer teeth than the younger ones. There were seven (2%) edentulous prisoners in the

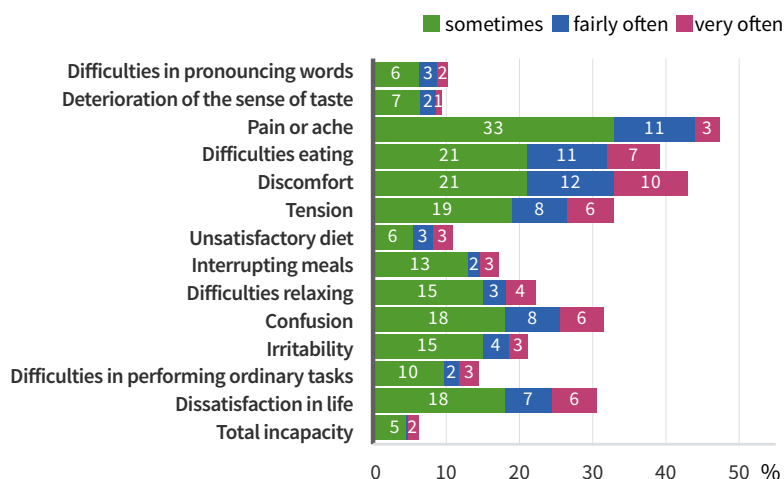


Figure 1. The share of prisoners with problems caused by mouth or teeth (OHIP-14) sometimes, fairly often or very often during the previous month.

study, and they were all over 47 years old. More than half (54%) had at least one decayed tooth and nine out of ten (89%) had fillings.

The number of teeth affected by dental caries is described by the DMF index, which calculates the total number of decayed, missing and filled permanent teeth (range 0–32 including wisdom teeth). The median DMF index was 16, which means that around half (16/32) of the prisoners had missing, decayed or previously filled

Table 4. Number of teeth, condition of teeth and periodontium by gender and age group.

	Total	gender		age group (years)		
	n=309	Men n=224	Women n=85	18–29 n=93	30–47 n=155	47– n=61
Number of teeth	26 (22, 28)	27 (23, 28)	25 (21, 28)	28 (27, 30)	26 (21, 28)	23 (13, 27)
Toothless	7 (2.3%)	5 (2.2%)	2 (2.4%)	0 (0%)	0 (0%)	7 (11%)
Number of decayed, missing or filled teeth (DMFT)	16 (9, 22)	16 (9, 22)	16 (9, 21)	9 (5, 16)	16 (11, 23)	23 (18, 27)
Number of teeth with fillings	6 (3, 9)	6 (3, 10)	5 (2, 8)	4 (2, 6)	6 (3, 9)	9 (3, 14)
At least 1 tooth with a filling	276 (89%)	200 (89%)	76 (89%)	76 (82%)	148 (95%)	52 (85%)
At least 1 tooth with a decay	166 (54%)	123 (55%)	43 (51%)	55 (59%)	86 (55%)	25 (41%)
At least 1 tooth with +4 mm periodontal pocket	109 (35%)	84 (38%)	25 (29%)	21 (23%)	60 (39%)	28 (46%)
At least 1 tooth with +6 mm periodontal pocket	25 (8.1%)	16 (7.1%)	9 (11%)	3 (3.2%)	15 (9.7%)	7 (11%)
% of teeth with dental plaque	35 (31)	37 (32)	31 (27)	33 (30)	33 (31)	44 (33)

Median (quartile range); n (%); mean (standard deviation)

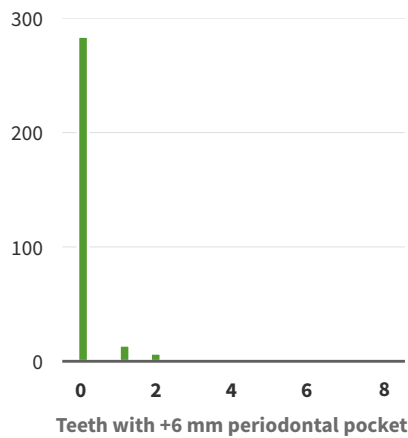
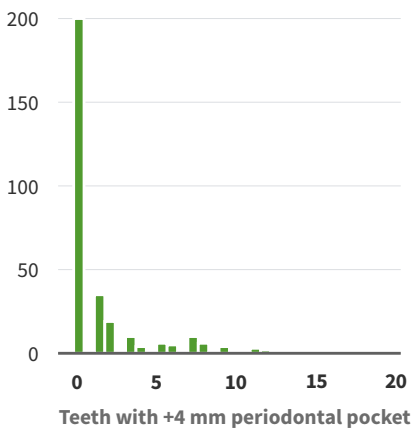
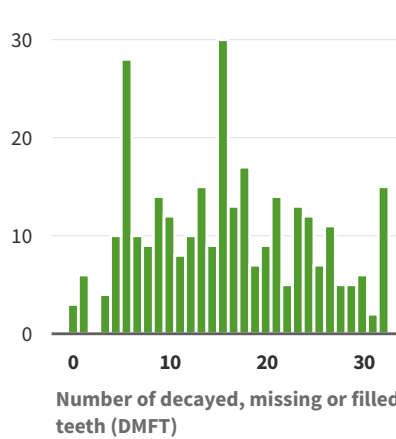
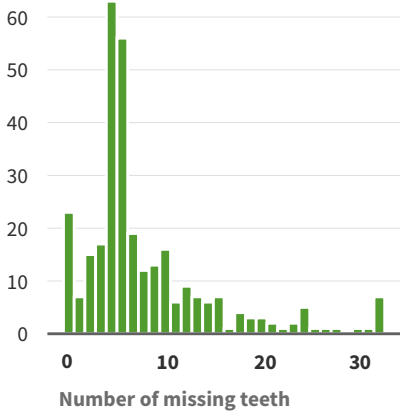
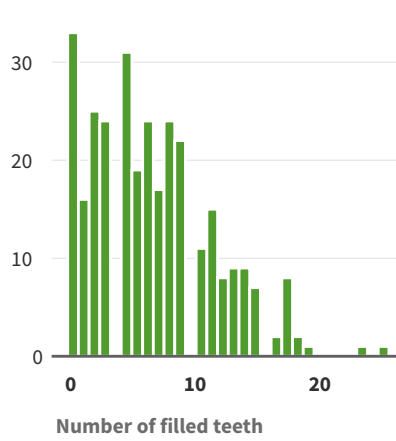
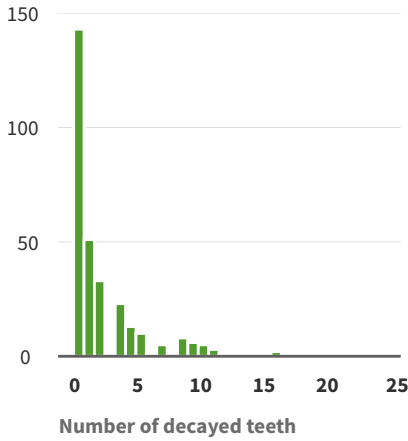


Figure 2. Condition of teeth and periodontium. DMFT refers to the number of decayed, missing or filled teeth. Note the different scales on the vertical axes describing the number of persons.

Table 5. Number of teeth, condition of teeth and periodontium based on first-timer status and the total incapacitation days in prison being more than two years during lifetime.

	first-time offender		total prison days over 2 years	
	no n=183	yes n=126	no n=100	yes n=209
Number of teeth	26 (20, 28)	28 (24, 29)	27 (24, 28)	26 (22, 28)
Toothless	5 (2.7%)	2 (1.6%)	3 (3.0%)	4 (1.9%)
Number of decayed, missing or filled teeth (DMFT)	17 (11, 23)	14 (6, 21)	14 (8, 21)	16 (10, 23)
Number of teeth with fillings	6 (3, 9)	5 (2, 9)	5 (2, 8)	6 (3, 10)
At least 1 tooth with a filling	167 (91%)	109 (87%)	85 (85%)	191 (91%)
At least 1 tooth with a decay	107 (58%)	59 (47%)	57 (57%)	109 (52%)
At least 1 tooth with +4 mm periodontal pocket	73 (40%)	36 (29%)	23 (23%)	86 (41%)
At least 1 tooth with +6 mm periodontal pocket	15 (8.2%)	10 (7.9%)	6 (6.0%)	19 (9.1%)
% of teeth with dental plaque	37 (32)	32 (29)	39 (30)	33 (31)

Median (quartile range); n (%); mean (standard deviation)

Table 6. Number of teeth, condition of teeth and periodontium based on assessed work ability and willingness to set health goals in the sentence plan.

	health goal in sentence plan		full work ability	
	no n=116	yes n=181	no n=150	yes n=158
Number of teeth	27 (23, 28)	26 (22, 28)	27 (22, 28)	27 (22, 28)
Toothless	1 (0.9%)	6 (3.3%)	4 (2.7%)	3 (1.9%)
Number of decayed, missing or filled teeth (DMFT)	14 (9, 19%)	16 (9, 23%)	15 (9, 21%)	16 (10, 23%)
Number of teeth with fillings	6 (3, 9)	6 (3, 10)	5 (2, 8)	6 (3, 11)
At least 1 tooth with a filling	107 (92%)	159 (88%)	133 (89%)	142 (90%)
At least 1 tooth with a decay	68 (59%)	90 (50%)	81 (54%)	84 (53%)
At least 1 tooth with +4 mm periodontal pocket	41 (35%)	62 (34%)	62 (41%)	47 (30%)
At least 1 tooth with +6 mm periodontal pocket	11 (9.5%)	14 (7.7%)	17 (11%)	8 (5.1%)
% of teeth with dental plaque	36 (33)	34 (29)	36 (33)	34 (29)

Median (quartile range); n (%); mean (standard deviation)

teeth. Deepened periodontal pockets illustrating the condition of the periodontium were found in slightly more than one third, more often in older than younger prisoners, see Table 5 and Figure 2. Dental plaque was found in 37 per cent of the teeth in the mouth, i.e. on average, more than one third of the prisoners' teeth had dental bacterial plaque.

First-timers had more teeth and less decayed teeth or deepened periodontal pockets than re-offenders, Table 5. The differences in clinically determined oral health related to work ability assessed by the study nurse were minor, see Table 6.

Based on the panoramic radiographical examination, an apical periodontal lesion was found in close to one in five prisoners (18%), and slightly more than one in four (29%) prisoners had significant bone loss in at least in one tooth.

Conclusions

In this study, the prisoners were found to have poorer oral health than the adult Finnish population, with the exception of the condition of the periodontium. In particular, the prisoners' perceived oral health was poor, and the prisoners had various problems and pain in the oral region. The high number of perceived problems indicate a significant need for treatment, which was also supported by the findings of the clinical examination. Three out of four prisoners had used oral health care services during the past year, which corresponds to the use of oral health care services by the general adult population, despite the fact that the prisoners had usually sought treatment due to symptoms, i.e. because of toothache. Long waiting lists and fear of dental care were particularly perceived as obstacles to making a dentist's appointment.

During the previous 12 months, a considerably larger share of prisoners had experienced oral pain or discomfort compared to the population. Two out of three (68%) prisoners had experienced pain compared to just over one third of the participants in the FinHealth 2017 study (10). The percentage of prisoners who perceived that their oral health was at least fairly good was low (40%) compared to the general population (64%). Problems related to mouth, teeth or dentures were at least twice as common among prisoners as in the adult Finnish population (9). During the previous month, around eight per cent of the population experienced at least occasional dissatisfaction with their lives due to oral or dental problems in 2000 (9), compared with 31 per cent of prisoners.

Three out of four prisoners had used oral health care services during the past year, which corresponds to the use of oral health care services by the adult Finnish population in the FinHealth 2017 study (10). According to the study, 66 per cent of men and 74 per cent of women aged over 30 had used oral health care services in the past 12 months. Similarly, with the general adult population, prisoners felt that the waiting list for dental care (8) was an obstacle to accessing treatment, but fear of dental care was also a significant obstacle to receiving treatment. The percentage of female prisoners brushing their teeth twice a day was 62%, which is clearly less than in the general population (80%). There was no similar difference between male prisoners (54%) and the general adult population (53%).

As expected, the oral health examination revealed that the prisoners had a lot of need for restorative dental care. Approximately one in two prisoners (54%) had decayed tooth, compared to 32 per cent among the adult population in 2011 (11%).

Compared to the same study, the prisoners had fewer teeth with deepened periodontal pockets than the adult population. A periodontal pocket of at minimum four millimetres was found in one in three prisoners (35%) and in nearly two in three members of the adult population (64%). Similarly, periodontal pockets of at least six millimetres were found in 8% of prisoners and 18% of the adult population.

The number of deepened periodontal pockets represents the condition of the periodontium. Based on this study, the condition of the prisoners' periodontium seems rather good. This finding can be considered surprising, as the study conducted in the Pelso Prison (12) found periodontal pockets of more than four millimetres in 41 per cent of prisoners, which is slightly more than in the present study (35%). The low number of deepened periodontal pockets compared to the adult Finnish population could be explained by the large proportion of extracted teeth and the relatively young age of prisoners.

On the other hand, smoking is much more common among prisoners than the general population, as is noted in the chapter Use of tobacco and nicotine products of this report. Although smoking is the main cause of periodontal inflammation, smokers have less bleeding and swelling of the gums due to the effect of constricting the blood vessels, which may partly explain the lower number of deepened periodontal pockets. Differences in findings between the studies can also be explained by differences in measurements.

The DMFT index proved to be at the same level as in the study conducted in the Pelso Prison in the period 2014–2015 (6). In the Health 2011 study carried out among the adult Finnish population, the median DMFT index was 13.7 for men and 13.1 for women aged from 35 to 44. In this study, the DMFT index for 30–47-year-old prisoners was 16. The results indicate that dental caries and the resulting missing and filled teeth are more common among prisoners compared to the adult population. The relatively high DMFT index is explained by the high number of filled teeth, which indicates that people with a criminal background have had at least moderate access to oral health care during their lifetime.

Gender differences were surprisingly minor, and statistically significant differences were found only in relation to perceived oral health, use of services and fear of dental care. A smaller proportion of women than men reported that their teeth had been injured due to an accident and that they had visited a dentist in the Health Care Services for Prisoners. On the other hand, a larger proportion of women than men reported that long waiting lists were an obstacle to receiving treatment and that they had a fear of dental care.

The differences between prisoner groups in oral health and the use of services were surprisingly small and may be largely explained by the different gender and age structures of the groups, which were not taken into account in the current descriptive analyses.

Recommendations for practice and future research

The poor perceived oral health experienced by prisoners, especially the high incidence of pain and dental injuries caused by violence and accidents, affects how oral health care patients with a criminal background coming in for an appointment should be faced in oral health care services. The results of this study suggest that there is a need to routinely address issues such as dental fear and to aim to provide every patient with a respectful care experience as possible. If it is known that the person has a background related to offending, the high probability of traumatic injuries should be taken into account when examining the person's oral health. Encouraging regular use of services and holistic care is important in this group.

There is a need for more in-depth analysis to investigate topics such as the differences between prisoner groups and the impacts of substance use on oral health. The surprising finding concerning the prisoners' lower need for periodontal care should also be investigated in a more closely targeted study.

The Oral Health Impact Profile (OHIP-14) instrument used in the study has now produced basic results on the oral health-related quality of life experienced by prisoners. Comparing these data with the data collected from other population groups using the OHIP-14 instrument allows monitoring of the impacts of services in this area. It is therefore recommended to include the OHIP-14 instrument in routine data collection.

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References

- 1) Glick, M, Williams, D.M., Kleinman, D.,V., Vujicic, M., Watt, R.,G., Weyant, R.,J. 2017: A new definition for oral health developed by the FDI World Dental Federation opens the door to a universal definition of oral health. *Am J Orthod Dentofacial Orthop.* 2017;151:229–231.
- 2) Kapila, Y.,L. 2021: Oral health's inextricable connection to systemic health: Special populations bring to bear multimodal relationships and factors connecting periodontal disease to systemic diseases and conditions. *Periodontol 2000.* 2021;87:11-16.
- 3) Baeza, M., Morales, A., Cisterna, C., Cavalla, F., Jara, G., Isamitt, Y., Pino, P., Gamonal, J. 2020: Effect of periodontal treatment in patients with periodontitis and diabetes: systematic review and meta-analysis. *J Appl Oral Sci.* 2020;28:e20190248.
- 4) Heidari, E., Dickinson, C., Fiske, J. 2008: An investigation into the oral health status of male prisoners in the UK. *Journal of Disability and Oral Health* 2008;9:3–12.
- 5) Nobile, C.G., Fortunato, L., Pavia, M., Angelillo, I.F. 2007: Oral health status of male prisoners in Italy. *Int Dent J.* 2007;57:27–35.
- 6) Vainionpää, R. 2019: Oral health of Finnish prisoners. Doctoral dissertation. University of Oulu.
- 7) Vainionpää, R., Pesonen, P., Laitala, M.L., Pohjola, V., Anttonen, V. 2019: Dental Fear and Dental Health and Attendance among Finnish Male Prisoners. *J Oral Maxillofac Res.* 2019;10:e4.
- 8) Slade, G.D., Spencer, A.J. 1994: Development and evaluation of the Oral Health Impact Profile. *Community Dent Health.* 1994;11:3–11.
- 9) Suominen-Taipale, L., Nordblad, A., Vehkalahti, M., Aromaa, A. (toim.) 2004: Suomalaisten aikuisten suunterveys. Health 2000 survey. Publications of the National Public Health Institute B16/2004.
- 10) Koponen, P., Borodulin, K., Lundqvist, A., Sääksjärvi, K., Koskinen, S. (eds.) 2018: Health, functional capacity and welfare in Finland - FinHealth 2017 study. Report 4/2018. Finnish Institute for Health and Welfare.
- 11) Suominen, A.L., Varsio, S., Helminen, S., Nordblad, A., Lahti, S., Knuutila, M. 2018: Dental and periodontal health in Finnish adults in 2000 and 2011. *Acta Odontol Scand.* 2018;76:305–313.
- 12) Vainionpää, R., Peltokangas, A., Leinonen, J., Pesonen, P., Laitala, M.L., Anttonen, V. 2017: Oral health and oral health-related habits of Finnish prisoners. *BDJ Open.* 2017;3:17006.



Of the prisoners, 44 per cent had a hepatitis C infection and 13 per cent had a chronic infection.

One per cent had an HIV infection.

In prison, 34 per cent had used drugs by injecting. Two out of three of them had shared syringes and needles.

Of those using drugs by injecting, 49 per cent had started injecting in prison due to fitness doping and 10 per cent due to using narcotics.

Of inmates diagnosed with hepatitis C and sentenced to less than two years, nine per cent had received hepatitis C treatment.

Infectious diseases

Introduction

Infectious diseases are caused by various microbes, such as viruses and bacteria. They can be transmitted from one person to another, for example by direct contact or airborne transmission, or by an object such as a used syringe or needle. Infectious diseases can be prevented by means such as raising awareness of infection methods, vaccinations, treating infected persons and ensuring that the equipment used is clean.

Infectious diseases are common in prisons, and prison conditions have been found to expose people to infectious diseases if the measures taken to prevent harm are insufficient. Prisoners have been shown to have more HIV, hepatitis, tuberculosis infections, and sexually transmitted diseases than the population on average. Their risk of infection is also higher (1, 2, 3). Prisoners have been identified as a key group for bloodborne diseases in Finland's [HIV](#) and [Hepatitis C](#) strategies.

The previous Wattu III study published in 2010 showed that prisoners have a considerable number of both mental health disorders and somatic diseases, the most significant of which was hepatitis C (4). The prevalence of hepatitis C was 46 per cent. Of prisoners, 59 per cent engaged in narcotics use by injection, and 37 per cent of them used shared syringes (5).

Hepatitis C is an inflammation of the liver caused by HCV. The hepatitis C virus is easily transmitted through contact with blood, for example through sharing injec-

tion equipment. Sexually transmitted infections and passing an infection from mother to child during childbirth are also possible but less common transmission routes (6). Most infections are diagnosed in those who use drugs by injecting. Approximately 20–30 per cent of those infected with hepatitis C spontaneously recover within six months of infection, while 70–80 per cent develop a chronic infection (6). A fifth of those with a chronic infection develop cirrhosis of the liver within approximately 20 years and are also at risk of developing liver cancer. There is no vaccine against hepatitis C. Chronic hepatitis C can be treated with oral medication.

HIV is a chronic infection caused by the human immunodeficiency virus. HIV is transmitted through unprotected sex, in contact with infected blood and from mother to child. There is no cure for HIV infection. However, medical treatment can effectively prevent the spread of the virus and its progression to AIDS. The prognosis of the life expectancy of a person infected with HIV does not differ significantly from the prognosis of the rest of the population if the infection is diagnosed early and treatment is started on time. Infections can be prevented by using clean injection equipment. A condom protects against sexually transmitted infections. There is no vaccine against HIV.

Hepatitis B is a viral liver infection transmitted through unprotected sex, through contact with blood and from mother to child before or during the birth. Acute hepatitis B usually heals spontaneously. Chronic disease cannot be cured. Hepatitis A is a viral inflammation of the liver transmitted mainly through contaminated water or food. The virus can also be transmitted through the sharing of injection equipment. Hepatitis A usually heals spontaneously. A vaccine protects against hepatitis A and B.

In order to prevent HIV and hepatitis C, B and A infections in the context of drug and doping agent use by injection as well as tattoos and piercings, it is important to ensure the use of clean equipment.

Research questions and methods

Data was collected through an interview with the research nurse, laboratory examinations, a survey, and an anonymous questionnaire. Respondents were asked about their sexual behaviour, the use of drugs and fitness doping and risk factors. Also was asked taking tattoos, testing HIV, B and C hepatitis as well as having treatment for HIV and C hepatitis and having vaccinations for influenza, B hepatitis and coronavirus. An anonymous questionnaire was used to collect information on the experiences of the available measures to combat infectious diseases, the use of drugs and fitness doping and related risk factors, and the treatment of hepatitis C.

The laboratory examinations included testing made on blood samples. The prevalence of infectious diseases was evaluated by a combined examination on HIV antibodies and antigens (HIVAg/Ab), hepatitis C antibodies (HCVAb), hepatitis A antibodies (HAV-Abtot) and HAVAbM examinations and hepatitis C nucleic acid (HCVNhO)

and Hepatitis B surface antigen (HBsAg) examinations. The positive cases found in the combined study on HIV were confirmed by immunoblotting.

Studies on liver and kidney function were also conducted. A hepatitis C infection exposes the patient to cirrhosis of the liver and cancer and increases the risk of kidney diseases. Liver and kidney function was evaluated by the enzyme concentrations of alanine aminotransferase (ALAT), aspartate aminotransferase (ASAT) and gamma-glutamyl transferase (GGT) and creatinine assay. The probability of liver fibrosis or cirrhosis was estimated by calculating the ASAT and thrombocyte ratio (APR) per gender (i.e., the APR index). The results were analysed by cross-tabulation, Pearson's chi-squared test and ANOVA.

Results

Prevalence of HIV and hepatitis

In laboratory tests, one per cent of both female and male prisoners were diagnosed with HIV infection. Of the prisoners, 44 per cent had hepatitis A antibodies, which indicates that the person has had the illness or has been vaccinated against it. The share was higher among men (46%) than women (34%).

The prevalence and chronic carrier status of hepatitis C antibodies were more common among women than men. For women, the prevalence of antibodies was 53 per cent and 22 per cent were carriers. Among men, the prevalence of antibodies was 40 per cent and 10 per cent were carriers. The prevalence of hepatitis C antibodies was highest (53%) among people aged 30–47. The share of carriers was highest (38%) among those aged 30–47 and under 30 (36%).

The share of those testing positive for hepatitis B antigen indicates a chronic or acute hepatitis B infection. The share was low: 0.4 per cent in men, with no infections found in women, Table 1.

Table 1. Proportion of positive results of HIV, hepatitis A, B and C assays and total numbers of tested male and female prisoners.

Study	men		women	
	n	Positive responses (%)	n	Positive responses (%)
HIV antibodies	285	1	98	1
Hepatitis A antibodies	171	46	44	34
Hepatitis C antibodies	284	40	97	53
Hepatitis C nucleic acid	284	10	97	22
Hepatitis B S-antigen	283	0.4	98	0

Table 2. Treatment of prisoners with a hepatitis C infection by the length of sentence, number and share of respondents to the question, and the total number of respondents.

Length of sentence	Treated and cured		Treatment planned or ongoing		I don't know		No treatment		Total
	n	%	n	%	n	%	n	%	n
2 years or less	11	9	29	25	14	12	65	55	119
over 2 years	50	54	25	27	2	2	15	16	92
total	61	29	54	26	16	8	80	38	211



Figure 1. Treatment of prisoners with a hepatitis C infection (%) by length of sentence. The prisoners serving an over two-year sentence are on the left and those with shorter sentences are on the right.

Treatment of hepatitis C

Based on the questionnaire responses, 38 per cent of prisoners infected with hepatitis C reportedly had not received treatment for their infection or were unable to say whether they had received treatment. The majority (81%) of prisoners who had not received treatment were sentenced to less than two years. Only nine per cent of them had received treatment, whereas the corresponding share among those serving a sentence of more than two years was significantly higher (54%), Table 2 and Figure 1.

Use of fitness doping and drugs by injecting, shared use of injection equipment, and tattooing and piercing

A significant proportion had used injectable drugs (55%) or fitness doping agents (34%) outside or inside the prison. In prison, 34 per cent of the prisoners had used injectable drugs and 20 per cent of prisoners fitness doping agents by injecting. However, in the 30 days preceding the study, the use was considerably lower outside and inside the prison: 1.4 per cent had used drugs and 0.2 per cent doping agents by injecting. Nearly half (49%) of those who injected fitness doping agents had started injecting in prison. The share was lower among those who injected drugs (10%), Table 3.

The majority (66%) of those using drugs by injecting reported using the same syringe or needle that another person had already used in prison. The corresponding

share among those using doping agents by injecting was 17 per cent. Regarding the shared use of other injection equipment, such as a filter, medicine cups, and water, the corresponding numbers were 55% and 3%, Table 3. A smaller proportion (34%) of respondents filling out the anonymous questionnaire than in the interviews by the study nurse reported having shared a syringe or needle with another person in injecting doping agents or drugs. The portion of those reporting the shared use of other injection equipment was also lower (30%) in the anonymous questionnaire than in the interview.

According to self-reports, four out of five respondents using drugs by injecting had used their own needles and syringes in prison more than once. The correspond-

Table 3. The use of injected fitness doping agents and drugs as well as getting tattoos and piercings in prison. The number and share of users/tattooed/pierced in relation to the total number of respondents to the question.

	men		women		men and women
	n	positive responses (%)	n	positive responses (%)	positive responses (%)
Narcotics					
Use by injecting inside or outside the prison in the last 30 days	392	0.3	122	5	1.4
Use by injecting inside or outside the prison over 30 days ago	392	52	122	61	55
Use by injecting in prison	205	38	80	25	34
Started use by injecting in prison	77	10	20	10	10
Shared use of syringes and needles in prison	78	71	20	50	67
Shared use of other injection equipment in prison	78	56	20	50	56
Has used their own syringe or needle several times in prison	78	79	20	85	81
Fitness doping					
Use by injecting inside or outside the prison in the last 30 days	391	0.3	122	0	0.2
Use by injecting inside or outside the prison over 30 days ago	391	43	122	33	34
Use by injecting in prison	171	20	5	0	20
Started use by injecting in prison	37	49	0	0	49
Shared use of syringes and needles in prison	37	16	0	0	17
Shared use of other injection equipment in prison	37	3	0	0	3
Has used their own syringe or needle several times in prison	37	62	0	0	62
Tattoos					
Have you got a tattoo or a piercing in prison	398	39	122	11	32

Table 4. The number and share of those tested for and infected with HIV and hepatitis C in relation to the total number of respondents to the question in male and female prisoners and their total share.

	men		women		men and women
	n	positive responses (%)	n	positive responses (%)	positive responses (%)
Tested for HIV in the previous 12 months	392	32	122	37	33
Diagnosed with HIV	294	1	102	2	1
Tested for hepatitis C in the previous 12 months	390	38	122	49	41
Diagnosed with hepatitis C	303	44	108	56	47
Tested for hepatitis B in the previous 12 months	392	17	122	19	17

Table 5. Based on self-reporting, the number of prisoners vaccinated against hepatitis B and who consider vaccines effective and safe and in proportion to the total number of respondents in male and female prisoners.

	men		women	
	n	%	n	%
Have you ever been vaccinated against hepatitis B	262	60	59/91	65
Vaccines administered in our country are efficient and safe	361	83	93/114	82

Table 6. Availability of disinfectants, condoms and HIV/HCV testing in prisons. Number of anonymous yes responses in relation to all respondents. Anonymous questionnaire.

	n	positive responses (%)
Disinfectants for cleaning dirty syringes and needles are available in prisons	370	4
Using disinfectants in prisons is easy or fairly easy	190	4
Condoms are available in prisons	370	19
Condoms are easily or fairly easily available in prison	296	13
Getting tested for HIV in prison is easy or fairly easy	372	56
Getting tested for hepatitis C in prison is easy or fairly easy	372	63
Tested for HIV at least once in prison	372	58
Tested for hepatitis C at least once in prison	372	61

ing share among those using doping agents by injecting was 62 per cent. You can read more about this topic in the [Use of doping agents](#) chapter of this report. Of the prisoners, 32 per cent had got a tattoo or piercing in prison, Table 3.

Prevalence of HIV and hepatitis C based on personal notification

Based on the questionnaire responses, 33 per cent of prisoners reported that they had been tested for HIV, 41 per cent had been tested for hepatitis C and 17 for hepatitis B during the previous 12 months. One per cent reported being HIV positive and 47 per cent infected with hepatitis C, Table 4.

Hepatitis B vaccinations and an assessment of vaccine safety based on personal notification

Of the prisoners, 61 per cent reported having been vaccinated against hepatitis B (the proportion of those who had received the full vaccination series is not known). Of the prisoners, 82 per cent felt that the vaccines administered in Finland were effective and safe, Table 5.

Availability of disinfectants, condoms and HIV and hepatitis C testing

Most of the prisons did not offer disinfectants for cleaning needles and syringes. Only four per cent of those who responded to the anonymous questionnaire reported that cleaning agents were available in their prison. In addition, the use of disinfectants was found difficult. Only four per cent felt that they were easy or fairly easy to use.

The availability of condoms was also considered poor. Nineteen per cent of the respondents reported condoms available in prison. Of the respondents, 13 per cent reported that condoms were easily or fairly easily available to them.

Approximately half of the prisoners (56%) felt that it was easy or fairly easy to get tested for HIV. The corresponding share of being able to access a hepatitis C test was slightly higher at 63 per cent. More than half of the inmates reported having been tested for HIV or hepatitis C at least once in prison, accounting for 58% and 61% respectively, Table 6.

Conclusions

HIV and hepatitis C infections are considerably more common among prisoners than in the general population on average. The prevalence of HIV among prisoners was one per cent, which is approximately ten times higher than in the general population (7). Among prisoners, the prevalence of hepatitis C antibodies was 44 per cent and for those with a chronic disease, 13 per cent. In prisoners, the prevalence of hepatitis C antibodies is tens of times higher than among the general population (8).

Compared to the previous prisoner study Wattu III published 2010, there have been no significant changes in the prevalence of HIV and hepatitis (5). A significant

proportion of prisoners have, at some point, used drugs (34%) or fitness doping agents (20%) in prison. Of those injecting drugs in prison, more than two out of three (67%) had used the same syringe and/or needle previously used by another person; the corresponding share of those injecting doping agents was three per cent. Reusing one's own equipment in prison was also common: this had been done by 81 per cent of those using drugs and 62 per cent of those using doping agents by injecting. The shared use of syringes and needles and the reuse of personal equipment expose prisoners to bacterial and viral infections.

Most of the prisons do not offer disinfectants for cleaning needles and syringes. Only four per cent of the prisoners reported that they received disinfectants for cleaning dirty syringes and needles, and only four per cent felt that using these was easy or fairly easy. However, from the perspective of preventing infectious diseases, ensuring the use of clean needles and syringes instead of disinfection is the safest alternative (9).

According to the national recommendation, prisoners sentenced to less than a year who do not show any signs of liver damage will only receive treatment for hepatitis C in primary health care after their release (8). The reason for this has been that it could be challenging to carry out examinations, treatment and monitoring as a whole during the prison term if the sentence is short.

According to this study, only nine per cent of prisoners who were carriers of hepatitis C and had a sentence of less than two years had received hepatitis treatment. The corresponding share was considerably higher among those serving longer sentences (54%). Since the treatment cycle for hepatitis C is short at 8 to 12 weeks and it is simple to implement, there are no obstacles in principle to the treatment of those serving a shorter sentence.

Of the prisoners, 46 per cent tested positive for hepatitis A antibodies either as a result of having had the disease or been vaccinated against it. The proportion of men testing positive for hepatitis C antibodies had remained nearly the same and the proportion of women had decreased compared to the Wattu III study. Of the prisoners, 61 per cent reported that they had been vaccinated against hepatitis B. The majority of prisoners (82%) considered vaccines effective and safe. Indeed, it is important that vaccinations are carried out comprehensively in prisons to prevent the spread of infections.

Getting tested for HIV in prison was easy or fairly easy according to one in two prisoners, and the share of those who had been tested in prison at least once was 58 per cent. The corresponding rates for hepatitis C were 63 per cent and 61 per cent, respectively. As the risk of bloodborne diseases in prisons has increased due to the higher prevalence of diseases than in the general population and by the shared use of needles and syringes, regular testing should be offered to prisoners at risk of infection every three months. The threshold for offering, accessing and requesting testing must be low.

Recommendations for practice and future research

Prison conditions have been found to expose prisoners to infectious diseases if harm reduction measures are insufficient. The proposed measures aim at improving the health of prisoners and limiting the risk of the spread of infectious diseases in prisons.

The prevalence of HIV and chronic hepatitis C infections is significantly higher in prisons than in the population on average, and sharing injection equipment occurs in prisons, resulting in an increase in the risk of the spread of bloodborne infections. However, prisoners' health can be promoted by reducing the risk of infection and providing treatment and vaccinations. It is important to provide prison staff and prisoners with training on bloodborne diseases and how they spread. Raising awareness helps avoid risky behaviour and promotes safe practices.

Safe injection equipment reduces the risk of infection. It is worrying that most prisons no longer provide access to disinfectants for cleaning used syringes and needles. It is important to restore the availability of disinfectants in prisons and to instruct prisoners on how to clean needles and syringes and make the use of disinfectants as easy as possible. However, the safest option would be to enable prisoners to replace their used injection equipment with sterile ones in prison. Opportunities for this should be investigated.

Regular testing for bloodborne diseases makes it possible to identify infections early and to start treatment. To prevent the spread of HIV and hepatitis C, testing for these diseases should be part of the arrival check performed on all prisoners. Absence from the test would require actively refusing to be tested. Prisoners should also be offered and receive testing during their prison term on a low threshold. It is worth considering introducing rapid tests for hepatitis C in addition to rapid HIV tests at prison outpatient clinics.

The treatment of infectious diseases as early as possible reduces morbidity and mortality related to infections as well as further infections. Prisoners serving less than two years' sentence account for the majority of untreated hepatitis C cases. Prison conditions provide a good environment for implementing care, which should be utilised efficiently. Any obstacles to treatment should be investigated and resolved.

Offering vaccinations can protect the health of prisoners. Some prisoners lacked protection against hepatitis A and a vaccine against hepatitis B. Prisons should inform prisoners of the usefulness of vaccinations, offer vaccinations actively and ensure compliance with the recommendations of the national vaccination programme. There are good preconditions for this, as prisoners primarily regard vaccinations with trust.

In summary, the health of prisoners, the burden caused by infectious diseases and the spread of infections in prisons can be prevented by various means: training prison staff and prisoners, providing vaccinations, testing, ensuring the availability of clean injection equipment and condoms, and treating infections. Prisons should increase and improve the effectiveness and coverage of these measures proven effective and regularly assess them.

Finally, it should be emphasized that the care and treatment of all inmates, including short-term offenders, is of vital importance, as it will impact two significant groups of the population. On the one hand, this will benefit the health of inmates and the safety of prisons. On the other hand, following their release, the disease burden of these individuals would decrease, contributing to a reduction in the prevalence of infectious diseases at a broader population level and, therefore, fostering common health security.

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References

- 1) Dolan, K., Wirtz, A.L., Moazen, B., Ndeffo-Mbah, M., Galvani, A., Kinner, S.A., et al. 2016: Global burden of HIV, viral hepatitis, and tuberculosis in prisoners and detainees. *Lancet*. 2016;388(10049):1089–102.
- 2) Kamarulzaman, A., Reid, S.E., Schwitters, A., Wiessing, L., El-Bassel, N., Dolan, K., et al. 2016: Prevention of transmission of HIV, hepatitis B virus, hepatitis C virus, and tuberculosis in prisoners. *Lancet*. 2016;388(10049):1115–26.
- 3) Rich, J.D., Beckwith, C.G., Macmadu, A., Marshall, B.D.L., Brinkley-Rubinstein, L., Amon, J.J., et al. 2016: Clinical care of incarcerated people with HIV, viral hepatitis, or tuberculosis. *Lancet*. 2016;388(10049):1103–14.
- 4) Joukamaa, M., Aarnio, V., von Gruenewaldt, V., Hakamäki, S., Hypen, K., Lauerma, H., et al. 2010: Health, working capacity and need for treatment of criminal sanction clients. *RISE*. 2010;1. Available online at: www.rikosseuraamus.fi
- 5) Viitanen, P., Vartiainen, H., Aarnio, J., von Gruenewaldt, V., Hakamäki, S., Lintonen, T., et al. 2011: Hepatitis A, B, C and HIV infections among Finnish female prisoners-young females a risk group. *J Infect*. 2011;62(1):59–66.
- 6) Lappalainen M, Färkkilä M. Hepatiitti C (HCV). In: *Mikrobiologia*. Kustannus Oy Duodecim, 2010.
- 7) European Centre for Disease Prevention and Control. Continuum of HIV care. Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2021 progress report. Stockholm: ECDC; 2022.
- 8) Finnish Institute for Health and Welfare. C-hepatiitin hoitopolku. THL. Ohjausarja, 2019. <https://urn.fi/URN:ISBN:978-952-343-324-3>.
- 9) United Nations Office on Drugs and Crime. HIV prevention, testing, treatment, care and support in prisons and other closed settings: a comprehensive package of interventions. UNODC. Technical brief, 2020 update.





The rate of daily smokers among prisoners is 69% (64% of male prisoners and 85% of female prisoners).

The use of nicotine products, such as snus, was also substantially more common than in the general population on average.

In particular, male prisoners were willing to stop smoking and also reasonably confident that they would be able to do so.

The majority of prisoners who smoke had not received support for giving up smoking during their prison term.

Prisoners were exposed to tobacco smoke, especially in the cells in closed prisons.

The goal of Finland's Tobacco Act is that less than five per cent of the population will use tobacco and nicotine products daily in 2030. In light of the results obtained in this study, the prison population is very far from this objective.

Use of tobacco and nicotine products

Introduction

Smoking is one of the major factors causing premature mortality and morbidity (1), and exposure to tobacco smoke is a significant health risk (2). Smoking also causes health disparities between population groups. The prison population is a special group in a vulnerable position related to health.

In the previous Wattu III study on the health of Finnish prisoners, the prevalence of smoking was 82% among men, 90% among women, and 80% in total (3). At the beginning of the data collection in 2006, the prevalence of daily smoking in the working-aged population (20–64 years old) was 24 per cent among men and 18 per cent among women (4). Daily smoking has decreased among the general adult population in 2022. Twelve per cent of men and 11 per cent of women smoked (5). No new data on smoking among prisoners has been available since Wattu III.

The use of tobacco and nicotine products and exposure to tobacco smoke have a significant impact on health. Giving up smoking brings health benefits (6), and the willingness to quit and a sense of being capable to quit smoking are important factors in successful smoking cessation. No data on these factors has been previously available on the Finnish prison population. Previous studies have also not examined the use of snus, electronic cigarettes (e-cigarettes), and nicotine replacement therapy (NRT) by prisoners or support for giving up smoking.

The provisions on smoking in the Imprisonment Act and the Remand Imprisonment Act were amended in the autumn of 2023. Smoking was prohibited in the indoor spaces of prisons, but prisoners and remand prisoners were given an opportunity to smoke outdoors at least once a day. In addition, prisoners and remand prisoners have the right to receive support for smoking cessation. Information on the prevalence of the use of tobacco and nicotine products, smoking cessation, and exposure to tobacco smoke is needed in the assessment of the implementation of changes in the provisions on smoking, and to promote non-smoking as well as health more generally among prisoners.

Research questions and research methods

The purpose of the sub-study was to report descriptive results on the use of tobacco and nicotine products among prisoners, the willingness and sense of capability to quit smoking, and the provision of support for smoking cessation. The study also examined the exposure to tobacco smoke among prisoners.

The research questions were as follows: 1) How common is the use of tobacco and nicotine products among prisoners? 2) How willing are prisoners to stop smoking and how confident do they feel about their capability to stop? 3) How common is it that prisoners have been offered support for smoking cessation during their prison term? and 4) How common is exposure to environmental tobacco smoke for prisoners in prison?

Frequency distributions and cross-tabulations were used to report the data, and Pearson's chi-squared test was used to statistically examine differences between groups.

Prisoners were asked about their smoking status as follows: "Do you currently smoke (cigarettes, cigars or pipe)?" The response options were "Yes, daily", "Yes, occasionally", "I have quit" and "I have never smoked". The proportion of daily smokers describes the proportion of the respondents who had responded "Yes, daily" and the proportion of current smokers describes those who responded either "Yes, daily" or "Yes, occasionally" for the question. The number of cigarettes smoked per day by prisoners who smoke daily was measured by the question: "How many cigarettes do you smoke on average during a day?" The response alternatives were "I do not smoke", "1-10 cigarettes", "11-20 cigarettes", "21-30 cigarettes" and "over 30 cigarettes". The respondents were asked about their snus use with the question "Do you currently use snus" and their use of nicotine-containing e-cigarettes with the question "Do you currently use electronic cigarettes that contain nicotine?" The response alternatives were the same as for smoking ("daily", "occasionally", "I have quit", "I have never used") and the daily and current use was categorised similarly as with smoking. A sum variable was formed based on the questions on smoking, the use of snus and e-cigarettes, describing the use of one or more tobacco and nicotine products.

The respondents were asked about their use of NRT products with the question "Have you ever used nicotine replacement therapy products (e.g., nicotine gum, patch-

es, lozenges, sublingual tablet, inhaler or spray)?” The response options were “No”, “Yes, in support of smoking cessation” and “Yes, for some other reason, please specify”.

The respondents’ willingness to quit smoking was measured by asking “How willing would you be to quit smoking permanently? Please rate on a scale of 1 to 10.” A rating of 1 meant that the respondent was completely unwilling to quit smoking and a rating of 10 that the respondent was highly willing to quit smoking. Respondents were also asked about their capability to quit smoking as follows: “If you tried to quit smoking, how confident are you about your capability to permanently quit smoking? Please rate on a scale of 1 to 10.” A rating of 1 meant that the respondent had no confidence in their capability to quit smoking and a rating of 10 that the respondent was highly confident in their capability to quit. The willingness to quit smoking and confidence in one’s capability to quit were reported for daily smokers. The respondents were asked about the support offered to them for smoking cessation as follows: “During your prison term, have you ever been offered support for quitting smoking?” The response options were “No” and “Yes”.

The respondents were asked about their exposure to tobacco smoke with the question “Are you exposed daily to the tobacco smoke of others in your prison?” You may choose one or more options”. The response options were “Yes, in the cell”, “Yes, elsewhere in the indoor areas of prison”, “Yes, in the prison’s outdoor areas” and “No”. All yes answers were combined to describe the prisoner’s exposure to tobacco smoke in prison, either indoors or outdoors.

The background factors used in this examination were the same variables as in other sub-studies, such as age, gender, and educational background, as well as health-related factors, estimated work ability, the length of the prison term, and the principal offence. Where applicable, the data on the prison population was compared with the most recent data available on the general adult population. For the data on smoking, the use of snus and the use of e-cigarettes, the comparison year was 2022, and for the other variables, the most recent other available data was used.

Results

Among prisoners, 69 per cent smoked daily. A larger proportion of female prisoners (85%) compared to male prisoners (64%) smoked daily (Figure 1). When considering occasional smoking, 76 per cent of prisoners currently smoked (72% of men and 88% of women). Of the male respondents, 22% had quit smoking, while the corresponding rate among women was 8%. Six per cent of men and four per cent of women reported that they had never smoked. Of the daily smokers, 37% reported that they smoked 1–10 cigarettes, 43% 11–20 cigarettes, and 20% more than 20 cigarettes per day, on average. None of the daily smoking prisoners reported smoking more than 30 cigarettes per day.

Daily smoking was associated with the respondent’s age and level of education. Daily smoking was the most common among respondents aged under 30 years (75%) and

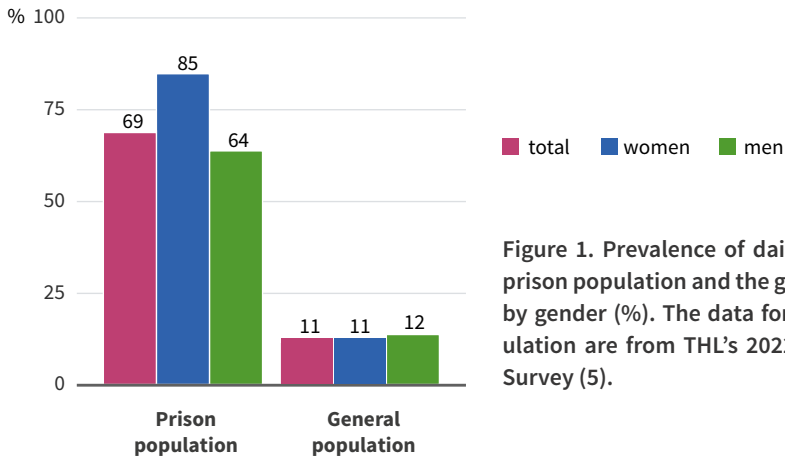


Figure 1. Prevalence of daily smoking in the prison population and the general population by gender (%). The data for the general population are from THL’s 2022 Healthy Finland Survey (5).

somewhat less common among respondents aged 47 or over (60%). For respondents aged 30–46, the prevalence of daily smoking was 70%. Of those who had completed at most basic education, 80% smoked daily, whereas the corresponding share was 57% among those who had completed education or training beyond basic education.

Daily smoking was more common among the prisoners imprisoned in closed prisons (72%) than in open prisons (56%) at the time of responding. Daily smoking was less common among respondents whose nurse-assessed work ability was normal (65%) than in a group with reduced work ability (75%). The length of the current sentence was associated with the prevalence of smoking: the proportion of daily smokers was 59% among those imprisoned for more than two years and 80% among those with a shorter sentence.

Seven per cent of prisoners used snus every day. The use of snus was more likely among men, of whom 9% used it daily. No female prisoners reported daily use of snus. About one out of three male prisoners (30%) and 8% of women were current users of snus. About 1% per cent of prisoners used e-cigarettes with nicotine daily. The use of e-cigarettes was equally common among men and women. Current use of e-cigarettes was substantially more common than daily use. Nine per cent of men and 13% of women currently used e-cigarettes that contain nicotine.

One out of five male (20%) and one out of ten female (12%) respondents were exposed to tobacco smoke in their cells. The exposure occurred in closed prisons. Respondents under the age of 30 were more likely to be exposed to tobacco smoke in their cells (23%) than those aged 30–46 (17%) and those aged 47 or over (13%). At the time of the survey, indoor exposure to tobacco smoke elsewhere than in the cells was more common among prisoners in closed prisons than those in open prisons. However, exposure to environmental tobacco smoke in the cells was clearly more common: 95 prisoners were exposed in their cell while 29 prisoners elsewhere.

On a scale of 1 to 10, the average rate of willingness to quit smoking was 7.2 among prisoners with daily smoking. Willingness to quit was higher among men (7.5) than women (6.2). Men were also slightly more confident than women of their capability to

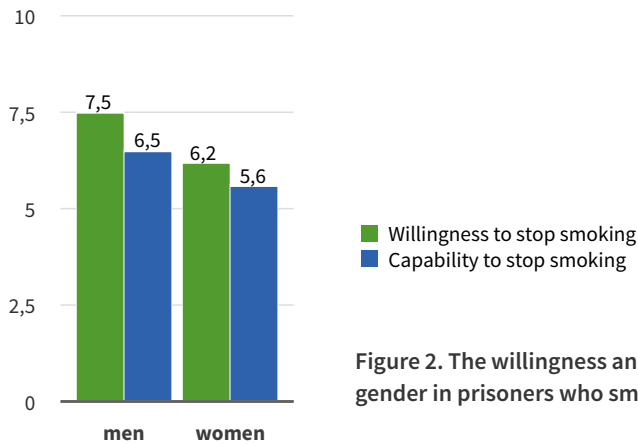


Figure 2. The willingness and ability to stop smoking by gender in prisoners who smoke daily.

stop smoking if they wanted to (Figure 2). On a scale of 1 to 10, the average rate was 6.5 for men and 5.6 for women. Most of the prisoners who had ever smoked (75%) had not been offered support for smoking cessation during their prison term. This proportion was 72 per cent among men and 85 per cent among women.

A third of all female respondents (33%) reported using NRT in support of their smoking cessation, while less than half of male respondents reported using NRT in support of smoking cessation (48%). A third of women (33%) and 22% of men reported using NRT for some other reason.

Conclusions

The use of tobacco and nicotine products was very common in the prison population: 85% of female prisoners and 64% of male prisoners smoked daily. Only a small share of prisoners had never smoked. Daily smoking was more than six times more common among prisoners compared to the general adult population aged 20–64 years (4). The results indicate that prisoners also used snus and e-cigarettes, but the difference in the prevalence of the daily use of these products compared to the total population average was not as considerable as with smoking (5). In addition, prisoners were substantially more likely to be exposed to tobacco smoke than the general population, on average (7).

A survey and meta-analysis focusing on the population in Western European prisons is consistent with the results of the current study on the prevalence of smoking (8). However, the results differ when it comes to gender differences – on average, the prevalence of smoking among men was 83%, and among women was 44%, with a total prevalence of 72% (8). Our results show that smoking is exceptionally common among female prisoners in Finland, both in relation to male prisoners and the entire population. On one hand, in the previous prisoner survey, the prevalence of smoking among prisoners was higher (3), which means that the decline in smoking observed

in the Finnish general population has also been reflected in prisoners. On the other hand, this significant decrease seems to be focused on male prisoners, whereas in female prisoners, the change remains relatively small compared to the previous situation. Along with the working-age population, prisoners may have stopped smoking more frequently (9), but no research is available on this topic. Due to changes in the prison population and the different research designs between Wattu III and Wattu IV, the results between these two studies are not directly comparable.

The daily use of snus was slightly more common among male prisoners than among male population aged 20–64 (5). Meanwhile, occasional use of snus was common among male prisoners and also common among female prisoners. Similar results were found for nicotine-containing e-cigarettes. The use of e-cigarettes and snus is prohibited on safety grounds in prisons, which may contribute to explaining the observed differences in daily versus current use. The results indicate that the use of snus and e-cigarettes in prisons is likely to be lower than during holidays or leaves from prison, for instance.

Based on the results, a similar association between daily smoking and education is found in the prison population as in the general population: smoking is more common among those with a lower level of education than those with a higher level of education (10). The prevalence of smoking also varied according to the respondent's age and was most common among prisoners under the age of 30 years. Among the general adult population, smoking is more common among older age groups, whereas the use of other tobacco products is more common in the younger age groups (4). Support measures for smoking cessation should also reach young prisoners with a low level of education. While the support received from health care professionals for quitting the use of tobacco and nicotine products is essential, promising results have also been obtained in peer-support activities for smoking cessation among prisoners in the United States, for example (11). A similar evidence-based practice could be tested in Finnish prisons.

The willingness to quit smoking was high among the prison population. This corresponds to the observation that majority of the general population who smoke daily wishes to stop smoking (4). Gender differences between were observed in the willingness and capability to quit smoking. Men were more willing and able to stop smoking. Based on several indicators related to smoking, female prisoners appeared to be in a more vulnerable position than male prisoners. The use of NRT to support the cessation of smoking was common among prisoners.

It seems that prisoners want to receive support for smoking cessation. Personal motivation plays a significant role in the success of smoking cessation. Pharmaceutical support alone is not as effective as pharmaceutical support combined with counselling (12). A significant finding was that the majority of prisoners had not received support for smoking cessation during their prison term. Of the prisoners who smoked daily, one in five smoked at least one pack of cigarettes per day and just under half at least half a pack. Based on these results, it is likely that many prisoners have medium or high nicotine dependence. In supporting smoking cessation efforts, the level of nicotine dependence and individual needs of prisoners should be taken into account.

The use of NRT was also common for reasons other than in support of quitting smoking. Prisoners may use snus, e-cigarettes and NRT in situations where smoking is not possible. This could imply that restricting smoking could lead to an increase in the use of other nicotine products. The new provisions on smoking in prisons entered into force in September 2023. To best support smoking cessation, prisoners should be directed to cessation services where the aim is to stop using tobacco and nicotine products altogether, not to maintain nicotine dependence.

Recommendations for practice and future research

Very little information is available on the use of tobacco and nicotine products and smoking cessation among Finnish prisoners. In the future, the information produced in this report should be advanced, for example, by studying the associations between the use of tobacco and nicotine products, different demographic, health-related and behavioural factors and the factors related to smoking cessation. Regular data collection on the use of tobacco and nicotine products by prisoners is important to monitor the development in this area and to plan and enact necessary measures to promote the health of prisoners. The goal of Finland's Tobacco Act is that less than five per cent of the population will use tobacco and nicotine products daily in 2030. In light of the results obtained in this study, the prison population is very far from this objective.

To support the cessation of tobacco and nicotine products among prisoners, Health Care Services for Prisoners and the Prison and Probation Service should have a clear service pathway for bringing up tobacco and nicotine use, carrying out brief intervention, promoting structural collection of tobacco use-related patient data from medical records as well as providing effective treatment and subsequent monitoring. Support measures should be available both in closed prisons and in open prisons. These measures should include group counselling and individual counselling combined with short-acting and/or long-acting NRT or other medical treatment when necessary.

As a result of the legislative amendment related to smoking, closed prisons now allow smoking only in outdoor areas while support for smoking cessation is provided. It is essential to monitor how the changes affect smoking in the prison population. The aim is to increase health and decrease the observed differences between population groups in smoking prevalence.

As a result of the new provisions, open prisons and closed prisons will be different environments in terms of smoking. The time and place of smoking are regulated more strictly in closed prisons than in open prisons, and as a result, the available support for smoking cessation should be adapted to suit these external circumstances. To ensure that any desired positive changes achieved in smoking cessation in closed prisons will also continue afterwards in open prisons and after the release from prison, it is important to use a uniform practice independent of the prisoner's placement institution.

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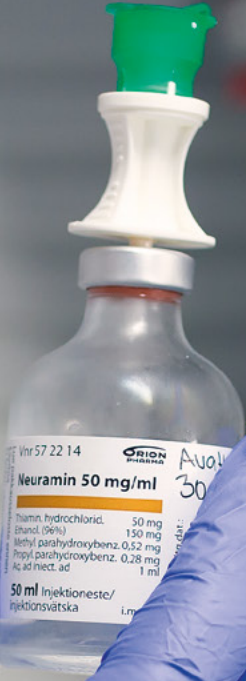
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References

- 1) U.S. Department of Health and Human Services (USDHHS). The health consequences of smoking – 50 years of progress. A report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
- 2) Jaakkola, M.S. ja Jaakkola, J.K. 2012: Adverse health effects of passive smoking. *Duodecim* 2012;128:1097–1106.
- 3) Joukamaa M. ja työryhmä 2010: Health, working capacity and need for treatment of criminal sanction clients. Report on basic results. Publications by the Criminal Sanctions Agency 1/2010. Criminal Sanctions Agency, University of Tampere, Pirkanmaa Hospital District, 2010. Available at: www.rikosseuraamus.fi
- 4) Koskinen, H. and Virtanen, S. 2022: Tobacco statistics 2021: Students in higher education smoke less, but use more snus. Statistical report 40. Helsinki. Finnish Institute for Health and Welfare, 2022.
- 5) Finnish Institute for Health and Welfare. Indicator tables for the Healthy Finland survey section. Use of tobacco and nicotine products. Available at: https://repo.thl.fi/sites/terveysuomi/kyselyosuus_2022/index.html#p%C3%A4ihitteet-ja-toiminnalliset-riippuvuudet (last accessed on 2 August 2023)
- 6) Duncan, M.S., Freiberg, M.S., Greevey Jr, R.A., Kundu, S., Vasan, R.S., Tindle, H.A. 2019: Association of smoking cessation with subsequent risk of cardiovascular disease. *JAMA* 2019;322:642–650.
- 7) Heloma, A., Ruokolainen, O., Ollila, H. 2018: Smoking. In Koponen, P., Borodulin, K., Lundqvist, A., Sääksjärvi, K., Koskinen, S. (eds.) 2018: Health, Performance and Well-being in Finland: The FinHealth2017 study Report 4/2018. Helsinki: Finnish Institute for Health and Welfare, 27–29.
- 8) Alok, D.S. ja Kabir, Z. 2022: Tobacco Use Among People Incarcerated in Western Europe: A Systematic Review and Meta-analysis. *Tob Use Insights* 2022;15:1179173X221096641. doi:10.1177/1179173X221096641
- 9) Ruokolainen, O., Piirtola, M., Korhonen, T., Rahkonen, O., Härkänen, T. A nationally representative study of the hardening hypothesis among educational groups over four decades. *Nicotine & Tob Res.* 2023 Apr 19;ntad057. doi:10.1093/ntr/ntad057
- 10) Ruokolainen, O., Heloma, A., Jousilahti, P., Lahti, J., Pentala-Nikulainen, O., Rahkonen, O., et al. 2019: Thirty-eight-year trends of educational differences in smoking in Finland. *Int J Public Health.* 2019 Jul 1;64(6):853–60.
- 11) Garver-Apgar, C.E., Morris, C.M., Pavlik, J., Lenartz, T., Hamm, M. 2023: Peer-Facilitated Tobacco Cessation in a Prison Setting: A Proof of Concept Study. *Tob Use Insights.* 2023 Oct 1;16:1179173X231168511.
- 12) Livingstone-Banks, J., Lindson, N., Hartmann-Boyce, J., Aveyard, P. 2022: Effects of interventions to combat tobacco addiction: Cochrane update of 2019 and 2020 reviews. *Addiction.* 2022;117(6):1573–8





Vir 57 22 14
ORION
Neuramin 50 mg/ml
30
Thiamin hydrochlorid, 50 mg
Etanol (96%), 150 mg
Methyl parahydroxybenz, 0.52 mg
Propyl parahydroxybenz, 0.28 mg
Ac. ad. inect. ad. 1 ml
50 ml Injektioneste/
injektionsvätska

Substance use disorders (SUD) are very common among prisoners. In this study, 87 per cent of prisoners were diagnosed with a lifetime SUD. Compared to the previous prisoner study, the prevalence of SUD has slightly increased.

Alcohol use disorder was more prevalent in older age groups, whereas drug use disorder was more common in the younger groups.

Approximately half of the prisoners reported amphetamine use during the 12 months before their prison term. Compared to the previous prison study, cocaine use has increased significantly.

More half of the prisoners reported intravenous drug use during their lifetime, one in five also during their imprisonment.

Approximately 40% of prisoners reported opioid use during the 12 months before their prison term. Of those with lifetime opioid use disorder, 40% reported receiving opioid substitution treatment at some point of their lives. Only 7% of those who reported opioid use during the 12 months before their prison term had started opioid agonist treatment during their imprisonment.

Substance use and substance use disorders

Introduction

Substance use, substance use disorders (SUD) and related somatic, psychological and social problems are common in the prison population (1, 2). Harmful substance use often continues after release from prison increasing the likelihood of recidivism (3). Substance use problems are also associated with a worse prognosis in the prison population. For example, the risk of premature death after release from prison is elevated for prisoners with both alcohol and drug use disorders, regardless of different background factors (4, 5).

In Swedish register data, one in three of the deaths of male prisoners and one in two of the deaths of female prisoners were related to a SUD (4). In a Norwegian prison follow-up study, eight per cent of the cohort died during the follow-up period. Most of the deaths were due to external causes, such as overdose or suicide (6). On the other hand, substance use treatment aimed at prisoners has been found to be effective. For example, the treatment of SUDs seems to reduce the risk of death after release from prison (7, 8) as well as recidivism (8).

Observations made in the previous prisoner health study (Wattu III), carried out in the period 2005–2007 and published in 2010, are in line with the previous research literature. In the Finnish prison population, SUD rates were ten times higher than in the general population (9).

In the present study, 84 per cent of prisoners were found to have a lifetime SUD, and 17 per cent of the participants were estimated to have a current SUD. SUDs were particularly common among younger prisoners. The most common SUD during lifetime was alcohol use disorder, which was found in 66 per cent of the research subjects, while 11 per cent had a current alcohol use disorder. The next most common SUD was amphetamine use disorder (48% during lifetime, 6% currently). The corresponding figures were 27 per cent and four per cent for opioid use disorder and 27 per cent and three per cent for sedative use disorder. Substance use problems were more common among default prisoners compared to the rest of the prison population.

A time series examination revealed that the quality of SUDs among prisoners had clearly changed compared to the 1980s and 1990s – drug use disorder and polysubstance disorder have significantly increased among prisoners during the follow-up period of around 20 years. SUDs were the most common factor reducing work ability (73%). When assessing the need for treatment, SUDs were the most important diagnosis group, and the need for treatment of SUDs was estimated to be higher compared to other psychiatric disorders. Of the health-related harms associated with substance use, hepatitis C was particularly common (9).

Changes in the substance use culture and the care system create a need for a more comprehensive assessment of intoxicant use and disorders among prisoners. In previous prisoner health studies, the questions on substance use have focused on alcohol. Even the previous Wattu III study found that an increasing number of prisoners had problems related to drug use and polysubstance use involving prescription drug abuse and other substances, while there appeared to be a decline in the problematic use of alcohol alone. A similar trend has been observed in both time series follow-up of the clients of substance use services (10) and in substance use incidence rate calculations (11). The share of those with problematic use of opioids has particularly increased in the 2010s (10, 12).

Research questions and research methods

The research questions of this sub-study were related to the lifetime and current prevalence of SUDs and self-reported substance use, and types of substances used.

Utilization of substance use treatment services before imprisonment was also examined. In particular, the need for and implementation of opioid substitution treatment was examined.

The study used the Structured Clinical Interview for DSM-IV (SCID) (n=295) to examine the occurrence of psychiatric disorders, such as SUDs, during the person's lifetime and the 30 days preceding the interview. It should be noted that diagnoses related to substance use are not actually set based solely on the SCID interview, as the diagnosis requires further information on health and an assessment by a physician. However, the SCID method provides sufficient uniform data for the purposes of comparative research. More info can be found in [Appendix 2](#).

The questionnaire data (n=526) was used to collect information on intravenous drug use, and utilization of substance use treatment services including opioid agonist treatment (OAT). An interview conducted as a part of health examinations (n=527) was used to assess substance use as well as prescription medication abuse during the prisoners' lifetime and 12 months before imprisonment. The research subjects were also asked their primary substance of abuse in the 12 months preceding their current period of imprisonment.

The results were reported as frequency distributions and cross-tabulations, and statistical significance was examined using Pearson's chi-squared test.

Results

Lifetime substance use disorders

Of the prisoners, 87 per cent met the DSM-IV criteria for any lifetime SUD (88% of men and 82% of women). A lifetime SUD was more common among young prisoners aged under 30 years (90%) and those between the ages of 30 and 47 years (90%) compared to prisoners over the age of 47 years (70%) ($p=0.002$). While lifetime alcohol use disorder (AUD) was more common among male prisoners than female prisoners, no statistical difference was observed in drug use disorders (DUD) (75% of men vs 70% of women).

DUD was more common among those aged under 30 years (84%) than prisoners aged from 30 to 47 years (76%) or over 47 years (45%) ($p<0.001$). DUD was less common among first-time prisoners (64%) compared to those who had been imprisoned more than once (80%) ($p=0.002$). No differences were found in the prevalence of lifetime DUD based on offence type or length of imprisonment, as shown in Table 1.

The most common lifetime SUDs in men were alcohol use disorder (72%), amphetamine use disorder (51%) and cannabis use disorder (48%), Figure 1. Amphet-

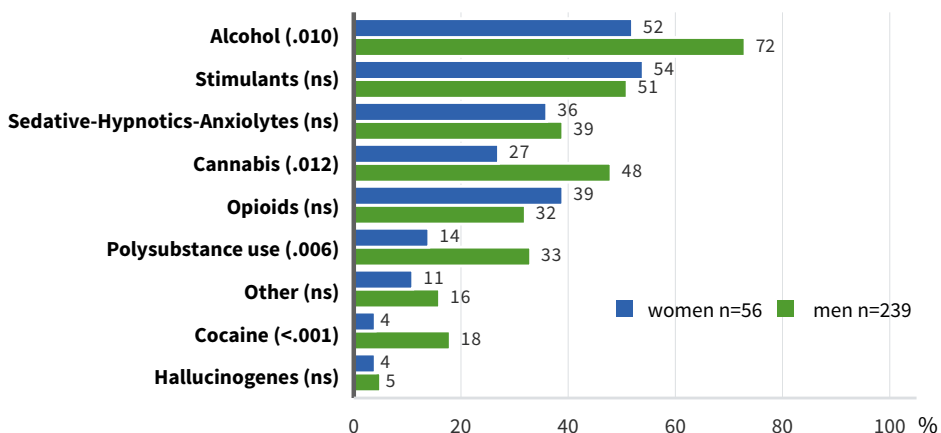


Figure 1. Lifetime prevalence of substance use disorders by gender (%).

Table 1. Lifetime prevalence of substance use disorders by gender and background variables.

	total n=295	any substance use disorder n=257 (87%)		alcohol use disorder n=202 (68%)		drug use disorder n=218 (74%)	
	n	n	%	n	%	n	%
gender							
male	239	211	88	173	72*	179	75
female	56	46	82	29	52*	39	70
age							
18–30 years	89	80	90*	58	65	75	84***
30–47 years	162	146	90*	118	73	123	76***
≥ 47 years	44	31	70*	26	59	20	45***
first-time offender							
yes	117	95	81	79	68	75	64*
no	178	162	91	123	69	143	80*
Principal offence group							
violence	174	157	90	128	74	129	73
property	22	18	82	12	55	17	77
drug	65	54	83	37	57	47	72
other	34	28	82	25	73	25	73
imprisonment for over 2 years							
yes	203	178	88	142	70	152	75
no	92	79	86	60	65	66	72

* chi-squared test p<0.05

*** chi-squared test p<0.001

amine use disorder (54%), alcohol use disorder (52%) and opioid use disorder (39%) were the most common SUDs among women. Polysubstance use disorder was more common among men (33%) than women (14%). A lifetime cocaine use disorder was observed in about one fifth of men (18%), while cocaine use disorder in women (4%) was rare (p<0.001).

Alcohol

In all, 68 per cent of prisoners were diagnosed with a lifetime alcohol use disorder (AUD). A lifetime AUD was more common among men (72%) than women (52%) (p=0.003), see Table 1 and Figure 1. AUD was more common among prisoners whose current sentence was more than two years long (73%) compared to those serving a shorter sentence (61%) (p=0.042). Of those with violent offences, 74 per cent had a lifetime AUD, and the corresponding rates were 57 per cent among those with drug offences and 55 per cent of those with theft and property crime, Table 1.

Self-reported lifetime alcohol use occurred in 99 per cent of men and 97 per cent of women (p=0.038). Figure 2. In all, 79 per cent of male prisoners and 70 per cent of women reported having used alcohol in the 12 months preceding their imprisonment, Figure 3.

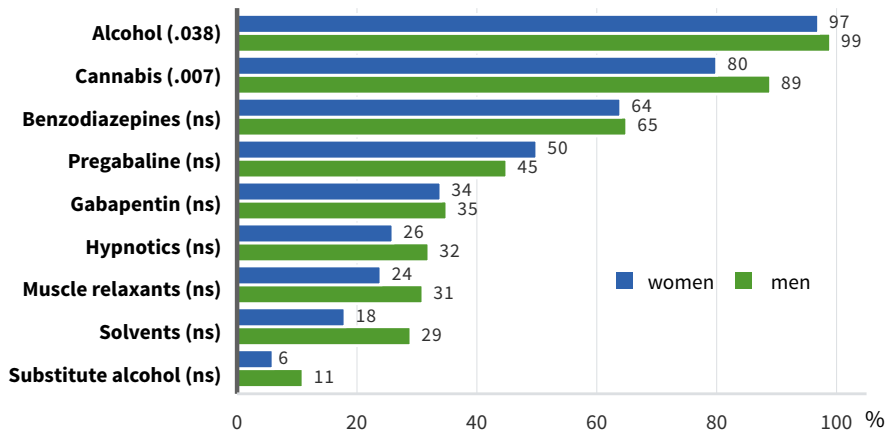


Figure 2. Self-reported lifetime prevalence of the use of alcohol, cannabis, benzodiazepine, pregabalin, gabapentin, hypnotics, muscle relaxants, solvents and substitute alcohol by gender (%).

The participants reported initiation of alcohol on average at the age of 13.1 years (median 13 years, range 3 to 39 years). Men (12.9 years) had started using alcohol at a slightly younger age than women (13.6%) ($p=0.041$). Participants aged 30–47 years reported initiation of alcohol use at younger age (12.9 years) compared to prisoners aged under 30 (13.1 years) and over 47 years (13.8 years) ($p=0.049$). All prisoners aged under 30 years, and almost all prisoners aged over 47 years (96%) reported alcohol use during their lives ($p=0.014$).

Of participants, 38 per cent named alcohol as their primary substance abused. Alcohol as a primary substance abused was more common among prisoners over 47

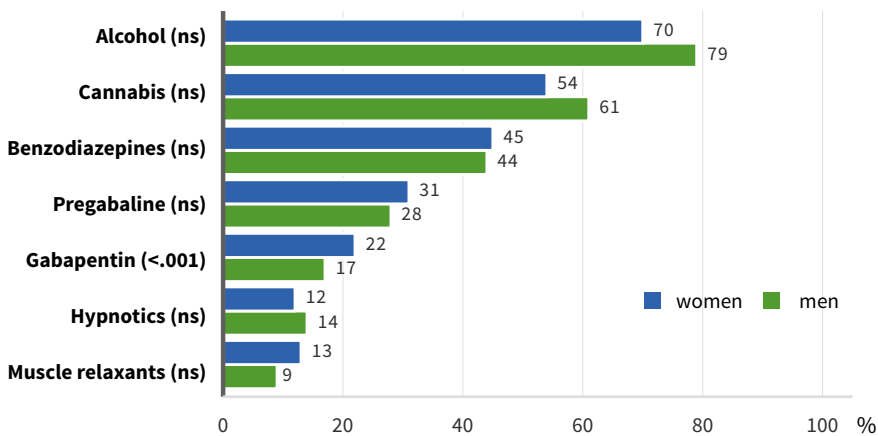


Figure 3. Self-reported prevalence of alcohol, cannabis, benzodiazepine, pregabalin, gabapentin, hypnotics and muscle relaxants 12 months before imprisonment (%) in proportion to total population $n=527$.

years of age (64%) compared to those aged under 30 (33%) and between 30 and 47 (33%).

A total of 11 per cent of male prisoners and six per cent of female prisoners reported having used substitute alcohol during their lifetime, see Figure 2. Compared to alcohol use, use of substitute alcohol commenced at older age, on average at the age of 24 years.

Benzodiazepines and hypnotics

Lifetime sedative use disorder was found in 38 per cent of the prisoners. Sedative use disorder was more common among those aged under 30 years (47%) compared to prisoners aged from 30 to 47 (38%) or over 47 years (20%) ($p<0.023$).

A total of 65 per cent of prisoners reported having used benzodiazepines for intoxication purposes during their lifetime, distributions by sex are shown in Figure 2. During the 12 months preceding current imprisonment, 44 per cent of prisoners reported intoxicant use of benzodiazepines; the sex distributions are shown in Figure 3. Only two per cent of prisoners named benzodiazepines as their primary substance of abuse.

Young prisoners under the age of 30 years had used benzodiazepines at some point in their lives more often (79%) compared to prisoners over the age of 47 years (34%) ($p<0.001$), and also more often during the year preceding the imprisonment compared to the other age groups. Benzodiazepine abuse commenced on average at the age of 18.7 years (median 18 years, range 7 to 60 years). Prisoners under the age of 30 years reported initiation of benzodiazepine abuse at a younger age (17.9 years) than those aged between 30 and 47 years (18.7 years) and prisoners over 47 years (22.7 years) ($p<0.001$).

Lifetime use of hypnotics for intoxication was reported by 31 per cent of prisoners, see Figure 2. During the 12 months preceding the imprisonment, 13 per cent of those who participated in the study had used hypnotics for intoxication, see Figure 3. Hypnotics abuse was the most common among prisoners aged 30-47 (36%). 30 per cent of under 30-year-old and 17 per cent of over 47-year-old prisoners reported having used hypnotics for intoxication purposes ($p=0.008$), see Figure 10. Hypnotics abuse commenced on average at the age of 18.8 years (median 18 years, range 11 to 53 years). Men initiated hypnotics abuse at younger age (18.3 years) than women (20.7 years) ($p=0.029$). Prisoners under the age of 30 years initiated hypnotics abuse at a younger age (17.6 years) than prisoners aged between 30 and 47 years (18.2 years) and over 47 years (25.6 years) ($p<0.001$).

Other medications of abuse

Gabapentinoid abuse was common among prisoners. Lifetime use of pregabalin for intoxication purposes was reported by 46 per cent, and gabapentin abuse by 35 per cent of prisoners in proportion to the total research population ($n=527$). Pregabalin abuse in the 12 months before the imprisonment was reported by 28 per cent of men

and 31 per cent of women. The corresponding rates for gabapentin abuse were 17 per cent for men and 22 per cent for women, respectively. Although gabapentinoid abuse was common, only one per cent of all prisoners named them as their primary substance of abuse, Figure 2 and Figure 3.

Older prisoners aged over 47 years reported less gabapentinoid abuse compared to younger prisoners. Lifetime use of pregabalin abuse was reported by 63 per cent of those aged under 30 years, 48 per cent of those aged between 30 and 47 years, and 14 per cent of those aged over 47 years ($p < 0.001$). The corresponding shares for lifetime gabapentin abuse were 47 per cent, 36 per cent, and 9 per cent, respectively ($p < 0.001$), Figure 10.

The average initiation age for gabapentinoid abuse was 24 years for both pregabalin and gabapentin. Prisoners under the age of 30 had started gabapentinoid abuse at younger age compared to the other age groups. From the youngest to the oldest in terms of age groups, pregabalin abuse commenced at age 18.9, 26.3, and 39.6 years ($p < 0.001$); respective figures for gabapentin abuse were 20.2, 26.5, and 40.2 years ($p < 0.001$).

Lifetime muscle relaxant abuse was reported by 29 per cent of the prisoners. The prevalence of the muscle relaxant abuse was 10 per cent during the 12 months preceding imprisonment.

Prisoners under the age of 30 years and between the ages of 30 and 47 years reported muscle relaxant abuse considerably more often than prisoners older than 47 years. From the youngest to the oldest in terms of age groups, the prevalences for muscle relaxant abuse were 38 per cent; 30 per cent and 9 per cent ($p < 0.001$). On average, muscle relaxant abuse commenced at the age of 21.1 years (median 20 years, range 9 to 47 years). Prisoners younger than 30 years initiated muscle relaxant abuse earlier compared to other age groups. From the youngest to the oldest in terms of age groups, muscle relaxant abuse commenced at age of 18.5 years, 22.4 years and 28.4 years, respectively ($p < 0.001$).

Cannabis

In all, 44 per cent of prisoners were diagnosed with a lifetime cannabis use disorder. A lifetime cannabis use disorder was more common in male (48%) than in female prisoners (27%) ($p = 0.012$), see Figure 1. The majority of prisoners (87%) reported cannabis use during their lifetime, and lifetime use was also more common among men (89%) than women (80%) ($p = 0.007$), see Figure 2. Self-reported lifetime use of cannabis was more common among the younger prisoners (93%) and those aged 30–47 years (91%) than in prisoners over 47 years (64%) ($p < 0.001$).

Of the total study cohort, 59 per cent of the prisoners reported having used cannabis during the 12 months before their imprisonment, see Figure 3. One in ten prisoners named cannabis as their primary substance of abuse, 11 per cent of men and seven per cent of women. Of the prisoners under the age of 30, 15 per cent named cannabis as their primary substance of abuse, whereas cannabis was less common as the prima-

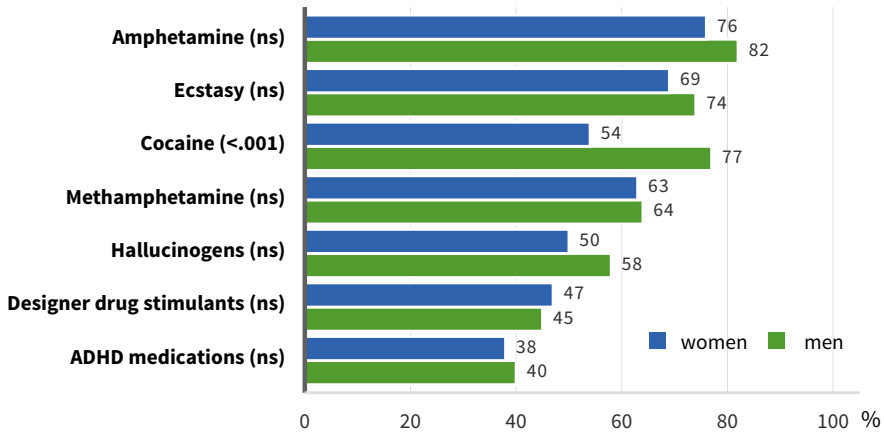


Figure 4. Self-reported lifetime prevalence of the use of stimulants and hallucinogens by gender (%).

ry substance of abuse in the older age groups, amounting to eight per cent in the age group of 30–47-year-olds and six per cent in those aged over 47.

In average, cannabis use commenced at age of 16.3 years (median 15 years, ranging from 6 to 60 years). Men had started using cannabis at a slightly younger age (16.1 years) than women (17.3 years) ($p=0.046$). Young prisoners initiated cannabis use at a younger age than others. From the youngest to the oldest age group, the cannabis use commenced at age of 14.9 years, 16 years and 21.3 years, respectively ($p<0.001$).

Stimulants

Lifetime amphetamine use disorder was diagnosed in 52 per cent of prisoners, Figure 1. Of the prisoners, 81 per cent had used amphetamines during their lifetime. In all, 64 per cent of prisoners reported lifetime use of methamphetamine, as shown in Figure 4.

Of the prisoners, 59 per cent of men and 60 per cent of women reported using amphetamines 12 months before their imprisonment. A total of 40 per cent of the prisoners had used methamphetamine 12 months before their imprisonment. Use of novel psychoactive stimulants, such as alpha-PVP or MDPV before the prison term, was reported by 21 per cent of the study participants, see Figure 5.

Amphetamine use during the 12 months prior to imprisonment was more common among prisoners aged under 30 years (82%) than those aged from 30 to 47 years (70%) or over 47 years (66%) ($p<0.001$). Similarly, methamphetamine use prior to imprisonment was more common among prisoners aged under 30 (68%) and those aged from 30 to 47 (57%) than prisoners aged over 47 (55%) ($p<0.001$), see Figure 10. The average age for initiating amphetamine use was 18.8 years (median 18 years, range from 8 to 55 years).

Of the prisoners, 30 per cent, 28 per cent of men and 34 per cent of women, had named some amphetamine group stimulant as their primary substance of abuse. Am-

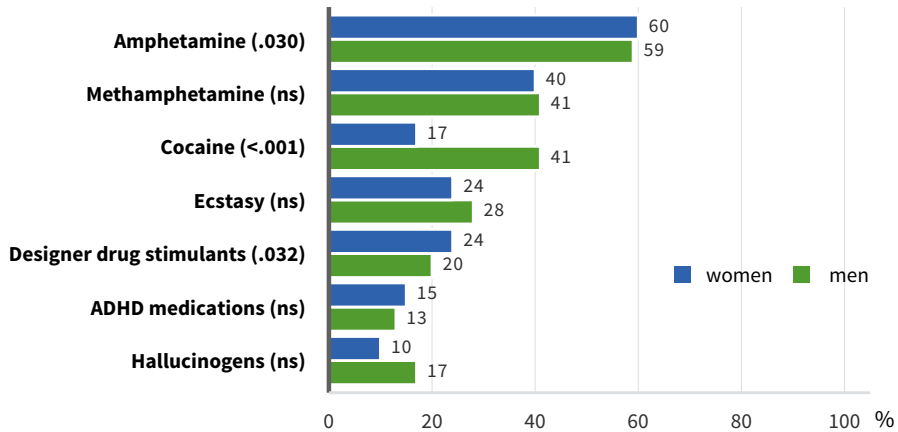


Figure 5. Self-reported prevalence of the use of stimulants and hallucinogens 12 months before imprisonment by gender (%), in proportion to total population n=527.

phetamine was the primary substance of abuse for 29 per cent of the young prisoners, 33 per cent of those aged 30–47 years and 20 per cent of those aged over the age of 47 years.

The lifetime prevalence of cocaine use disorder was 15 per cent in all prisoners, 18 per cent of men and four per cent of women ($p<0.001$), Figure 1. In all, 71 per cent of prisoners (77 per cent of men, and 54 per cent of women; $p<0.001$), reported having used cocaine at some point of their lives, Figure 4. A total of 35 per cent reported cocaine use during the previous the 12 months before their imprisonment, 41 per cent of men and 17 per cent of women, Figure 5. Four per cent of the prisoners named cocaine as their primary substance of abuse. Cocaine use was more common among prisoners aged under 30 years (78%) and those aged from 30 to 47 years (76%) than the prisoners aged over 47 years (45%) ($p<0.001$). On average, cocaine use commenced at age of 23 years (median 21 years, range from 13 to 67 years).

ADHD stimulant medication abuse during lifetime was reported by 40 per cent of the respondents (see Figure 4 above). ADHD stimulant medication abuse was more common among the young prisoners compared to the older age groups. The prevalence by age group from the youngest to oldest was 49 per cent, 44 per cent and 11 per cent, respectively ($p<0.001$). A total of 14 per cent of the respondents reported ADHD stimulant medication abuse during the 12 months preceding their imprisonment, see Figure 5. ADHD stimulant medication abuse commenced at the mean age of 23.2 years (median 22 years, range 10 to 48 years). Young prisoners initiated ADHD stimulant medication abuse at a younger age than the other age groups. From the youngest to the oldest age group, the mean age for initiating ADHD stimulant medication abuse was 18.8 years, 25 years and 36.3 years, respectively ($p<0.001$).

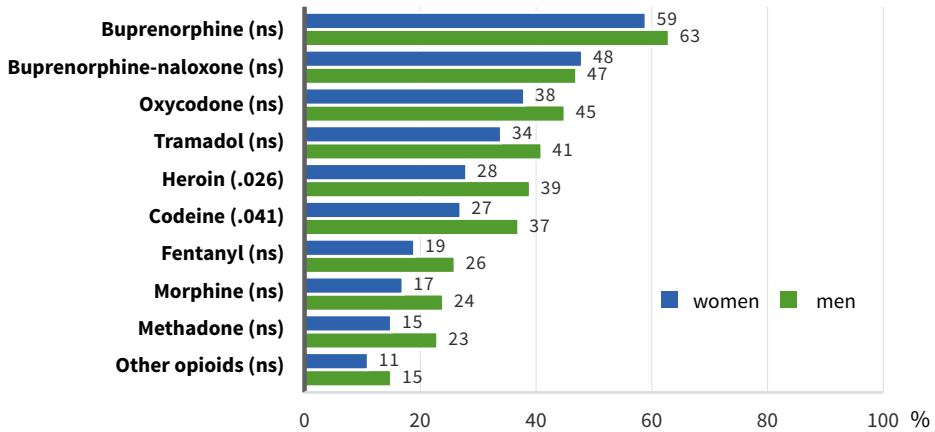


Figure 6. Self-reported lifetime prevalence of the use of opioids by gender (%).

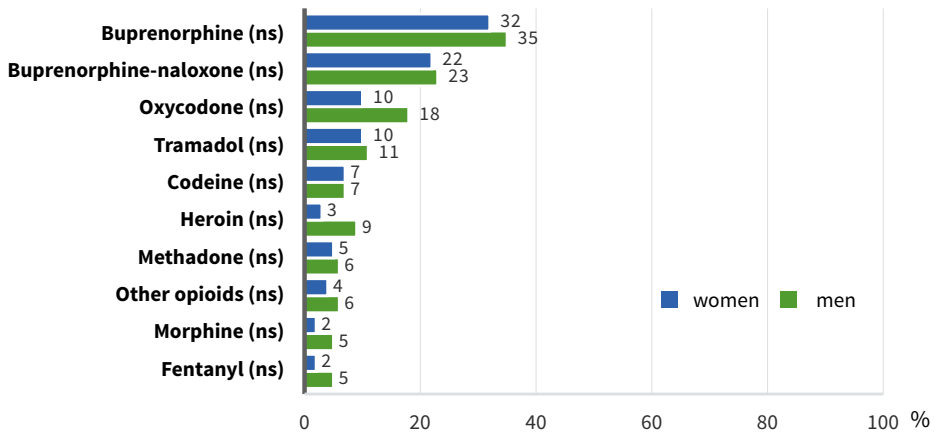


Figure 7. Self-reported use of opioids 12 months before imprisonment by gender (%), in proportion to total population n=527.

Opiods

One third (33%) of the prisoners had a lifetime opioid use disorder, no statistical difference was observed between the genders (Figure 1). Lifetime opioid use disorder was found in 30 per cent of those aged under 30 years, 40 per cent of those aged 30–47 years, and 14 per cent of those aged over 47 years. Of the prisoners, 11 per cent reported any opioid as their primary substance of abuse.

The opioid most commonly abused was buprenorphine, whose use was reported by 62 per cent of the respondents during their lifetime, and 34 per cent had used it during the 12 months preceding their imprisonment. Almost half of the prisoners (48%) reported having buprenorphine-naloxone abuse during their lives and 23 per cent in the 12 months before their imprisonment, Figures 6 and 7.

Table 2. Lifetime intravenous drug use (%), n=285/526.

	n	%	
gender			p=0.010
male	205	52	
female	80	66	
age			p<0.001
18–30 years	84	54	
30–47 years	166	62	
≥ 47 years	35	39	
first-time offender			p<0.001
yes	83	41	
no	202	65	
principal offence group			p=0.549
violence	151	56	
property	31	53	
drug	60	51	
other	43	58	
imprisonment for over 2 years			p=0,109
yes	190	58	
no	95	51	

Oxycodone was the most commonly abused potent opioid agonist. Lifetime use of oxycodone abuse was reported by 43 per cent of the prisoners; 16 per cent reported abuse during the 12 months before their imprisonment. Of those who responded to the question on fentanyl abuse, 24 per cent reported lifetime use and five per cent reported use in the 12 months before their imprisonment. Lifetime heroin use was reported by 36 per cent of prisoners, and by 8% during the 12 months prior to imprisonment, Figures 6 and 7.

Sex differences in opioid abuse were observed only in the context of lifetime codeine abuse (37% for men and 27% for women, $p=0.041$). Heroin use was prevalent in 39 per cent of men and 28 per cent of women, $p=0.026$.

Opioid abuse commenced from age of 20 years (buprenorphine, codeine, tramadol) to 25 years (methadone and fentanyl).

Intravenous drug use

Slightly more than half of the prisoners (54%) had used drugs intravenously at some point of their lives. Intravenous drug use during lifetime was more common among female prisoners (66%) compared to men (52%) ($p=0.010$). Intravenous drug use during lifetime was more common among 30-47-year-olds (62%) than under 30-year-olds (54%) and over 47-year-olds (39%) ($p<0.001$). First-timers reported less (41%) intravenous drug use than those who had been imprisoned for more than once (65%) ($p<0.001$). On the other hand, no differences were found related to intravenous drug

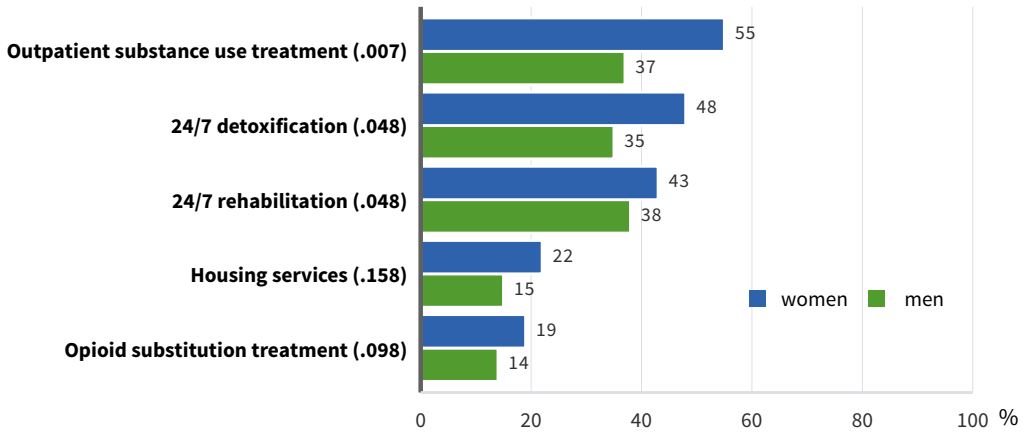


Figure 8. Persons using substance abuse services or receiving opioid agonist treatment during their lifetime by gender (%).

use based on offence types or the duration of imprisonment. Intravenous drug use in prison was reported by 18 per cent of all research participants, and 34 per cent of those who reported intravenous drug use during their lifetime, 38 per cent of men and 25 per cent of women ($p=0.042$), see Table 2.

On average, intravenous drug use commenced at the age of 20 years (median 19 years, range 10 to 42 years). No sex differences were observed. Almost all (89%) had first injected drugs somewhere else than in prison.

Use of substance use treatment services and participation in peer support groups

Of the prisoners, 41 per cent reported using outpatient substance use treatment services at some point in their lives, including 37 per cent of men and 55 per cent of women ($p=0.007$). The shares of respondents who had participated in inpatient detoxification treatment and residential substance use treatment were at nearly the same level among men and slightly lower among women compared to the shares of those who had participated in outpatient substance use treatment services. The proportion of respondents who had used housing services at some point in their lives was lower, Figure 8.

Participation in Narcotic Anonymous (NA) peer support groups at some point in one's life (26%) was more common among respondents than lifetime participation in Alcoholics Anonymous (AA) groups (15%). During preceding 12 months of imprisonment, only five per cent of prisoners had participated in NA groups and three per cent in AA groups.

Just over one fifth (21%) reported that they had used the Prison Health Care Services for treatment of their substance use problems. Of the respondents, 39 per cent

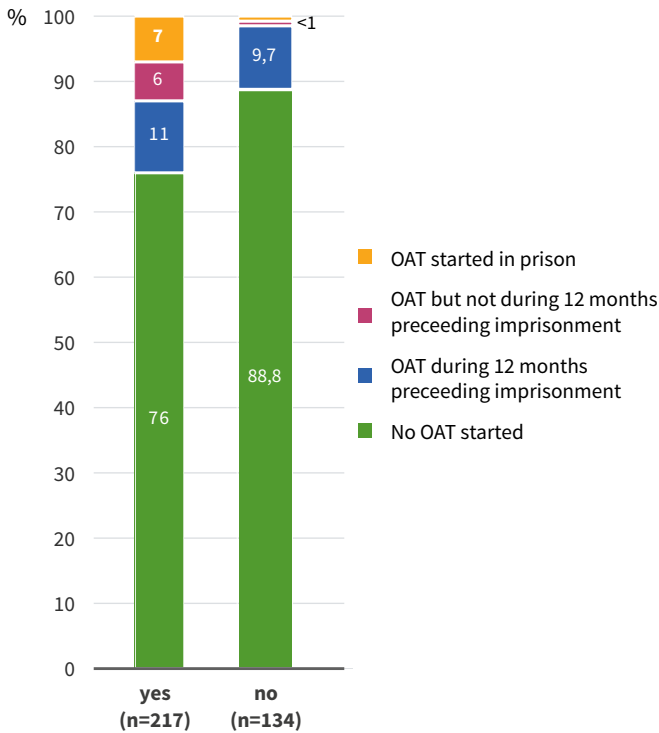


Figure 9. Share of prisoners receiving opioid agonist treatment (OAT) of prisoners who have used opioids in the previous year and of prisoners with no opioid use in the previous year (%).

reported receiving support from psychologists and counsellors in the prison wards for treatment of substance use problems.

Opioid agonist treatment

Of the prisoners, 15 per cent reported having received opioid agonist treatment (OAT) at some point in their lives, including 14 per cent of men and 19 per cent of women, Figure 8. During the 12 months before their imprisonment, eight per cent of the prisoners, six per cent of men and 13 per cent of women, had received OAT. For three per cent of the prisoners, OAT had been started during their imprisonment.

Of the prisoners who had been diagnosed with an opioid use disorder at some point in their lives, 40 per cent (n=38/95) had received OAT at some point of their lives. Almost one in two prisoners (46%, n=217/473) reported opioid use during the 12 months preceding their imprisonment, but the majority of them (76%, n=164/217) had never received OAT. Opioid agonist treatment had only been started for seven per cent (n=15/217) of those who reported opioids use before their prison term, Figure 9.

Buprenorphine injection was the most used OAT drug in prisons. It was used for 68 per cent of the prisoners receiving OAT (n=34/50). Sublingual buprenorphine-nal-

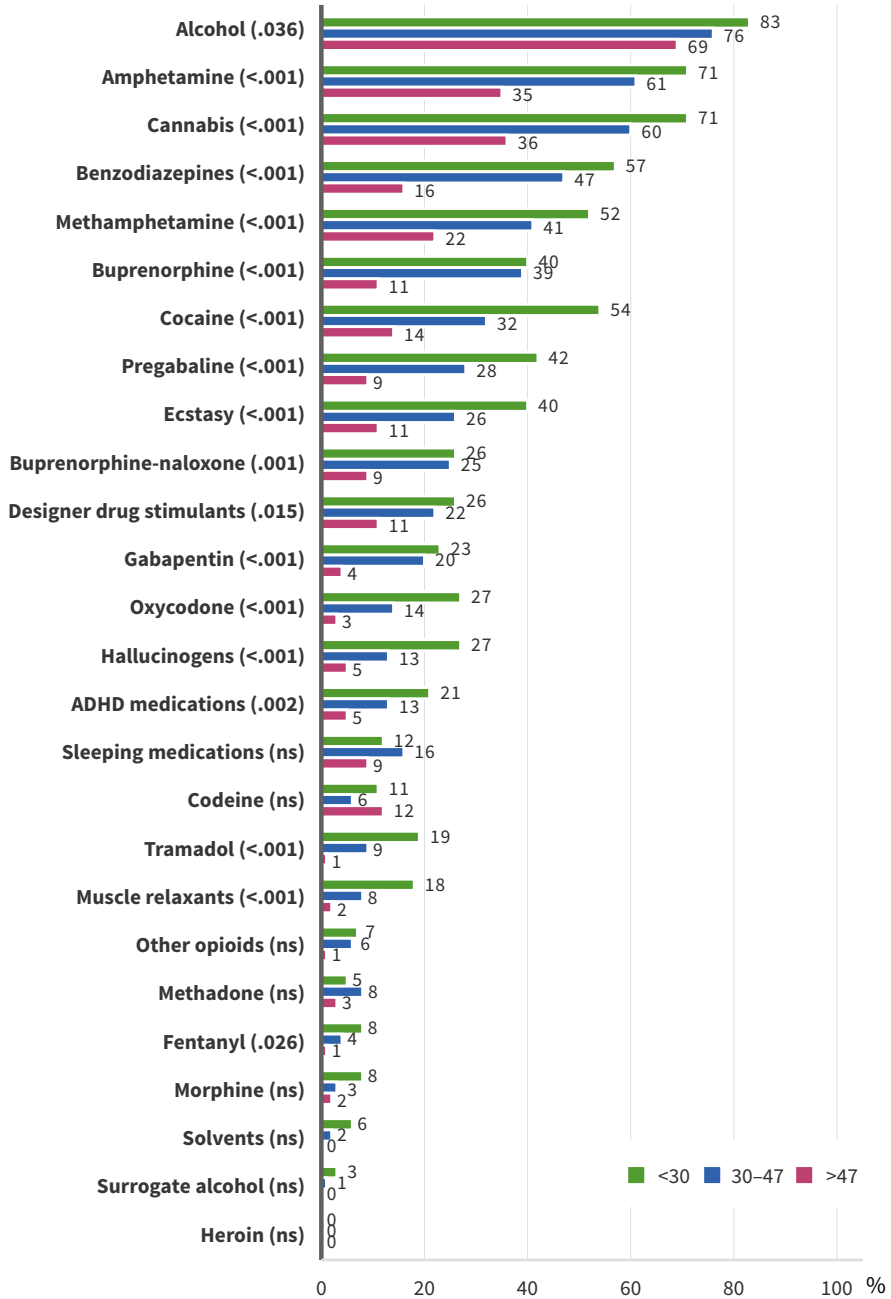


Figure 10. Use of different substances 12 months before imprisonment by age group (%).

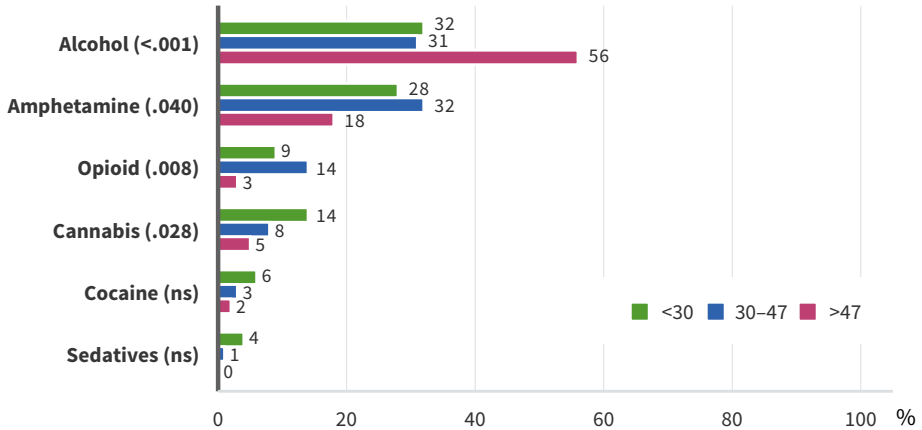


Figure 11. Primary substance of abuse among prisoners by age group (%).

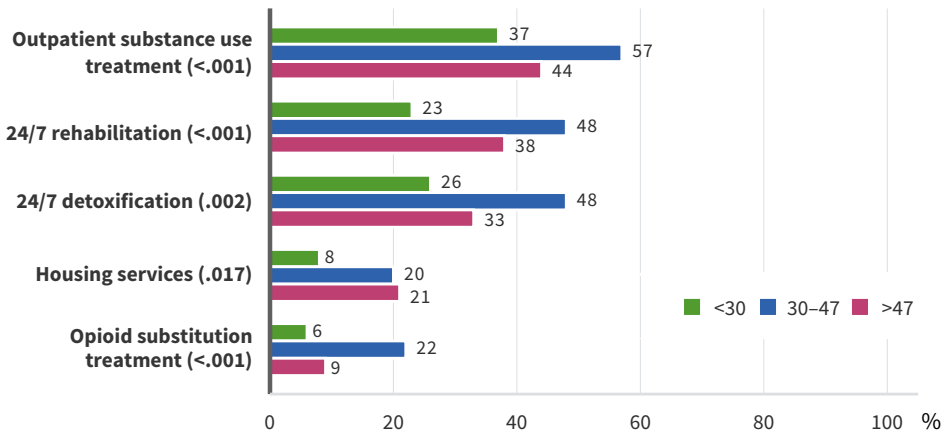


Figure 12. Prisoners using substance abuse services or receiving opioid substitution treatment during their lifetime by age group (%).

oxone was used by 18 per cent (n=9/50) and methadone by 14 per cent (n=7/50). Monobuprenorphine was not used at all.

Substance use among young prisoners

Lifetime drug use disorders were more common among the young prisoners aged 18–29 years than the other age groups. The prevalence of DUD from the youngest to the oldest group was 84 per cent; 76 per cent, and 45 per cent (p<0.001), Table 1. Young prisoners had also started abusing drugs and prescription medications at a younger age than the other age groups. Correspondingly, the use of all the examined drugs in

the 12 months preceding imprisonment was more common in young prisoners than in the other age groups, Figure 10.

Among young prisoners responding to the questions on substance use, the most commonly used substances before their imprisonment were alcohol (83%), amphetamine (71%) and cannabis (71%). Cocaine use was higher among the young prisoners (54%) compared to those aged 30–47 years (32%) and those over 47 years (14%). Of the opioids, oxycodone (27%) and tramadol abuse (19%) were more common among young prisoners than in the other age groups, whereas buprenorphine abuse was at the same level as in prisoners aged 30–47 at 40 per cent in the younger and 39 per cent in the older group. For the young prisoners, amphetamine (28%) was almost as common as alcohol (32%) as the self-reported primary substance of abuse. Cannabis as the primary substance of abuse was more common among young prisoners than the other age groups (14%), Figure 11.

Although young prisoners reported more drug use in the 12 months before their imprisonment compared to other age groups, they were less likely to attend substance use treatment services, Figure 12.

Conclusions

Substance use and substance use disorders

SUDs are very common in the prison population. In the present study, 87 per cent of prisoners were diagnosed with some lifetime SUD. The most common lifetime SUDs were alcohol (69%), amphetamine (52%), cannabis (44%) and opioid use disorder (33%). In the previous prisoner study, the prevalence of a lifetime SUD was 84 per cent. At that time, the most common lifetime SUDs were alcohol use disorder (66%), amphetamine use disorder (40%), sedative use disorder (23%) and opioid use disorder (22%). Prisoners are presumed to be more likely than before to engage in the problematic use of many different intoxicating substances, and their problematic substance use is more focused on illicit drugs than before.

It seems that problematic alcohol consumption is concentrated in older age groups, while younger prisoners have more drug problems than other age groups. Some lifetime drug use disorder was diagnosed in 74 per cent of prisoners, and it was more common among young prisoners aged under 30 (84%). In general, SUDs were more common among men than among women, and this was also the case in the previous prisoner study. Substance use is also more common among men than women in population studies (14, 15) and in studies on patient populations (10, 11).

Investigating self-reported substance use provided more detailed information about the prevalence of substance use during the lifetime and before imprisonment. The previous prisoner study did not examine the use of different substances in a similar manner, so no comparison can be made for these parts. Based on self-reporting, the most common lifetime substances used were alcohol (38%), amphetamine (30%),

opioids (11%) and cannabis (10%). Self-reported drug use and prescription medication abuse were most common among young prisoners.

Lifetime amphetamine use disorder was observed in more than half (52%) of the prisoners examined, and approximately one third of all prisoners named amphetamine as their primary substance of abuse. For young prisoners, amphetamine was as common as alcohol as the main substance. Problem amphetamine use has probably increased among prisoners compared to the 2010 prisoner study, in which lifetime amphetamine use disorder was diagnosed in 40 per cent of prisoners. It should be noted that in the Wattu III study, the term “dependence on other stimulants” was used in SUD diagnoses. This has now been defined as “amphetamine use disorder”.

A lifetime cocaine use disorder was significantly more common than in the previous prisoner study, in which only four per cent were reported to have a cocaine use disorder, whereas the prevalence of cocaine use disorder was 15 per cent in the present study. It is worth noticing that nearly four out of five male prisoners reported having used cocaine sometime during their lives. The use of cocaine was particularly common among young prisoners. Increased use of cocaine has also been observed in wastewater analyses by the National Institute of Health and Welfare (THL) (13) as well as a 2022 population survey carried out by THL (14).

A lifetime opioid use disorder was diagnosed in 30 per cent of the prisoners and was the most common in prisoners aged 30–46 (40%). Problematic use of opioids has become more common among prisoners in the previous 15 years: In Wattu III, the prevalence rate of opioid use disorders was 21 per cent. The use of opioids in the year before imprisonment was significantly common; at least one in two prisoners reported the use of buprenorphine for intoxication purposes.

A worrying phenomenon detected in this study was the high prevalence of potent opioid agonist use that increases the risk of overdose death in the prison population. In all, 16 per cent of all prisoners and as many as nearly one in three (27%) of young prisoners reported having used oxycodone during 12 months before their imprisonment. This may indicate a change in opioid use trends where new opioid users are increasingly favouring opioid agonists, especially oxycodone.

A lifetime cannabis use disorder was diagnosed in 19 per cent of prisoners in the Wattu III study, whereas the lifetime prevalence of cannabis use disorder was 44 per cent in the present study. Cannabis use, lifetime cannabis use disorder and cannabis as the primary substance of abuse were emphasised in young prisoners compared to other age groups. Cannabis use among young adults has also increased in the general population in recent decades (14).

Prisoners under the age of 30 years had initiated abusing drugs and prescription medications at a younger age compared to the other age groups. This is probably partly explained by the fact that some of the substances currently used have not been available when the oldest prisoners were young, as a result of which they could not have started using the substances at a much younger age, but the same phenomenon is also observed in the case of drugs that have been used for a long time such as cannabis, amphetamines and even heroin. Indeed, it has been noted that Finland has a genera-

tion of young people aged 15 to 24 with problematic amphetamine and opioid use, and this group is larger than ever before. This may also be reflected in the group of young prisoners described here.

Intravenous drug use was worryingly common among prisoners. Half of the prisoners had used drugs intravenously sometimes during their lives, and it was estimated that up to one in five prisoners had injected drugs during their imprisonment. The prevalence of intravenous drug use was not reported in the previous prisoner study, so no assessment of changes in intravenous drug use can be made. For more information about intravenous use, see the [Infectious diseases](#) chapter.

Substance use treatment service use among prisoners

In relation to the use of substance use treatment services, the data showed that less than half of the prisoners had received outpatient substance use treatment during their lifetime. Women had used treatment services more often than men. One in four had participated in NA peer support groups at some point in their lives. By contrast, participation in AA groups was less common. The observation likely reflects the fact that the substance use problems of prisoners are diverse and drug use is common. Thus, NA peer support groups may meet better the prisoners' needs.

Young prisoners were less likely than the other age groups to report that they had engaged substance use treatment services under study. This may partly be due to the fact that the substance use problem has not yet exacerbated to the point that the young user would have felt a need to seek treatment, but also the fact that the availability of substance use services targeted at young people varies considerably nationally, especially with regard to corrective treatment.

More than one fifth of the prisoners had used the Prison Health Care Services during their prison term to treat their substance use problems. Of the respondents, around 40 per cent had received support from psychologists and counsellors in prison wards for treating these problems during their prison term.

The coverage of opioid substitution treatment within Prison Health Care Services remains markedly insufficient. Furthermore, the initiation rate of opioid agonist treatment (OAT) in correctional facilities is disproportionately low relative to the existing demand. Almost half of the prisoners (46%) reported the opioid use during the 12 months preceding their imprisonment, but the majority (76%) of them had never received opioid agonist treatment. Only seven per cent of those reporting current opioid use had initiated OAT during their imprisonment period. The most commonly used medication for OAT was buprenorphine injection, which probably reduces the risk of abuse associated with OAT during imprisonment.

Recommendations for practice and future research

From the perspective of prisoners' health, welfare and prognosis, the treatment of substance use problems and minimising the harmful effects of substance use are key issues

in prison care. The utilization of substance use services by incarcerated individuals, both prior to and during their imprisonment, is evidently inadequate when measured against the prevailing need

Options and accessibility of substance use services to prisoners necessitate substantial enhancement. This need is underscored by the fact that a considerable proportion of prisoners with substance use problems have not received adequate treatment prior to their incarceration. Particular attention should be paid on enhancing access to substance use treatment services for young inmates and female prisoners. The service system outside the prison must take into account the needs of the recently released prisoners so ensure seamless continuity of care and support post-incarceration. Collaborative efforts between prisons and the social welfare and health care service system are crucial for ensuring continuous care and support.

The provision of opioid agonist treatment in the Prison Health Care Services should be significantly improved. Opioid agonist treatment was initiated for very few prisoners during their imprisonment. All prisoners who have been using opioids before their imprisonment should be assessed for opioid agonist treatment. In practice, this would mean at least two-thirds of all prisoners. Opioid dependence and any withdrawal symptoms should be assessed immediately upon arrival in prison. If the criteria for current opioid dependence are met, opioid agonist treatment should be initiated as quickly as possible without a separate detoxification treatment. Opioid agonist treatment practices, including both the assessment process and the implementation of treatment, should be similar in all prisons and in line with the current care guidelines.

Use of stimulants, especially amphetamines, was very common among prisoners. There is a need to increase knowledge related cocaine use, as it has increased significantly among prisoners, and use is considerably more common among prisoners than in the general population. Psychosocial treatment of stimulant dependence in prisoners should be intensified during the prison term. The effectiveness of the treatment after release from prison should be examined not only with regard to substance use problems, but also with regard to recidivism. Research is needed especially on the benefits and disadvantages of stimulant agonist treatment started during the prison term or immediately after release from prison.

Use of cannabis is very common among prisoners, which is why cannabis dependence and related withdrawal symptoms should be actively investigated when arriving in prison. Among those with cannabis dependence and long-term use, irritability and aggressiveness related to cannabis withdrawal symptoms may increase the risk of violent situations.

The time spent in prison should be used more as an opportunity not only for quitting substance use but also for reducing the harm associated with substance use. During their prison terms, prisoners should be provided with information to help them identify overdose situations, practise resuscitation skills and alerting for help, and prisoners should be instructed on how to use the naloxone-nasal spray.

Those released from prison should also be offered naloxone-nose sprays for use in overdose situations. During imprisonment, opioid users' opioid tolerance decreases,

which further increases the risk of death by overdose. Therefore, the initiation of opioid substitution treatment is also an effective way to prevent overdoses.

Health counselling related to intravenous substance use should be targeted especially at women, young prisoners and offenders returning to prison. As intravenous drug use is extremely common among prisoners, and some of them are likely to continue to intravenous drug use during their imprisonment, the prisons should offer an opportunity to anonymous needle exchange programme. Use of substance use treatment services for prisoners and the effectiveness of substance use treatment have been studied considerably less in Finland than necessary. More information is needed concerning participation in substance use treatment services and rehabilitation during the prison term as well as the effectiveness of the treatment after imprisonment. In order to develop substance use treatment services tailored for prisoners, there is a need to examine the substance use profiles, treatment needs, and use of other social welfare and health care services. This is needed especially after the prison term, who are left outside of services. This information would make it possible to better understand the diverse service needs among those who would otherwise be who are left outside of services.

Substance use problems among prisoners originate from and have been mainly developed outside prison. This makes it essential to see prisoners as part of the rest of society to which they are linked through regular social welfare and health care services. Imprisonment provides an opportunity to investigate prisoners' substance use problems in more detail and start treatment interventions that would be difficult or impossible to implement elsewhere due to reasons such as active substance use.

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- 1) Fazel, S., Yoon, I.A., Hayes, A.J. 2017: Substance use disorders in prisoners: An updated systematic review and meta-regression analysis in recently incarcerated men and women. *Addiction* (Abingdon, England), 112(10), 1725–1739. <https://doi.org/10.1111/add.13877>
- 2) May-Chahal, C., Humphreys, L., Clifton, A., Francis, B., Reith, G. 2017: Gambling harm and crime careers. *Journal of Gambling Studies*, 33(1), 65–84. <https://doi.org/10.1007/s10899-016-9612-z>
- 3) Winter, R.J., Young, J.T., Stoové, M., Agius, P.A., Hellard, M.E., Kinner, S.A. 2016: Resumption of injecting drug use following release from prison in Australia. *Drug and alcohol dependence*, 168, 104–111. <https://doi.org/10.1016/j.drugalcdep.2016.08.640>
- 4) Chang, Z., Larsson, H., Lichtenstein, P., Fazel, S. 2015: Psychiatric disorders and violent reoffending: a national cohort study of convicted prisoners in Sweden. *Lancet Psychiatry*, 2(10): 891–900.
- 5) Stöver, H. and Michels, I. 2022: Prevention of Drug-related Mortality after Release from Prison. *Gesundheitswesen*. 2022 Dec;84(12):1113–1118. <https://doi.org/10.1055/a-1884-8689>
- 6) Tverborgvik, T., Riksheim, S.M., Bukten, A. 2023: The association between drug use and mortality in a Norwegian prison cohort: a prospective cohort study. *Health Justice*. 2023 Apr 14;11(1):22. <https://doi.org/10.1186/s40352-023-00223-y>
- 7) Marsden, J., Stillwell, G., Jones, H., Cooper, A., Eastwood, B., Farrell, M., Lowden, T., Maddalena, N., Metcalfe, C., Shaw, J., Hickman, M. 2017: Does exposure to opioid substitution treatment in prison reduce the risk of death after release? A national prospective observational study in England. *Addiction*, 112(8), 1408–1418. <https://doi.org/10.1111/add.13779>
- 8) Molero, Y., Zetterqvist, J., Binswanger, I.A., Hellner, C., Larsson, H., Fazel, S. 2018: Medications for Alcohol and Opioid Use Disorders and Risk of Suicidal Behavior, Accidental Overdoses, and Crime. *The American Journal of Psychiatry*, 175(10), 970–978. <https://doi.org/10.1176/appi.ajp.2018.17101112>
- 9) Joukamaa, M. and working group 2010: Health, working capacity and need for treatment of criminal sanction clients. Report on basic results. Publications by the Criminal Sanctions Agency 1/2010. Available at <https://www.rikosseuraamus.fi>
- 10) Impinen, A. 2022: Päihdehuollon huumeasiakkaat 2021. Stimulanttikäyttäjien osuus jatkoikasvuun. THL, Statistical report 33/2022. <https://urn.fi/URN:NBN:fi-fe2022070450995>
- 11) Kuussaari, K., Rautiainen, E., Grainger, M. 2021: Päihdetapauskasvun ja hoidon kehittämisen tietolähteenä. In Kaukonen, Olavi and Kuussaari, Kristiina (eds.) Päihdepalveluiden yhteiskunnalliset haasteet. Finnish Institute for Health and Welfare (THL), Report 2/2021. <https://urn.fi/URN:ISBN:978-952-343-645-9>
- 12) Rönkä, S., Ollgren, J., Alho, H., Brummer-Korvenkontio, H., Gunnar, T., Karjalainen, K., Partanen, A., Väre, T. 2020: The prevalence of high-risk amphetamine and opioid use in Finland in 2017. *Lääketieteellinen aikakauskirja Duodecim* 2020; 136(8):927–35. <https://www.duodecimlehti.fi/duo15450>
- 13) Wastewater analysis 2022: Online publication <https://thl.fi/fi/tutkimus-ja-kehittaminen/tutkimukset-ja-hankkeet/jatevesitutkimus>
- 14) Karjalainen, K., Hakkarainen, P., Salasuo, M. 2023: Suomalaisten huumeiden käyttö ja huumeasenteet 2022 (“Drug use and drug attitudes among Finns 2022”). THL, Statistical Report 15/2023. <https://urn.fi/URN:NBN:fi-fe2023041236168>
- 15) Mäkelä, P., Härkönen, J., Lintonen, T., Tigerstedt, C., Warpenius, K. (eds.) 2018: This is how Finland drinks. THL, Theme 20. <https://urn.fi/URN:ISBN:978-952-343-146-1>



Forty-four per cent of male prisoners, and 4% female prisoners had used doping agents at some point in their lives. In the general population, the corresponding figure is approximately one per cent, overall.

The youngest prisoners who injected doping agents for the first time were 15 and the oldest were 58 years old.

The most commonly used doping agents were testosterone or its derivatives and anabolic steroids.

One in two of those who had injected doping agents had been diagnosed with hepatitis C.

Employees in the prison and probation sector need additional training on fitness doping and addressing the topic.

More research data is needed on the use of doping agents and the motives underlying their use to make users' voices heard when planning treatment practices.

Use of doping agents

Introduction

Fitness doping often refers to the use of doping agents outside competitive and elite sports, but also term performance and image enhancing drugs is widely used. Doping agents are used by injecting them, in tablets or gels spread on the skin. The most common motive for the use of doping agents is increasing muscle mass and achieving rapid results. The use of fitness doping involves an increased risk of physical and psychological adverse effects, but sometimes also a fear of stigmatisation. This fear may result in an unwillingness to openly disclose the use of doping agents or their adverse effects to health care professionals. People using doping agents are also at increased risk of contracting Hepatitis C and HIV.

The most commonly used doping agents are anabolic steroids and testosterone. The global prevalence of lifetime use of anabolic steroids is estimated at 3.3 per cent (1). In Finland, population-level surveys have shown that the use of fitness doping has remained at approximately one per cent since 2010 (2).

Studies indicate that the prevalence of the use of doping agents is more common among people with a prison background than among the general population. In Nordic prison and probation clients, a significant sub-group consists of the users of anabolic steroids with a prevalence of lifetime use of 26.2 per cent (3). In Finland, the lifetime prevalence of anabolic steroid use among people with a prison background was

9.6 per cent in a study conducted in 1998 (4). In Norway, the corresponding prevalence in 2020 was 25.5 per cent (5).

The use of doping agents, especially anabolic steroids and testosterone, is more common in men than in women. The users of doping agents form a diverse group with varying user types and use motives. Doping use is considered to be most common among men aged around 30.

Long-term use of doping agents, in particular, is associated with several health-related risks, such as blood-borne infectious diseases (Hepatitis C, HIV), cardiovascular diseases, endocrine disorders and a risk of developing mental and substance abuse disorders.

Research questions and research methods

The aim of the sub-study was to determine the prevalence of prisoners using injected doping agents in different age groups. The association between the use of doping agents and Hepatitis C infections was also investigated. The data consisted of survey responses and Hepatitis C assays performed on blood samples. The data were analysed by cross-tabulation.

Results

Slightly more than one third of prisoners (34%) had used doping agents at some point in their lives. The use of doping agents was statistically more common among men (44%) than among women (4%).

The average age for starting the use of doping agents was 25. The youngest prisoners who injected doping agents for the first time were 15 years old and the oldest were



Figure 1. Use of doping agents by age groups (%).

58 years old. One fifth (20%) of male prisoners reported having injected doping agents also during their imprisonment. Two thirds (66%) of them were in the age group of 30–47-year-olds.

When examining the lifetime use of different doping agents, 45 per cent of male prisoners had used testosterone or its derivatives and 35 per cent had used anabolic steroids. The doping agent most commonly used by female prisoners was ephedrine (10%).

The use of doping agents was most common among those aged 30–47, Figure 1. The use of doping agents by injecting was common in a group of prisoners whose principal offence was related to drugs (44%) and in a group whose sentence length exceeded two years (78%).

More than half of those using injectable doping agents (54%) were infected with Hepatitis C. The difference between the different age groups in Hepatitis C infections was statistically significant ($p=0.004$). Infections were most common among users aged 30–47 (64%).

Doping agents cause liver damage and inflammation, and the laboratory results for ALAT and AFOS indicating these were at a statistically significant higher level in those injecting doping agents compared to non-users. The average ALAT level was 42.4 U/L in users and 29.3 U/L in non-users ($p=0.007$), while the AFOS level was 39.2 U/L in users and 31.8 U/L in non-users ($p=0.015$).

Conclusions

A significant observation made in this study was the high prevalence of the use of doping agents during imprisonment. The most commonly used doping agents for quickly enhancing physical performance and muscular appearance are testosterone or its derivatives and anabolic steroids. This was also clearly reflected in the present study.

The proportion of men's lifetime use of injectable doping agents was exceptionally high. While the users of doping agents are generally young men, of the prisoners using doping agents examined in this study, the majority (i.e., more than half), belonged to the group of 30-47-year-olds.

So far, little scientific research has focused on the use of doping agents among women. This study showed that the substance most commonly used by women was ephedrine. It is most commonly used for stimulation, increasing the metabolic rate and burning fat.

In international studies, the prevalence of Hepatitis C has increased, especially among those injecting doping agents. Indeed, the clear link between the use of doping agents and the prevalence of Hepatitis C in prisoners was a worrying observation. For more information about Hepatitis C, see the [Infectious diseases](#) chapter of the present report.

Recommendations for practice and future research

Due to the high prevalence of doping agents, it is important to monitor the health of users of doping agents with a prison and probation background and to also monitor the problems arising from the use of doping agents during the prison term. It is important for all professionals working with prisoners and students entering the field to receive training on fitness doping as a phenomenon and the health risks related to doping use and dependency, and to provide them with concrete tools for practical work.

Prisoners using doping agents also need research-based information and fact-based discussions on the health risks associated with the use of doping agents. Prisoners using doping agents during their imprisonment and experiencing problems related to doping use should receive the necessary treatment measures during their prison term. Further research is needed on the motives underlying the use of doping agents to make users' voices heard when planning treatment practices.

The easy availability of doping agents may lead to an increase in the prevalence of use, which in turn may increase other health hazards caused by Hepatitis C infections and the use of doping agents also among those with a prison and probation background.

The spread of infectious diseases is also worrying because of the lack of a possibility for needle exchange in prisons. The study clearly showed that doping agents are also used during imprisonment. This must be taken into account in the development of health services and the training of different professional groups working with prisoners. A harm-reducing work approach helps professionals encounter users in an appropriate way and increases occupational safety in closed conditions.

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References

- 1) Sagoe D., Molde H., Andreassen C.S., Torsheim, T., Pallesen S. 2014: The global epidemiology of anabolic-androgenic steroid use: a meta-analysis and meta-regression analysis. *Annals of Epidemiology* 24(5), 383–398.
- 2) THL 2023: Suomalaisten huumeiden käyttö ja huumeasenteet 2022 Suomalaisten huumeekokeilut yleistyvät, asenteissa ja mielipiteissä isoja muutoksia. Statistical report 15/2023. <https://www.julkari.fi/handle/10024/146435>
- 3) Sagoe D., Torsheim T., Modle H., Andreassen C.S., & Pallesen S 2015. Anabolic-androgenic steroid use in the Nordic countries: a meta-analysis and meta regression analysis. *Nord. Stud. Alcohol Drugs*: 31, 7–20.
- 4) Korte Taimi, Pykäläinen Jaana, Seppälä Timo 1998: Drug abuse of Finnish male prisoners in 1995. *Forensic Science International*: 97(2–3), 171–183.
- 5) Havnes Ingrid, Bukten Anne, Rognli Eline, Muller Ashley 2020: Use of anabolic-androgenic steroids and other substances prior to and during imprisonment - Results from the Norwegian Offender Mental Health and Addiction (NorMA) study, *Drug and Alcohol Dependence*: 217.





Problem gambling was more common among prisoners than in the general population, even though prisoners gambled less often.

Of the participants, 13 per cent met the criteria for a probable problem gambling.

Problem gambling was most common among prisoners incarcerated for theft or property crime as their principal offence.

Problem gambling causes serious financial problems and debt.

The identification and treatment of problem gambling must not be overlooked in the treatment of different mental health challenges and other addictions. The available therapeutic tools should also be applied among the prison population.

Gambling problems

Introduction

The harms associated with problem gambling are wide-ranging and affect both the gamblers and their family and friends and, in a wider context, society (1). Co-occurring problems, including mental health and substance use disorders, are common in problem gambling, and linked with individual isolation and increased social inequality (2, 3). Problem gambling is more common in economically and socially disadvantaged groups. Problem gambling causes serious stress and goes hand in hand with severe financial problems, such as over-indebtedness. It corrodes personal relationships, as well as mental and physical health. Problem gambling strongly involves fear of stigma and feelings of shame. Self-destructive thoughts, suicide attempts, and death by suicide are more common among those who with gambling problems than the general population (4).

The prevalence of problem gambling among Finnish prisoners is not clear. Prisoners are excluded from the samples used in population surveys. Studies conducted in other countries suggest that problem gambling among prisoners is 5 to 10 times more common than among the general population (5, 6). The same was suggested by a Finnish pilot study, where 16 per cent of the studied prisoners had a probable problem gambling in the 12-month period prior to their sentence (7). In addition, one in three prisoners who were convicted of a property crime, a financial crime, or theft was like-

ly to gamble at a problematic level (7), and 24 per cent expressed willingness to receive help for their problem gambling.

Another pilot study examined the views of criminal justice workers on prisoner gambling (8). Of the prison staff participating in the study (n=21), 38 per cent had encountered one to three clients with problem gambling, one third had encountered four to ten clients with problem gambling, and one employee (4.8%) had encountered at least 11 clients with problem gambling. Nearly half of the respondents felt they needed to increase their awareness and obtain more information to better understand problem gambling. Therefore, although problem gambling is common in the prison population, and even though untreated problem gambling is associated with an increased risk of recidivism (9, 10), no systematic screening for problem gambling has been introduced in Finnish prisons.

According to a Canadian study, 65 per cent of prisoners with problem gambling had committed offences due to gambling (10). The link between problem gambling and criminal convictions has also been examined in Finland at the population level (11). Criminal sentences were more common among people who were likely to have a gambling problem or probable gambling disorder compared with at-risk level gamblers, or those who merely gambled for fun or not at all. The study also showed that getting basic social assistance (minimum level of social security, intended to cover the essential costs of daily living) was associated with a higher number of sentences and the severity of gambling.

Offending and problem gambling are presumed to be linked to certain personality traits and diagnostic categories, especially psychopathy and antisocial personality (12, 13). Studies show that attention deficit hyperactivity disorder (ADHD) is 5–10 times more common among prisoners than the general population. The prevalence of ADHD is 30 per cent in incarcerated youths and 26 per cent in adult prisoners (14). On the other hand, an ADHD diagnosis is associated with an approximately 3.5 times higher risk of problem gambling (15) compared to the general population. Antisocial personality disorder and ADHD share traits such as impulsiveness, which is also a predisposing factor in the Pathways model of problem gambling (16). Impulsiveness has also been linked to offending related to problem gambling (17). For further information, please see the chapter [ADHD and neurodivergent characteristics](#) of this report.

Problem gambling, offending, challenges in well-being and social disadvantages are intertwined (3). The wide range of gambling-related harms make it more difficult for prisoners to adapt to society after their sentence (2). Support and treatment are needed and beneficial for preventing recidivism, as shown by several studies (18, 16, 20).

Research questions and research methods

The aim of this chapter was to investigate the prevalence of problem gambling among prisoners. For this purpose, the Brief Biosocial Gambling Screen (BBGS) was utilised for the first time among Finnish prisoners. The screen uses three questions to identify

a likely gambling problem. The BBGS examines the severity of gambling from the perspectives of withdrawal symptoms (restlessness, anxiety, or irritability), hiding gambling, and any financial problems due to gambling that have led to borrowing money in the previous year. Although international research has shown that gambling is relatively common in prisons, the possibilities for gambling, especially legally organised gambling, are much more restricted in the prison environment. For this reason, the time span used in the BBGS was adapted for the prison and probation context to a form in which the respondent is asked to examine their gambling 12 months before the enforcement of their sentence. The first question “Do you gamble?” also served as a gateway question on whether the respondent had gambled in the first place.

The BBGS questions were:

- During the past 12 months prior to your imprisonment, have you become restless irritable or anxious when trying to stop/cut down on gambling? (Yes / No / I do not gamble)
- During the past 12 months prior to your imprisonment, have you tried to keep your family or friends from knowing how much you gambled? (Yes/No)
- During the past 12 months prior to your imprisonment, did you have such financial trouble as a result of your gambling that you had to get help with living expenses from family, friends or welfare? (Yes/No)

Responses are scored from zero to three. For each positive answer (Yes/No), the respondent receives one point. Even scoring one point indicates a probable problem gambling. This sub-study examined the prevalence of probable problem gambling, the occurrence of restlessness, anxiety and irritability related to gambling, the manifestation of hiding the gambling behaviour and financial problems, and the use of services providing help with problem gambling among prisoners who participated in the study according to different groups of respondents.

Results

Of all the respondents, 49 per cent (men: 51 per cent, women: 42 per cent) reported having gambled. Gambling was most common among prisoners sentenced for theft or property crime as their principal offence (63% of whom had gambled). Gambling was slightly more common among prisoners with at most primary education, of whom 54 per cent had gambled. Of all participating prisoners 13 per cent scored at least one point on the BBGS. Of all the prisoners who had gambled, this share was 26 per cent.

Those scoring at least one point on the BBGS, indicating probable problem gambling, were younger (average 33.9 years with a standard deviation of 9.2) compared to respondents who scored zero points (average 37.5 years with a standard deviation of 10.8), Figure 1. Over 90 per cent of those receiving points on the BBGS were under 47 years of age. Of respondents aged under 30, 17 per cent scored at least one point,

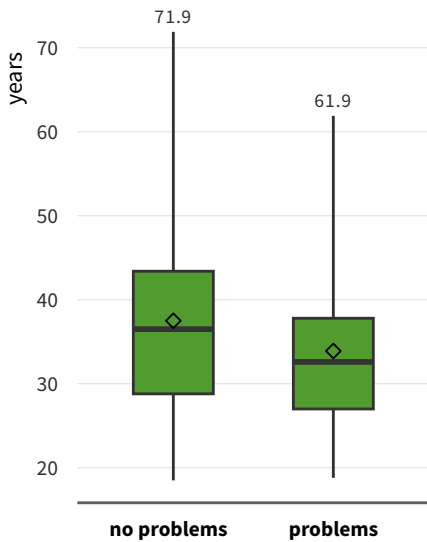


Figure 1. The age distribution of respondents that meet the criteria for problem gambling based on the BBGS instrument compared to the respondents not found to have a gambling problem.

and of first-time offenders, 14 per cent scored at least one point, indicating problem gambling. The prevalence (BBGS ≥ 1) was 11 per cent among those with previous sentences. Of those prisoner respondents whose principal offence was theft or a property crime, 22 per cent had a probable problem gambling. For those sentenced for drug-related offences, the prevalence of a probable problem gambling was 12 per cent, and for other principal offence types, 11 per cent.

Of the prisoners scoring at least one point on the BBGS, 37 per cent had experienced economic abuse. Meanwhile, 32 per cent of prisoners who received zero points in the BBGS had experienced economic abuse. The experiences of the research population of being subject-

ed to various kinds of violence are explored in further detail in the chapter [Experiences of violence and prevalence of post-traumatic stress symptoms](#) of this report.

Assessing lifetime substance abuse, 95 per cent of prisoners scoring on the BBGS instrument also met the criteria indicating a substance use disorder as did 85 per cent of those who scored zero on the BBGS. The share was 73 per cent for alcohol use disorder and 84 per cent for other substance use disorders.

Examining the questions of the BBGS instrument separately shows that about one in ten respondents (11% of men and 7% of women, had experienced restlessness, anxiety or irritation caused by gambling. These experiences were clearly more common among prisoners whose principal offence was theft or property crime. Approximately one in five responded positively to this question, as did 12 per cent of those convicted of drug offences. Of those who had experienced restlessness, anxiety or irritability caused by gambling, 25 per cent had been sentenced for theft or property crime, Figure 2.

In the group of respondents who had not felt such feelings related to gambling, 12 per cent had been sentenced for theft or a property crime. For non-gamblers, the corresponding share was eight per cent. This group included fewer prisoners sentenced for violent offences than the group of prisoners who had either not experienced restlessness, anxiety or irritability related to gambling or who were non-gamblers.

Hiding gambling from family or friends was reported by 12 per cent of the respondents who had gambled (11% of men and 17% of women). Of first-time offenders, 22 per cent reported having hidden their gambling from their family or friends. Approx-

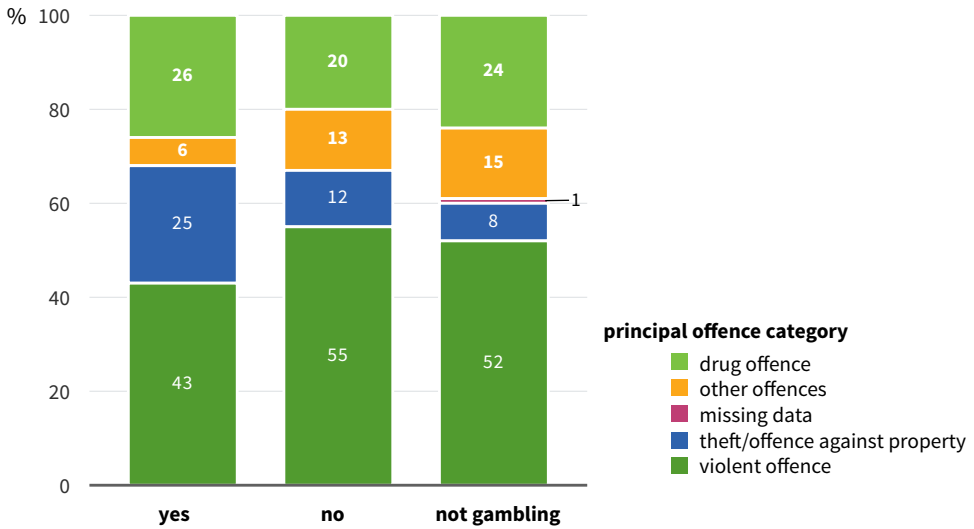


Figure 2. Principal offence categories and the relative share of feelings of restlessness, anxiety or irritation caused by gambling (%).

imately one in five of those sentenced for theft or a property crime had also been hiding their gambling from their family or friends. Hiding gambling was more common (19%) among prisoners who had spent in total less than two years of their lives in prison. Of those who had hidden their gambling from others, 52 per cent had spent less than two years of their lives in prison and 65 per cent were first-time offenders, Figure 3. Of those who had gambled but had not been hiding their gambling, 72 per cent had spent less than two years of their lives in prison.

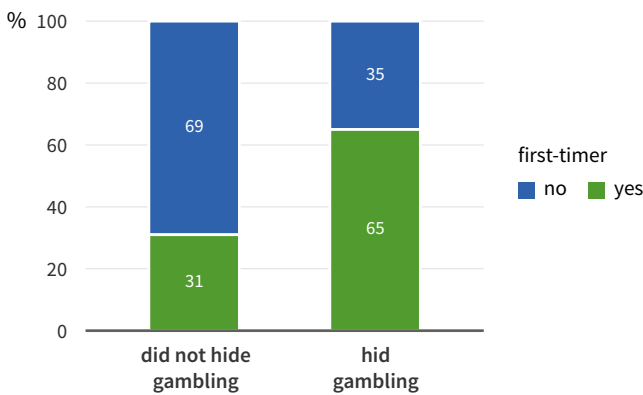


Figure 3. Hiding gambling and first-time offender status.

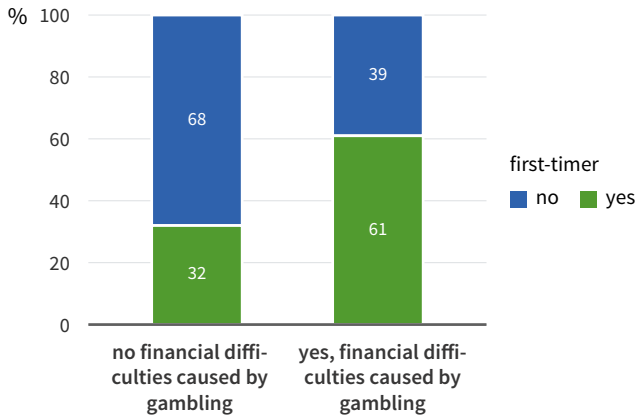


Figure 4. Financial problems caused by gambling and first-time offender status.

Of the prisoners who had gambled, 11 per cent reported that gambling had caused them financial problems, which had forced them to seek help for their daily living expenses from their families, friends, or social services. Approximately one fifth of the women who had gambled had experienced such financial problems because of their gambling. Of the prisoners who had experienced financial difficulties because of their gambling, 36 per cent were women.

Of the prisoners who gambled and had not experienced related financial difficulties, 18 per cent were women. Financial problems resulting from gambling were more common among respondents under the age of 30. In this group, 19 per cent of the respondents had experienced such financial problems because of their gambling.

Serious financial problems related to gambling were most common among first-time offenders (19%) and prisoners sentenced for theft or a property crime (17%). Of the prisoners who had gambled and experienced financial difficulties because of their gambling, 61 per cent were first-time offenders, Figure 4. Correspondingly, 32 per cent of the prisoners who had gambled and had not experienced related financial difficulties were first-time offenders.

Among all those who scored points in the BBGS, experiencing restlessness, irritability or anxiety was the most common symptom and had been experienced by 82 per cent of this group. Of the respondents scoring points in the BBGS, 48 per cent had hidden their gambling from their friends or family. 44 per cent of the respondents who had scored points in the BBGS instrument had experienced serious financial problems caused by gambling.

Three per cent of all respondents who had gambled had, at some point, received treatment for their problem gambling in outpatient care or a substance use and mental health care unit. About 1% of the respondents had used the Health Care Services for Prisoners due to their problem gambling. At the same time, it is important to note that targeted services for clients with problem gambling have not been available at the Health Care Services for Prisoners. About three per cent of all respondents had re-

ceived support for their problem gambling provided by psychologists and instructors in the prison wards of the Prison and Probation Service. Similarly, three per cent had used some other services due to their problem gambling during their prison term. However, in most of the open-ended responses related to the use of other services, the respondents pointed out that they did not have a gambling problem or had not used any services. Forms of other services mentioned in the responses included discussing with friends and family or a personal decision to stop gambling.

Conclusions

While gambling was less common among prisoners than the general population on average, problem gambling was relatively common. In the general population, the prevalence of problem gambling has been reported to be approximately three per cent (1). Based on this study, 13 per cent of prisoners were likely to have problem gambling. It should be noted that different measures are used to assess problem gambling in population surveys.

More than one fifth of prisoners whose principal offence was theft, or a property crime scored at least one point on the BBGS indicating problem gambling. However, it is unclear whether these sentences are related to criminal activity used to finance gambling, for instance. Restlessness, anxiety, and irritability caused by gambling were more common among prisoners whose primary offence was theft or a property crime. This study did not ask the respondents about the connection between gambling and criminal activities, and it is not clear whether the restlessness, anxiety or irritability related to gambling screened with the instrument is a contributing factor or a consequence of their offence. The serious financial difficulties caused by gambling, which had been experienced by 11 per cent of the prisoners who had gambled, are a clear risk factor for the exacerbation of gambling-related harms and may lead to a situation where criminal activities appear as the only way to obtain money for gambling to get out of the situation (21).

The proportion of first-time offenders was higher among those who had hidden their gambling compared to those who had not. Shame about one's actions undergirds hiding the extent of one's gambling. Problem gambling continues to involve a great deal of ignorance and related stigma, which make it difficult to openly acknowledge the problem. Those who gamble, especially at a problematic level, typically hide their gambling because it has resulted in actions that violate their moral standards or break the law to fund gambling.

As a result of their gambling, women, compared with men, had more often experienced financial problems which had forced them to obtain help from their family, friends, or social services to cover their daily living expenses. It is possible that the women's financial situation before their imprisonment has been more vulnerable. On the other hand, the women who responded to the survey may have better social networks than the men, or the threshold for receiving the kind of assistance referred to

in the question has been lower for the women. For more information about social relationships among people with a criminal background, see the chapter [Loneliness and social relationships](#) of this report.

Problem gambling was more common among younger respondents and first-time offenders. To break possible cycles of offences and facilitate prisoners' return to everyday life after their sentences, it is essential that any problem gambling is detected as early as possible, and help is offered already during the sentence. In the general population, young men are a significant risk group who are difficult to reach and respond poorly to interventions (22, 23, 24). Among young men, impulsivity and violent offending behaviour are at their peak. (25, 26).

Only a few respondents had received help for their problem gambling in outpatient care before their sentence, and this was even less common during the prison term. There have been no services for prison and probation clients with problem gambling available at the Health Care Services for Prisoners so far. Few such services have been available at the Prison and Probation Service. As prisoners' internet use is restricted, they have limited access to online treatment programmes for problem gambling. However, as a result of the Smart Prison project, the availability of the internet and digital services will be expanded and offered to this clientele in different prisons.

Recommendations for practice and future research

As problem gambling is common among prisoners, early detection and screening for possible problem gambling should be integrated into prison and probation practices. Support materials and training produced by the Finnish Institute for Health and Welfare together with other organisations involved in gambling harm prevention are available for addressing gambling and gambling-related harms and can be tailored to the needs of prison and probation workers. A short screening tool, such as the BBGS used in this study, also helps identify prisoners with problem gambling and may suffer from a gambling disorder. Prisoners may also continue their gambling in some form during their prison term. International studies (27, 28, 29) have shown that privately organised gambling among prisoners is common. Gambling-related debts may also cause violence between prisoners (30).

Support for problem gambling also offered to prison and probation clients can be made more effective and available in prisons. From the viewpoint of ensuring equal access to health and well-being services, it is crucial that possible problem gambling is considered, for example, when preparing sentence plans. The treatment of problem gambling must not be overlooked in the treatment of different mental health challenges and other addictions. Problem gambling causes serious financial problems and indebtedness, and supporting the efforts to investigate them is crucial. Uncontrolled financial problems pose a high risk of continuing gambling. Due to gambling stigma, it may be difficult to talk about gambling and related indebtedness. Creating confidential and respectful interactions is important to ensure that prisoners, who often face

situations that are stressful in multiple ways, are provided with resources for making a change and are not left alone with their problem gambling.

The primary motive for gambling is typically winning money, but those who gamble excessively seek excitement or temporary relief from boredom (31). One of the motives of gambling may also be to escape a stressful life situation, demonstrate one's aptitude, or seek experiences of success. If the person's environment offers other incentives and experiences of success fulfilling such needs, the need to gamble might be reduced. It is likely that both problem gambling and criminal activities can be prevented by supporting the general well-being of individuals and reducing disadvantages. Therefore, responsible gambling policy also plays an essential part in preventing crime.

The three-year RISERaPeli project of Life without Crime was launched at the end of 2021. Its purpose is to integrate a national service package for managing problem gambling into all community sanctions. The project activities primarily target community sanctions clients, and the project promotes the identification, prevention, and rehabilitation of problem gambling. The project involves training the employees of the Prison and Probation Service to address and identify gambling and the potential problems it may cause. The project also offers online and telephone rehabilitation with the assistance and support of trained employees.

The causal relationships between gambling, problem gambling and criminal behaviour are not yet widely known. Importantly, we should increase our understanding of the multifaceted and interconnected phenomena of ADHD and other disorders affecting impulse control, as well as crime and problem gambling. Similarly, it is important to examine the development of prisoners' criminal trajectories from the perspective of gambling and problem gambling as well as gambling during the prison term and its consequences, such as violence between prisoners. For example, the effects of indebtedness on a person with problem gambling and their loved ones will continue even after prison and probation, and intervening in these issues early enough could promote prisoners' integration back into society.

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References

- 1) Salonen, A.H., Lind, K., Hagfors, H., Castrén, S. and Kontto, J. 2020: Gambling, gambling problems and attitudes and opinions associated with gambling in 2007-2019. Gambling in Finland 2019. Finnish Institute for Health and Welfare (THL). Report 18/2020.
- 2) Williams, D.J., and Walker, G.J. 2009: Does offender gambling on the inside continue on the outside? Insights from correctional professionals on gambling and re-entry. *Journal of Offender Rehabilitation*, 48(5), 402–415.
- 3) Lind, K. 2022: Problem Gambling and Criminal Behavior: Perspectives on Comorbidities and Social Disadvantage. Academic dissertation. Tampere University Dissertations 667. Faculty of Social Sciences. Doctoral Programme in Social Sciences, Tampere.
- 4) Gray, H.M., Edson, T.C., Nelson, S.E., Grossman, A.B., LaPlante, D.A. 2021: Association between gambling and self-harm: a scoping review. *Addiction Research & Theory*, 29(3), 183–195.
- 5) Turner, N.E., McAvoy, S., Ferentzy, P., Matheson, F.I., Myers, C., Jindani, F., Malat, J. 2017: Addressing the issue of problem gambling in the criminal justice system: a series of case studies. *Journal of Gambling Issues*, 35. 1–27.
- 6) Banks, J., Waters, J., Andersson, C., Olive, V. 2020: Prevalence of gambling disorder among prisoners: a systematic review. *International Journal of Offender Therapy and Comparative Criminology*, 64(12), 1199–1216.
- 7) Lind, K., Salonen, A.H., Järvinen-Tassopoulos, J., Alho, H., Castrén, S. 2019: Problem Gambling and Support Preferences among Finnish Prisoners: a Pilot Study in an Adult Correctional Population. *International Journal of Prisoner Health*, 15, 316–331. <https://doi.org/10.1108/IJPH-07-2018-0041>.
- 8) Castrén, S., Lind, K., Järvinen-Tassopoulos, J., Alho, H., Salonen, A.H. 2019: How to support prison workers' perceived readiness to identify and respond to possible gambling problems: a pilot study from two Finnish prisons. *International Journal of Mental Health and Addiction*, 19(2), 478–493.
- 9) Lloyd, C.D., Chadwick, N., Serin, R.C. 2014: Associations between gambling, substance misuse and recidivism among Canadian offenders: a multifaceted exploration of poor impulse control traits and behaviours. *International Gambling Studies*, 14(2), 279–300.
- 10) Turner, N.E., Preston, D.L., Saunders, C., McAvoy, S., Jain, U. 2009: The relationship of problem gambling to criminal behavior in a sample of Canadian male federal offenders. *Journal of Gambling Studies*, 25(2), 153–169.
- 11) Lind, K., Hellman, M., Obstbaum, Y., Salonen, A.H. 2021: Associations between Gambling Severity and Criminal Convictions: Implications for the Welfare State. *Addiction Research & Theory*, 29(6), 519–530. <https://doi.org/10.1080/16066359.2021.1902995>
- 12) Folino, J.O. ja Abait, P.E. 2009: Pathological gambling and criminality. *Current Opinion in Psychiatry*, 22(5), 477–481.

- 13) Mishra, S., Lalumière, M.L., Morgan, M., Williams, R.J. 2011: An examination of the relationship between gambling and antisocial behavior. *Journal of Gambling Studies*, 27(3), 409–426.
- 14) Young, S., Moss, D., Sedgwick, O., Fridman, M., Hodgkins, P. 2015: A meta-analysis of the prevalence of attention deficit hyperactivity disorder in incarcerated populations. *Psychol Med.* (2):247–58. doi: 10.1017/S0033291714000762.
- 15) Jacob, L., Haro, J.M., Koyanagi, A. 2018: Relationship between attention-deficit hyperactivity disorder symptoms and problem gambling: A mediation analysis of influential factors among 7,403 individuals from the UK. *Journal of Behavioral Addictions*, 7(3), 781–791.
- 16) Blaszczynski, A., and Nower, L. 2002: A pathways model of problem and pathological gambling. *Addiction*, 97(5), 487–499.
- 17) Mestre-Bach, G., Steward, T., Granero, R., Fernández-Aranda, F., Talón-Navarro, M.T., Cuquerella, À., Jiménez-Murcia, S. 2018: Gambling and impulsivity traits: A recipe for criminal behavior?. *Frontiers in Psychiatry*, 9, 6.
- 18) Brown, R.I.F. 1987: Pathological gambling and associated patterns of crime: Comparisons with alcohol and other drug addictions. *Journal of Gambling Behavior*, 3(2), 98–114.
- 19) Blaszczynski, A. and Silove, D. 1996: Pathological gambling: Forensic issues. *Australian & New Zealand Journal of Psychiatry*, 30(3), 358–369.
- 20) McKenna, B., Brown, R., Rossen, F., & Gooder, C. 2013: Final report on problem gambling research: Delivery of problem gambling services to prisoners. University of Auckland.
- 21) Sakurai, Y. and Smith, R. 2003: Gambling as a motivation for the commission of finance crime, trends and issues in crime and criminal justice. Well. 25. Canberra: Australian Institute of Criminology.
- 22) Slutske, W.S., Blaszczynski, A., Martin, N.G. 2009: Sex differences in the rates of recovery, treatment-seeking, and natural recovery in pathological gambling: results from an Australian community-based twin survey. *Twin Research and Human Genetics*, 12(5), 425–432.
- 23) Rockloff, M. J., Schofield, G. 2004: Factor analysis of barriers to treatment for problem gambling. *Journal of gambling studies*, 20, 121–126.
- 24) Baxter, A., Salmon, C., Dufresne, K., Carasco-Lee, A., Matheson, F.I. 2016: Gender differences in felt stigma and barriers to help-seeking for problem gambling. *Addictive behaviors reports*, 3, 1–8.
- 25) Widinghoff, C., Berge, J., Wallinius, M., Billstedt, E., Hofvander, B., Håkansson, A. 2019: Gambling disorder in male violent offenders in the prison system: Psychiatric and substance-related comorbidity. *Journal of gambling studies*, 35, 485–500.
- 26) Räsänen, T., Lintonen, T., Raisamo, S., Rimpelä, A., Konu, A. 2015: Gambling, violent behaviour and attitudes towards violence among adolescent gamblers in Finland. *Nordic Studies on Alcohol and Drugs*, 32(5), 465–478.
- 27) Smith, L.R., Sharman, S., Roberts, A. 2022: Gambling and crime: An exploration of gambling availability and culture in an English prison. *Criminal Behaviour and Mental Health*.
- 28) Lelonek-Kuleta, B. 2020: Gambling in Prisons-A Nationwide Polish Study of Sentenced Men. *Journal of Gambling Issues*, 44.
- 29) McEvoy, A. and Spirgen, N. 2012: Gambling among prison inmates: Patterns and implications. *Journal of gambling studies*, 28, 69–76.
- 30) Williams, D.J., and Hinton, M.L. 2006: Leisure experience, prison culture, or victimization? Sex offenders report on prison gambling. *Victims & Offenders*, 1(2), 175–192. <https://doi.org/10.1080/15564880600626155>
- 31) Hagfors, H., Castrén, S., Salonen, A.H. 2022: How gambling motives are associated with socio-demographics and gambling behavior – A Finnish population study, *Journal of Behavioral Addictions*, 11(1), 63–74. doi: <https://doi.org/10.1556/2006.2022.00003>



Alexithymia refers to a difficulty in identifying and processing emotions.

One in five prisoners is alexithymic, which is about twice the prevalence compared to the general population.

Female prisoners have the same levels of alexithymia as male prisoners, although in general population, alexithymia is considerably more common in men.

In addition to discussion-based methods, different types of functional and experiential forms of interventions should be considered in the rehabilitation.

Alexithymia

Introduction

The term *alexithymia* originates from the Greek words *a lexi thymos*, which translates as “no words for emotions”. An alexithymic person has difficulties in recognising and describing emotions verbally. As recognising emotions is difficult, processing them is also deficient. Alexithymia is associated with a tendency for concrete and externally oriented thinking as well as somatisation (i.e., experiencing emotions as physical symptoms). For more information about the linguistic characteristics of alexithymia, see the [Linguistic skills](#) chapter of this report.

Alexithymia is associated with numerous psychological and somatic illnesses, and substance abuse disorders (1, 2). Alexithymia is also associated with living alone, unemployment, a low perceived quality of life and a low level of education and income (3). Taken together, difficulties in processing emotions are linked to many problems known to be common among prisoners. High alexithymia has been observed among both adults with a criminal background (4) and young people with severe behavioural symptoms (5, 6). In Finland, the prevalence of alexithymia in prisoners has not been studied.

Research questions and research methods

This sub-study examined the prevalence of alexithymia in prisoners. The results of the alexithymia scale in the Wattu IV survey data were compared to equivalent re-

sults from the general population and young people placed in a reform school. Alexithymia was assessed using the Finnish version of the Toronto Alexithymia Scale, a 20 item self-report scale (TAS-20). The respondents answer each statement on a five-step Likert scale, where the response options range from “strongly disagree” to “strongly agree”. The minimum total score is 20 points, and the maximum is 100 points. A score greater than or equivalent to 61 points meets the clinical cut-off for alexithymia. In addition to the total score, TAS-20 contains three sub-scales: 1) difficulties in identifying feelings and distinguishing them from the bodily sensations of emotion (DIF), 2) difficulties in describing feelings to others (DDF) and 3) externally-oriented thinking (EOT). The characteristics of the TAS-20 have been validated and it has been widely used internationally (7). Similarly, the Finnish version of the form has also been shown to be scientifically solid (8).

Results

One fifth of the prisoners were found to be alexithymic when using the clinical cut point of the TAS-20 measurement as the criterion. Viewed by gender, 22% of men and 19% of women met the criteria for alexithymia. In previous studies, the prevalence of alexithymia has been around 10% at the population level, 13% for men and 7.5% for women (9, 10). Hence, the prevalence of alexithymia in the prison population is approximately twice as high as in the general population. In female prisoners, the incidence of alexithymia was three times as high compared to women in the general population. The prevalence of alexithymia among prisoners corresponds to the prevalence found in young people aged 13–17 placed in a reform school due to severe behavioral problems. Of these young people, one in five met the criteria; 14% of boys and 33% of girls (5). The prevalence of alexithymia in different groups is shown in Figure 1.

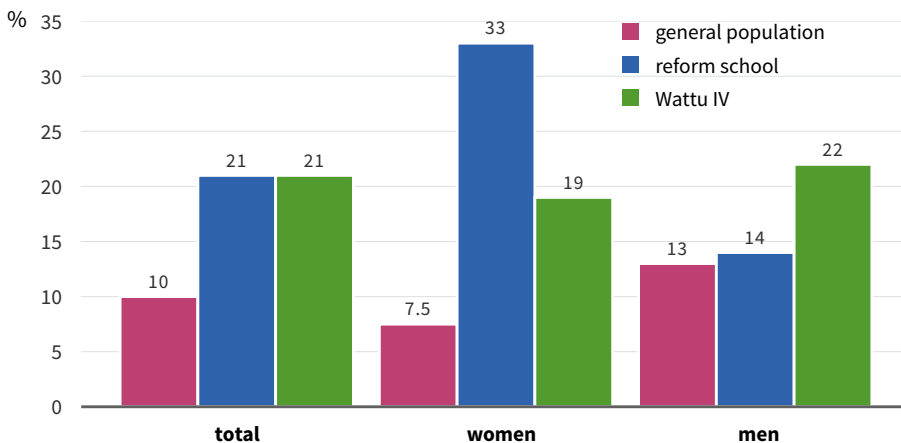


Figure 1. Percentage of persons with alexithymia among the general population, young people placed in a reform school and prisoners.

Next, we compared alexithymia prevalence among the different age groups of prisoners. The results showed that alexithymia decreases with age (Figure 2). Almost a third of prisoners aged 18 to 29 were alexithymic, as was one fifth in the age group of 30–47-year-olds, and in the oldest group, over 47, only about one in eight met the criteria for alexithymia. In the general population, the direction is opposite, as alexithymia increases with age. Only about 7% of young people aged 13–18 (11), but almost 30% of those aged over 85 (10), are alexithymic.

Calculated as a continuous variable, the total average of the TAS-20 sum scores was 51.1 (standard deviation 11.3). There was no significant gender difference in the total score; men scored 51.4 (standard deviation 11.1) and women 50.0 (standard deviation 12.0). In the general population, the average TAS-20 score is 45.8, 47.8 for men and 43.9 for women (10). The average TAS-20 score for young people placed in a reform school is 53.0 (standard deviation 10.1), 53.1 for boys and 52.7 for girls (5).

When comparing the prisoners' TAS-20 sum scores by age group, a similar phenomenon was discovered as with the clinical cut points. The average scores for alexithymia were the highest for 18–29-year-olds (average 53.4, standard deviation 11.4). In the age group of 30–47-year-olds, the average score was 50.8 (standard deviation 11.2) and in the age group of those aged over 47, the average score was 47.8 (standard deviation 10.5). In the general population, the average score for alexithymia was 42.9 in the age group of 30–44-year-olds and between 44.8 and 50.4 in 45–74-year-olds (10).

When comparing the three sub-scales of the TAS-20, it emerged that female prisoners had more difficulty in identifying feelings than men (DIF). Meanwhile, men had more externally oriented thinking (EOT) and they also struggled more with describing feelings to others (DDF). The differences in the sub-scales were in line with the previous results obtained both on the general population (10) and the reform school group (5).

Conclusions

Our results show that alexithymia is approximately twice as common in the prison population compared to the general population. Approximately one in five prisoners met the criteria for alexithymia, while in the general population this was the case for one in ten (11). The high level of alexithymia among prisoners is confirmed by using either TAS-20 sum scores or clinical cut-off values.

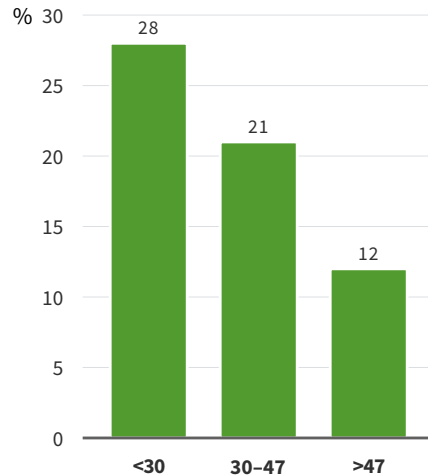


Figure 2. Percentage of prisoners with alexithymia in different age groups.

The prevalence of alexithymia varied according to prisoners' age. One third of young prisoners (18–29 years) met the criteria for clinically significant alexithymia, which is approximately four times higher prevalence compared to 13–18-year-olds in the general population (11). Young prisoners are also clearly more likely to be alexithymic than the adolescents placed in a reform school, of whom one in five is alexithymic (5). However, among young people placed in reform school, the prevalence of alexithymia is still clearly more common compared to young people in the general population.

The high incidence of alexithymia in young prisoners and youth placed in a reform school may be linked to a difficult overall situation in which the ability to process emotions has not developed appropriately. Among these youths, there are more mental health problems, substance abuse, experiences of trauma, as well as lower resilience and difficulties in school and study path. In addition, their social networks often consist of other asocial individuals. Based on a previous study, alexithymia is known to be associated with childhood maltreatment (12).

In prisoners aged 30–47 years, the prevalence of alexithymia was approximately three or four times higher compared to the general population of the same age. Approximately one fifth of the prisoners of this age were alexithymic, whereas in the general population of same age, alexithymia occurs in approximately 5–9% (10). In this age group, the relationship in the incidence of alexithymia between prisoners and the general population is at the same level as in the group of 18–30-year-olds.

By contrast, in the oldest prisoner age group (i.e., those aged 47–72 years), the prevalence of alexithymia is lower, as only about one in eight of them was alexithymic. It is noteworthy that, in this group, the incidence has dropped to the level of the general population. This is an interesting phenomenon, as alexithymia has been found to be higher among older persons in the general population, and almost one in three of those aged over 85 is alexithymic (10).

As Wattu IV is not a longitudinal study, the lower level of alexithymia in older prisoners may be explained by selection. A life of crime is extremely stressful – largely through the multiplier effects of substance abuse problems – and, according to clinical experience, the average life expectancy of prisoners is clearly lower compared to the general population. The prisoners in the oldest age group in the Wattu IV study have lived an exceptionally long life for a prisoner, and it is therefore possible that this group differs qualitatively from other prisoners. On the other hand, it can also be thought that the more time a prisoner has spent in prison during their lifetime, the more support they have received in maintaining a healthy lifestyle and treating their chronic diseases. These actions further promote prisoners' brain health and reduce both the risk of mental health problems as well as the related harmful multiplier effects. The prison term also offers psychosocial support to prisoners, which promotes their emotion regulation skills. Imprisonment also provides other kinds of opportunities for processing own emotions and personal life events. Many prisoners read a lot during their prison term and write long letters to their loved ones.

There was no significant difference in the prevalence of alexithymia among male and female prisoners. This is an interesting observation, as in extensive Finnish studies of the general population, men have systematically shown alexithymic more often

than women (3, 9, 13). Alexithymia prevalence among women in prison is thus considerably higher compared to women in general population.

The high alexithymia rates among female prisoners could be explained by several hypotheses. The overall health of female prisoners is lower than that of male prisoners (14), and alexithymia correlates with both mental health problems and somatic complaints. However, the causal relationship between alexithymia and various health problems is unclear. It is possible that a living environment with a high level of crime, especially violence, particularly exposes women to developing alexithymia. On the other hand, it can also be hypothesized that alexithymia reduces various behavioural restraints, such as respect for the rights and integrity of other people, which in turn increases the risk of serious criminal offending.

Previous studies have found that alexithymia is more prevalent among girls than boys in the age group 13–18-year-olds in the general population and among the 13–17-year-olds placed in reform school (5, 11). This over-representation of girls compared to boys may be related to the simultaneous prevalence of alexithymia and other mental health problems, as the proportion of girls in adolescent psychiatric care also exceeds the proportion of boys. It can be considered that, like in the adult population, the symptoms of alexithymia in young people also correlate with other mental health problems. It would be interesting to find out whether girls' simultaneous alexithymia and mental health symptoms in adolescence are linked to later life of crime. Regardless the causality, the high prevalence of alexithymia among female prisoners is an important finding, and further research is needed to identify the underlying mechanisms.

Gender differences were also noticeable when viewing the sub-scale scores of the TAS-20. Female prisoners had more difficulties in identifying their feelings, while male prisoners had more difficulties in describing feelings to others and were more likely to have externally oriented thinking. These gender differences were as expected, as they correspond to previous results in both the general population (10) and young people placed in reform school (5).

The high prevalence of alexithymia in prisoners is important to consider when planning and implementing rehabilitation offered in the prison. Alexithymia may be a permanent personality trait, but it may also have developed as a result of environmental adaptation. This latter trajectory is referred to as 'reactive' or 'acquired' alexithymia, in which substance abuse problems and traumatic experiences, for example, nurture alexithymia (15). Both substance addiction and trauma history are very common among prisoners, and it is somewhat reasonable to propose alexithymia as an adaptation to rough growth and living conditions. While it makes sense to adapt this way from the point of view of survival, it also has a harmful downside: poor emotion-processing skills are connected to various problems, related to both the person's coping and their interactions with others. In terms of improving the overall prognosis, reducing alexithymia by learning emotional skills is essential.

This study found that in the oldest group of prisoners alexithymia had decreased to the same level as in the general population. It is possible to interpret this result in the way that a long prison term improves emotion processing skills. While the daily life outside the prison can be chaotic surviving from day to day, in prison basic needs

are met, the brain has the opportunity to rest, and the environment is fundamentally safer than the outside world. This can reduce stress levels. Through these factors, the period of imprisonment provides a good opportunity for the prisoner to pause and reflect on one's thoughts and feelings.

Recommendations for practice and future research

It is reasonable to assume that alexithymia is both associated with harmful phenomena during imprisonment and reduces the prisoner's longer-term prognosis. Screening alexithymia is recommended while investigating the prisoner's well-being.

The results on the role of psychotherapy in reducing alexithymia among the general population are mixed (16, 17). In prison, too, the challenges of discussion-based methods in the treatment of alexithymia should be considered. Long-term offending is often linked to poor verbal reasoning skills (18), and poor verbal ability combined with difficulties in processing emotions is a challenging combination for traditional psychotherapy.

Imprisonment can be seen as a positive opportunity that provides a controlled environment for carrying out sufficiently long and ambitious interventions. A good starting point for learning how to process emotions is to talk to prisoners about the basics of brain and mental activity, a topic which many prisoners may be very unfamiliar with. Such psychoeducation is a cost-effective, low-threshold treatment. New technologies, such as virtual reality, can also be utilised in psychoeducation and acquiring emotion processing skills.

Prisoners may also independently examine their emotions and what is going on in their minds. Many prisoners both write and read a lot in prison compared to their previous life situations. Encouraging and enabling the prisoners to write letters and read books is worthwhile. There is also an increasing body of evidence on the positive impacts of many other cultural activities on mental well-being (19). Excellent results have been obtained in the treatment of young people with severe behavioural symptoms from engaging in activities such as rap and theatre workshops (20). There are also good experiences of theatre activities in the rehabilitation of adult prisoners (21). In further studies, it would be interesting to examine how participation in different types of interventions during imprisonment affects the level of alexithymia at the individual level. At the group level, there is a need to examine in more detail the possible link between long-term imprisonment and a reduction in the symptoms of alexithymia.

There is no silver bullet for treating alexithymia; instead, emotion-processing skills can be promoted in a number of ways. Effective rehabilitation requires a versatile toolkit of methods to construct a treatment package that best suits the prisoner's situation, motivates to engage and has an impact. Selecting the methods used and setting treatment objectives together increases the prisoner's sense of inclusion and strengthens their motivation and commitment to treatment. Genuine personal motivation is the most essential factor in changing a person's behaviour. After finding motivation, the prisoner needs a safe environment for encountering and processing their emotions. Mental safety is created through appreciative, warm, and genuine interactions between staff and prisoners.

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References

- 1) Taylor, G. J., Bagby, R.M., Parker, J.D.A. 1997: Disorders of affect regulation: Alexithymia in medical and psychiatric illness. Cambridge University Press, 1997.
- 2) Honkalampi, K., Jokela, M., Lehto, S. M., Kivimäki, M., Virtanen, M. 2022: Association between alexithymia and substance use: A systematic review and meta-analysis. *Scandinavian Journal of Psychology* 63.
- 3) Mattila, A. K. et al. 2009: Alexithymia and health-related quality of life in a general population. *Psychosomatics* 50, 59–68.
- 4) Kroner, D.G. ja Forth, A.E. 1995: The Toronto Alexithymia Scale with incarcerated offenders. *Pers. Individ. Dif.* 19, 625–634.
- 5) Manninen, M. et al. 2011: Alexithymia is common among adolescents with severe disruptive behavior. *J. Nerv. Ment. Dis.* 199, 506–509.
- 6) Zimmermann, G. 2006: Delinquency in male adolescents: the role of alexithymia and family structure. *J Adolesc* 29, 321–332.
- 7) Parker, J.D., Taylor, G.J. ja Bagby, R.M. 2003: The 20-Item Toronto Alexithymia Scale. III. Reliability and factorial validity in a community population. *J Psychosom Res* 55, 269–275).
- 8) Joukamaa, M. et al. 2001: Psychometric properties of the Finnish 20-item Toronto Alexithymia Scale. *Nord J Psychiatry* 55, 123–127.
- 9) Honkalampi, K., Hintikka, J., Tanskanen, A., Lehtonen, J., Viinamäki, H. 2000: Depression is strongly associated with alexithymia in the general population. *J. Psychosom. Res.* 48, 99–104.
- 10) Mattila, A.K., Salminen, J.K., Nummi, T., Joukamaa, M. 2006: Age is strongly associated with alexithymia in the general population. *J. Psychosom. Res.* 61, 629–635.
- 11) Honkalampi, K. et al. 2009: The prevalence of alexithymia and its relationship with Youth Self-Report problem scales among Finnish adolescents. *Compr. Psychiatry* 50, 263–268.
- 12) Khan, A.N. and Jaffee, S.R. 2022: Alexithymia in individuals maltreated as children and adolescents: a meta-analysis. *Journal of Child Psychology and Psychiatry and Allied Disciplines* 63.
- 13) Kokkonen, P. et al. 2001: Prevalence and sociodemographic correlates of alexithymia in a population sample of young adults. *Compr Psychiatry* 42, 471–476.
- 14) Viitanen, P. 2013: The Health, Work Ability and Healthcare Needs of Finnish Female Prisoners. Tampere University.
- 15) de Bruin, P.M.J., de Haan, H.A., Kok, T. 2019: The prediction of alexithymia as a state or trait characteristic in patients with substance use disorders and PTSD. *Psychiatry Res.* 282.
- 16) Ogrodniczuk, J.S., Piper, W.E., Joyce, A.S. 2011: Effect of alexithymia on the process and outcome of psychotherapy: A programmatic review. *Psychiatry Res.* 190, 43–48.
- 17) Grabe, H.J. et al. 2008: Alexithymia and outcome in psychotherapy. *Psychother. Psychosom.* 77, 189–194.
- 18) Moffitt, T.E. 1993: Adolescence-limited and life-course-persistent antisocial behavior: a developmental taxonomy. *Psychol. Rev.* 100, 674–701.
- 19) Fancourt, D. and Finn, S. 2019: What is the evidence on the role of the arts in improving health and well-being? A scoping review. *Health Evidence Network Synthesis Report* 67. doi:10.18261/issn.2535-7913-2020-01-08
- 20) Känkänen, P. 2013: Arts-based methods in child welfare – towards own space and experiences. Doctoral T, University of Helsinki.
- 21) Davey, L., Day, A., Balfour, M. 2015: Performing Desistance: How Might Theories of Desistance From Crime Help Us Understand the Possibilities of Prison Theatre? *Int. J. Offender Ther. Comp. Criminol.* 59, 798–809.



Resilience refers to the capacity to adapt to and recover from adversities.

On average, resilience among prisoners was lower than among the general population. Half of male prisoners and three out of five female prisoners had especially low resilience.

Compared to other prisoners, those with low resilience were more likely to have problems related to work ability and somatic health, and they served shorter sentences.

Low resilience appears to be associated with extensive coping problems: the criminal activities of prisoners with low resilience may arise from chaotic and uncontrolled everyday life compared to systematic and serious offending.

Resilience can be strengthened during imprisonment, e.g. by treating mental health problems and traumas, strengthening personal agency and providing environmental support for stability.

Resilience

Introduction

Encountering different adversities and the subsequent transitory changes in one's welfare is a normal part of a person's life course. However, some adversities are so severe that they can impair one's mental wellbeing for a long time. Resilience refers to a process that is initiated by serious adversity. As a successful outcome of the process, the level of functioning is maintained or restored. If a person faces several adversities in life, they correspondingly also need more resilience than others to maintain their level of functioning (1). Typically, prisoners have faced several adversities on their life paths, but very little is known about prisoners' resilience.

Low resilience has been found to be associated with behavioural disorders (2), as well as many mental health problems, psychosomatic symptoms, and harmful substance use (3). Substance abuse, mental health problems, and many types of somatic diseases are more prevalent among prisoners compared to the general population (4).

International research has shown that prisoners have lower resilience compared to the general population (5). Among prisoners, low resilience is associated with substance use (6), insomnia (7), and impulsiveness (8). To the best of our knowledge, this study is the first one to examine the level of resilience among Finnish prisoners.

Research questions and methods

This study examined the level of resilience among Finnish prisoners, and compared it to corresponding levels in both the Finnish general population and among young people placed in a reform school due to serious behavioural symptoms. The association between resilience and the themes that cut across all sub-studies was also examined.

Data on resilience among general population was obtained from the Youth Barometer 2022 data set (N=1,864), in which the age distribution was 15–29 years (9). Resilience data from young people placed in a reform school was based on the Resilience Survey 2022 (ReTu22) data set (N=71), in which the age distribution was 13–17 years (10).

The level of resilience was evaluated using the CD-RISC-10 self-report scale, which is a widely used instrument with high-quality psychometric features. The CD-RISC-10 scores can be used either as a continuous variable or also categorically. According to the test developers’ guidelines, the scale’s lowest score range (0–29) indicates a low level of resilience. (11)

The average scores of the CD-RISC-10 scale among prisoners, the general population, and the reform school data set were compared using a t-test. Any statistical differences between men and women, different age groups and resilience groups were investigated using Pearson’s chi-squared and ANOVA tests.

Results

The average CD-RISC-10 score was lower among prisoners than among the general population. However, the resilience of prisoners was clearly higher than that of young people placed in reform school. Both differences were statistically significant. The averages and standard deviations of the three groups are presented in Table 1.

On one hand, the group average of prisoners indicates a low level of resilience. On the other hand, approximately one in ten prisoners assessed their resilience as very good (37–40 points).

Table 1. Different sample sizes, age distributions, average scores and standard deviations in CD-RISC-10, and the statistical significance of the difference in averages between prisoners and control groups.

	n	age	CD-RISC-10-average	standard deviation	p-value
Wattu IV	526	15–72	27.6	7.8	N/A
NuBa22 (general population)	1864	15–29	29.7	6.4	***
ReTu22 (reform school data)	71	13–17	23.9	7.9	***

***p<.001

Among prisoners, no significant difference was found in the average resilience scores of men and women (27.8 vs. 26.8). Particularly among the men, there were individuals with extremely low scores. Categorically, half of the men and three out of five of the women had a low level of resilience. Again, this difference between genders was not statistically significant.

When examined by age group, the scores of prisoners under the age of 30 were slightly lower than the scores of those aged over 30. For those aged over 47, the scores corresponded with the age group of 30–47. The average scores of the different age groups are presented in Table 2.

Table 2. Prisoners' CD-RISC-10 averages and deviations by age group.

	age group (years)					
	18–29		30–47		>47	
	mean	standard deviation	mean	standard deviation	mean	standard deviation
CD-RISC-10 score	26.6	7.5	28.0	7.8	28.1	8.1

Next, the resilience scores for prisoners were examined from the viewpoints of the themes cutting across the entire study by comparing the low resilience group with other prisoners. Significant differences are shown in Table 3.

Approximately two thirds of the prisoners with low resilience were willing to set targets related to their health goals in their sentence plan, whereas in the group with higher resilience, the corresponding share was around one in two. Likewise, two thirds of those with low resilience were assessed to have partial work ability or full disability. Among those with higher resilience, only one third had inadequate work ability.

When comparing the lengths of prison terms, low resilience was associated with a shorter period of imprisonment during one's lifetime. In the low resilience group, two out of five prisoners had less than two years of total days of imprisonment, whereas in

Table 3. The share of prisoners in the low resilience group compared to other prisoners.

	resilience level		p-value
	low	normal/high	
men	54%	46%	ns.a
women	61%	39%	N/A
willingness to set health targets in sentence plan	65%	53%	.009 **
reduced work ability	66%	35%	<.001 ***
total lifetime prison days less than 2 years	41%	31%	.016 *
duration of current sentence over 2 years	47%	59%	.006 **
violent offence & sentence over 2 years	60%	50%	.029 *

***p<.001, **p<.01, *p<.05. a=difference between men and women

the higher resilience group, this was the case with less than one in three. In addition, the length of the current sentence is less likely to be over two years in the low resilience group than among other prisoners.

No significant differences in resilience was found in the principal offence types examined. However, when examining only those whose principal offence was violence-related, in the low resilience group, the sentence was more than two years in three out of five. In the higher resilience group, one in two violent offenders was serving a sentence of over two years.

Conclusions

Resilience plays an essential role in coping with various difficulties that people may encounter in their life paths. The results of this study show that on average, resilience is lower among prisoners compared to the general population. Half of the prisoners report clinically low resilience, and only about one in ten evaluate their resilience as good. These results are in line with previous international findings, which have shown that resilience among prisoners is weaker compared to general population (12, 13).

Although prisoners had lower resilience compared to the general population, their resilience was clearly stronger compared to young people placed in reform school. This difference may be explained by several factors. First, the young people placed in reform school are aged 13–17 and the prisoners' dataset covered people aged 18–72. Previous studies have shown that resilience is lower in early adolescence compared to adulthood (13). It is likely that the developmental tasks related to independence and reaching the age of majority both require and encourage growth spurt in resilience.

It is also possible that the group of young people placed in reform school differs qualitatively from the prisoners. Reform school placement has been shown to be associated with offending in adulthood (14) and several mental health issues (15). It can be hypothesized, that among the reform school population, low resilience manifests later predominantly as mental health disorders rather than criminality. Individuals on this life course may not end up in prison.

More, the difference in the resilience level of prisoners and young people placed in reform school can also be related to perceived agency. For prisoners, ending up in prison is a consistent sanction for committed acts, whereas the reform school placement is a support measure of child welfare services, and the young person may regard its necessity differently than authorities. If a young person disapproves of the placement, this can result in a poor sense of involvement, which in turn, may have a negative impact on the young person's experience of resilience.

In the general population, resilience increases with age in adulthood (12, 13, 16, 17). However, in this study, the resilience scores of prisoners no longer increased after the age of 30–46. Prisoners over 47 years of age may find themselves unable to leave the life of crime, unlike most of the people in their age group have already done. More and more prisoners are younger than them, from which older prisoners may infer evidence

of their own inability to move forward in life. This can result in a decline in a person's self-efficacy, which in turn, can serve as a self-fulfilling prophecy.

The stagnation of the resilience level of prisoners might also be related to selection. Those prisoners whose resilience has continued to grow with age may have been able to leave an antisocial life-course and are therefore not imprisoned later in life. As a result, prisoners aged over 47 comprise a special, considerably disadvantaged group of prisoners.

Three out of five female prisoners and half of male prisoners belonged to the low resilience group, but the difference was not statistically significant. This is an interesting finding, as a previous large-scale study has shown that among the general population adults, resilience is higher among men compared to women (12).

Resilience among female prisoners has not been studied in Finland before, but previous research allows us to present some hypotheses. The overall health of female prisoners is poor compared to male prisoners (18), and low resilience is connected to a wide range of mental and somatic problems (3). A phenomenon that has been described as possibly the strongest form of resilience may be found among female prisoners (19): people, who suffer from psychological symptoms after facing an adversity, but nevertheless have belief in their own coping must have a very strong resilience. Especially for women, a criminal lifestyle and the various negative multiplier effects associated with it may require at least a medium level of resilience in order to survive from one day to the next.

In this study, low resilience was associated with a strong symptom awareness: two thirds of the prisoners with low resilience wished that they would receive help with their somatic problems during their prison term. A previous study has shown a link between some somatic diseases and low resilience (13), and psychosomatic symptoms are also known to be associated with lower resilience (3). In addition, prisoners have been found to use a lot of medical services during their lives, but their appointments are focused on acute illnesses and emergency care visits instead of long-term care and preventive services (18). During imprisonment, prisoners receive an extensive health examination and have the opportunity to make a long-term commitment to take care of their health, especially any underlying diseases that have not been under control. Sufficient somatic health and particularly well-being of the brain are fundamental for achieving a permanent life change. It is safe to assume that improved health reduces overall stress and makes it possible to engage in positive long-term plans and goals. Thus, increased well-being strengthens resilience.

A considerable number of prisoners with reduced work ability had poor resilience. These two phenomena are likely to strengthen each another: low resilience reduces the prisoner's efforts to maintain or improve their work ability, while experienced disability and being permanently excluded from working life reduces perceived resilience. It is plausible, that in some cases, underlying cognitive and neuropsychological deficiencies have a substantial role in this. On the other hand, there also are prisoners whose disability is more functional than brain-structure related. There's room for a positive feedback loop: if the person's resilience can be improved, their possibilities to restore

their work ability may increase. Similarly, a successful work try-out is likely to increase resilience.

Low resilience was associated with both a shorter current sentence and fewer life-time days spent in prison. Thus, it can be hypothesized that the criminal activities of prisoners with low resilience are related to chaotic everyday life compared to systematic and serious offending. Further, the imprisonment sentences of the low resilience group might be related to the accumulation of impulsive and uncontrolled acts due to difficulties in overall life management, such as a vagabond lifestyle and substance abuse problems.

No association was found between resilience and principal offence type. However, among those sentenced for a violent offence, low resilience was associated with a longer prison sentence. A longer sentence for a violent offence is a consequence of more severe violence. This may indicate that prisoners with low resilience who are inclined to violence have deficiencies in self-control. This hypothesis is supported by a previous study on prisoners, according to which low resilience is related to aggression (8). At least in some cases, the aggression is probably connected to a serious substance abuse problem, as in Finland, most acts of violence are committed while intoxicated.

Taken together, our results show that prisoners are a special, disadvantaged group, in which low resilience often adds the total burden of adversities. Low resilience associates with harmful coping methods, which in turn increase or maintain the risk for multiple problems. Improving resilience during the prison term means that the prisoner gains skills that allow them to cope better with future hardships. Coping with both minor and major adversities is an essential skill for a successful transition to a life without crime. Indeed, strengthening resilience can be seen as a kind of psychological vaccination programme: good resilience increases the odds to manage adversities with minor damage and allows to quickly restore original level of functioning. Strengthening resilience benefits also those with a stable current situation, because the future will inevitably bring some sort of hardships to everyone.

Although ending up in a prison is generally an unfavourable outcome with a poor prognosis, a prison sentence can also provide an opportunity to change the life-course for the better. It is not possible to erase all accumulated adversities and risk factors like hereditary factors, neuroanatomical deficits or traumatic life experiences, but good resilience may act as a counterbalance for the negative impact. Living in a controlled, safe environment like prison provides an excellent opportunity for carrying out effective interventions. Improving resilience may play a key role in the direction of the prisoner's life-course after imprisonment.

Recommendations for practice and future research

Resilience can be strengthened in various ways based on the prisoner's individual situation. The efforts to strengthen resilience may be related to supporting the prisoner's personal characteristics, such as confidence, ability to regulate emotions. and prob-

lem-solving skills. Increasing resilience may also include reinforcing the interaction with environment, such as strengthening the prisoner's closest relationships and supporting the prisoner to join societal activities. In addition, studying, working or attending voluntary activities are likely to strengthen resilience by increasing the prisoner's sense of agency, belonging and being meaningful.

Prisoners can also strengthen their resilience independently by examining their inner world and life, for example by writing a diary or letters or reflecting themselves to characters in books. In addition, most prisoners also need other people to act as a mirror to their social interaction and other activities, to provide support in times of trouble and to considerably challenge the dysfunctional meaning-making and operating patterns. Staff with respectful attitude and a genuine interest in the prisoners' well-being is likely the most effective and practical way to strengthen prisoners' resilience.

Resilience can be strengthened in all situations where prisoners are encountered. Encounters that promote positive development include everyday social interaction, but also special sessions and appointments, for example, with a prison psychologist. Treating mental symptoms, traumas and substance abuse problems strengthens resilience.

The structures of the physical and social environment also play an important role in the development of the prisoner's resilience. A stable and predictable environment balances the prisoner's nervous system and helps to avoid states of hyper- and hypoarousal. An environment that is considered safe is a prerequisite for working on one's inner world and connecting with other people. In a further study, it would be interesting to use a longitudinal study design to explore how resilience appears in the different life stages of persons with a criminal background and which factors affect changes.

Supporting prisoners' resilience during the prison term pays off. When successful, it reduces human suffering at the individual level and it is also a considerable issue affecting the national economy and public health. Investments in building trustful, long-lasting relationships between prisoners and the staff requires resources, but these costs are considerably lower compared to the alternative costs incurred in a situation where the prisoner fails to integrate into society after their sentence.

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References

- 1) Satapathy, S., Dang, S., Sagar, R., Dwivedi, S.N. 2022: Resilience in Children and Adolescents Survived Psychologically Traumatic Life Events: A Critical Review of Application of Resilience Assessment Tools for Clinical Referral and Intervention. *Trauma, Violence, and Abuse* 23.
- 2) Haddow, S., Taylor, E.P., Schwannauer, M. 2021: Positive peer relationships, coping and resilience in young people in alternative care: A systematic review. *Child. Youth Serv. Rev.* 122.
- 3) Kendler, K.S. et al. 2021: The causal effect of resilience on risk for drug abuse: A Swedish national instrumental variable, co-relative and propensity-score analysis. *Psychol. Med.* 51.
- 4) Joukamaa, M. et al. 2010: Health, working capacity and need for treatment of criminal sanction clients. Publications of the Criminal Sanctions Agency. Available online at: www.rikosseuraamus.fi
- 5) Carli, V. et al. 2011: A protective genetic variant for adverse environments? The role of childhood traumas and serotonin transporter gene on resilience and depressive severity in a high-risk population. *Eur. Psychiatry* 26.
- 6) Cuomo, C., Sarchiapone, M., Giannantonio, M. Di, Mancini, M., Roy, A. 2008: Aggression, impulsivity, personality traits, and childhood trauma of prisoners with substance abuse and addiction. *Am. J. Drug Alcohol Abuse* 34.
- 7) Carli, V. et al. 2011: Insomnia and suicidal behaviour in prisoners. *Psychiatry Res.* 185.
- 8) Carli, V. et al. 2014: Trait-aggressiveness and impulsivity: Role of psychological resilience and childhood trauma in a sample of male prisoners. *Nord. J. Psychiatry* 68.
- 9) Kivijärvi, A. 2022: Through crises. Youth Barometer 2022. State Youth Council & Finnish Youth Research Society/Youth Research Network & Ministry of Education and Culture, 2022.
- 10) Ripatti, K. and Manninen, M. 2022: Psychological resilience in adolescence: Applied literature review and pilot study. In *Through crises. Youth Barometer 2022.* (ed. Kivijärvi, A.) State Youth Council & Finnish Youth Research Society/Youth Research Network & Ministry of Education and Culture.
- 11) Connor, K. M. and Davidson, J.R.T.T. 2003: Development of a new Resilience scale: The Connor-Davidson Resilience scale (CD-RISC). *Depress. Anxiety* 18, 76–82.
- 12) Campbell-Sills, L., Forde, D.R., Stein, M.B. 2009: Demographic and childhood environmental predictors of resilience in a community sample. *J. Psychiatr. Res.* 43.
- 13) Tourunen, A. et al. 2021: Psychometric properties of the 10-item Connor–Davidson resilience scale among Finnish older adults. *Aging Ment. Heal.* 25.
- 14) Manninen, M., Suvisaari, J., Marola, N., Aaltonen, M. 2017: Adult criminality among former residential school adolescents. *Crim. Behav. Ment. Heal.* 27, 470–483.
- 15) Manninen, M., Koivukangas, J., Holm, M., 2022: Lindgren, M. Lifetime psychiatric diagnoses among adolescents with severe conduct problems – A register-based follow-up study. *Child Abus. Negl.* 131.
- 16) Gooding, P.A., Hurst, A., Johnson, J., Tarrrier, N. 2012: Psychological resilience in young and older adults. *Int. J. Geriatr. Psychiatry* 27.
- 17) Losoi, H. et al. 2013: Psychometric Properties of the Finnish Version of the Resilience Scale and its Short Version. *Psychol. Community Heal.*
- 18) Viitanen, P. et al. 2013: Finnish female prisoners – heavy consumers of health services. *Scand. J. Public Health* 41.
- 19) Olsson, C.A., Bond, L., Burns, J.M., Vella-Brodrick, D.A., Sawyer, S.M. 2003: Adolescent resilience: A concept analysis. *J. Adolesc.* 26.





Up to 60% of younger offenders have problems with speech production and/or comprehension related to a developmental language disorder (DLD).

Overall, Finnish prisoners performed well in the tasks related to linguistic skills in the Wattu study.

However, prisoners aged under 30 who performed below average performed significantly more poorly in producing animal words and learning word lists compared to prisoners aged over 30.

The results obtained from the individual and concise tasks do not correspond to an extensive assessment based on tools that measure several linguistic areas.

Speech-language therapy can be used to assess and train prisoners' speech, language and communication skills. Supporting communication skills allows prisoners to gain more benefits from programmes during incarceration and cope better in interactive situations.

Linguistic skills

Introduction

Various studies have shown that at least one fifth of Finnish prisoners have severe dyslexia. Up to 70% of prisoners have been found to have less severe difficulties in reading and/or writing (1, 2, 3). However, recent international research indicated that a developmental language disorder (DLD) that is more extensive than dyslexia may underlie these difficulties, also manifesting itself as difficulties in producing speech and communication (4).

Studies in speech-language pathology with a special focus on younger offenders carried out especially in Great Britain, Australia, New Zealand and Asia have shown that those who have been sentenced to imprisonment and less severe sentences have considerably poorer speech, language and communication skills compared to a control population of the same age. While 25–64% of offenders aged 11–21 have problems related to DLD in both language production and comprehension, compared to just 3–10% of other young people of the same age diagnosed with similar disorders. Younger offenders with DLD are at more than twice the risk of reoffending compared to those without DLD (4). This is also consistent with findings in a previous Finnish study, in which the poor language skills of boys in correctional schools were found to be associated with later serious violent offending (5).

Developmental language disorder slows down linguistic processing and makes it difficult to receive information that contains abstract or ambiguous concepts or meta-

phors, for example. It can make it difficult for the person to share their thoughts, feelings and experiences, and participate in discussions. In the context of criminal cases, this can mean that, during interviews, the party concerned is unable to describe the incident in a logical and chronologically understandable manner (6).

Linguistic difficulties may also manifest themselves as bluntness, yes/no answers, unconventional body language and inadequate eye contact. These in turn can create an impression of impolite behaviour, indifference and prejudice (6). This may be interpreted as a behavioural disorder and unwillingness to cooperate, instead of attributing the person's poor communication skills to DLD. Some studies have described these linguistic difficulties in connection with autism spectrum disorder (more information about the autism spectrum is available in the [ADHD and neurodivergent characteristics](#) chapter) or alexithymia. In fact, as many as 59% of younger offenders have been reported to have alexithymic traits, such as the inability to show, acknowledge, process and describe one's or other people's feelings. A link has been found between alexithymia and violent recidivism (7, 8, 9). You can read more about this topic in the [Alexithymia](#) chapter of the present report.

The above-mentioned international studies have carefully applied standardised speech-language assessment methods used to measure various functional domains to evaluate the occurrence and severity of language disorders among young offenders. These include the Comprehensive Evaluation of Language Fundamentals (CELF) and Test of Language Competence Expanded (TLC-E), which enable defining the level of linguistic skills in relation to a control population of the same age (10). In addition, linguistic skills have been evaluated using self-assessment, interviews, and various questionnaires and observation forms.

Promising research evidence has been obtained on speech-language therapy targeted at younger offenders. The aim of training was to improve the participants' linguistic skills to enable them to better express their thoughts, justify their behaviour, and understand matters related to their offence and its investigation (e.g., language used in criminal documents and interviews). An improvement in linguistic skills has been found to help facilitate younger offenders' participation in rehabilitative and social programmes and therapies, many of which are based on the participants' ability to listen to and explain their own issues to others in understandable terms and their ability to reflect their own and other people's emotions using language (6). If no such support is available, the participation of persons with a criminal background in rehabilitation focused on language and expression can be frustrating, inefficient, and expensive for everyone involved (4).

Research questions and research methods

This sub-study aimed to map out how the research participants, whose mother tongue was Finnish and with no disorders reducing their cognitive performance, were able to

complete a semantic word fluency task attached to the cognitive performance section and word-list learning test originating from the CERAD battery (11). The examination also included observations made by a research nurse whenever the participants deviated from the norm in completing the above tasks, as well as information on whether the participants had some autistic and alexithymic features that could indicate social pragmatic difficulties.

The study examined whether there is a correlation between performance and socio-demographic classification features (education, age, gender) and some background variables selected for the Wattu study (such as work ability, first-time offender status, main offence category). In the context of the socio-demographic classification features, particular attention was paid to examining the performance of younger prisoners (under the age of 30), as recent research has shown that they often have deficient linguistic skills. This chapter presents the clearest research findings that emerged from the material.

The semantic fluency task is a test of executive functioning, that can also be used to measure fast word searches from the semantic memory and the extent of one's vocabulary. This study used an animal word fluency task in which the person was asked to produce words referring to different animals for 60 seconds. The number of words produced correctly and errors (repeating the same words) that may indicate problems in the person's working memory, executive functions and ability to recall words were calculated. The participants' performance in this task was examined in more detail, as different developmental factors and syndromes impairing cognitive functions have been found to affect performance in this area (12).

This comparison used the FinHealth 2017 population study data (hereinafter FH17), whose age range was limited to correspond to the Wattu data, and in the regression model testing significance for the effects of age and education (n=5,085). The comparison was used to examine the performance of people under the age of 30 in the task, and in relation to the research population as a whole and in terms of the variables used in the study.

The word-list learning test is used to examine, for example, short-term and long-term memory, learning ability, initiating the recall process and the recall dynamics. In the task, research participants read out three word lists, each containing ten words in random order. The participant was asked to memorise the words on the word list and recite them in a free order with the aim of remembering as many words from the list as possible. A delayed recall task occurred around five minutes later, after the completion of another task, and the research participants were also asked to distinguish the words included on the word lists from new ones.

Frequencies and relative proportions were calculated from the data. The Analysis of Variance (ANOVA) and Pearson's Chi-squared test were used to calculate correlations between groups.

Results

The study was focused on the group of prisoners who had reported Finnish as their mother tongue and who did not have other conditions that impair cognitive performance (cf. above) or hearing impairment or significant speech disorders hindering normal interaction (n=470). The sample included 356 (76%) male and 114 (24%) female participants. The ages of the participants ranged from 18.5 to 71.9 years, the average age was 37 years (standard deviation, hereinafter SD, was 10.6). All participants reported being able to hear (with or without a hearing aid) normally (87%) or with minor difficulties (13%). Most of them also reported that they could speak “clearly, while listening to the other speaker, and fluently” (91%). We also wanted to keep those who reported that speaking caused them minor difficulties (8%) and those whose speech was more difficult to understand (1%) in the sample.

Linguistic fluency and word-list learning

In the animal word task measuring linguistic fluency, the participants listed, on average, 24.1 words (SD 6.5) accepted as correct, in one minute, excluding repeats of the same words, which occurred very seldom in the data. There was no statistically significant difference compared to the FH17 sample, in which, on average, the participants produced 24.5 accepted words (SD 6.7). In both datasets, there was considerable dispersion in the word fluency task performance among the participants; In the FH17 sample, the poorest-performing participant produced only four animal words during the task, while the best-performing participant listed a total of 55 words. In the Wattu IV sample, the corresponding numbers of words were 8 and 44, Figure 1.

In the word-list learning I task, the research participants of the Wattu study were able to recall an average of 5 of 10 words; in the word-list learning II and III tasks and the delayed word-list recall task, they recalled an average of 8 of 10 words. There was also quite a lot of variation in the participants’ performance in these tasks, in that those subjects with the poorest performance were only able to recall 1–3 words from the list, while those who did the best remembered all ten.

Research nurse’s observations on the performance

The research nurse recorded observations on 35 of the participants as they were completing the word fluency and word list learning tasks. The entries were mostly related to the research participants’ concentration, ADHD symptoms, linguistic performance and suspicion of dyslexia. According to the nurse’s description, a research participant with ADHD struggled with focusing and was impatient, rushed to the next part of the task, and was quick to give up:

ADHD made it more difficult to concentrate, no long attention span.

The research participant is unable to focus. Only lists the words they are unable to recall immediately.

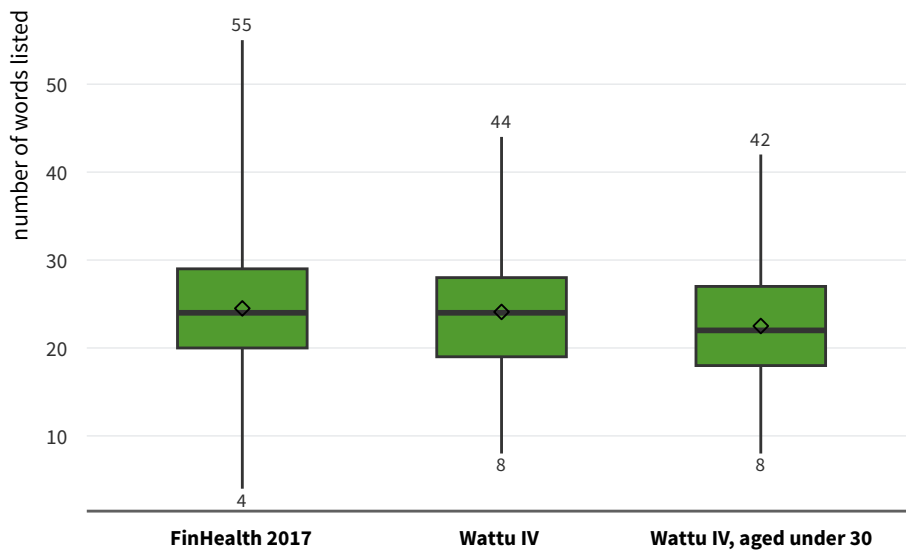


Figure 1. Variation in the numbers of listed animal words and median rates in the FinHealth2017 and Wattu datasets and in the young people included in the Wattu dataset i.e. 18–29-year-olds. The box illustrates the middle 50 per cent, the line in the box represents the median value and the extreme ends of the line represent the lowest and highest number of words produced.

The observations on linguistic performance were related to the research participants' difficulties in remembering the words, the slowness of recalling the words, and the participants' reliance on the research nurse in recalling the words. Suspicions of dyslexia emerged when the participant worked in a slow pace and had inaccuracy in reading the words, for example:

Read the words slowly.

Slow to recall the words one by one.

The research nurse also made entries regarding the participants' interactions, facial expressions, gestures and character, as well as difficulties in coping with other people:

The subject speaks a lot and does not accept comments.

The subject is taciturn and expressionless.

The most frequent observations in the entries concerned inadequate or atypical behaviour in relation to the situation, such as laughing during the test without an obvious reason, behaviour fluctuating from overzealous to absent, or a drowsy and absent-minded appearance. With some participants, the discussions were not smooth or reciprocal, and it seemed that the participant did not personally notice this. Verbose participants talked and moved a lot and were unable to stop their flow of words

or react to the research nurse's comments. Meanwhile, taciturn and inexpressive participants were devoid of expressions and gestures and answered questions briefly and in few words.

Autistic and alexithymic features as indicators of socio-pragmatic difficulties

More than one fifth of the respondents reported features that can be considered as difficulties in socio-pragmatic skills. While these are common among people with DLD, similar features are also considered to be related to alexithymia and autism spectrum disorder. These included situations in which a person has to draw conclusions based on what someone has said to them and infer other people's intentions or infer what the characters' intentions may be when reading a story. Indeed, a quarter of the respondents pointed out that they struggled with expressing their feelings in words. One fifth also found it difficult to describe their emotions. Nearly 40% of the respondents reported that they had been asked to express their feelings more, although they struggled to do so, even to their loved ones.

Links between performance and education, age, and gender

The effect of education was apparent in that the performance of those who had completed or dropped out of basic education was statistically poorer compared to those who had completed basic education and more advanced studies in the following tasks: animal word fluency ($p < 0.001$), word-list learning I ($p < 0.001$), word-list learning II ($p < 0.006$) and delayed word list recall ($p < 0.033$). Similarly, in the area of work ability, the groups differed statistically significantly from each other, in that the prisoners classified as having better work ability performed better in the word-list learning I-III ($p < 0.002$) and delayed word-list recall ($p < 0.001$) tasks. Female prisoners produced more words than male prisoners in the word-list learning I section ($p < 0.004$).

Performance of adults aged under 30

Research participants under 30 years of age ($n=141$) produced an average of 22.5 (SD 6.2) and those over 30 years of age 24.8 (SD 6.6) approved words in the animal word fluency task. The difference between the groups was statistically very significant ($p < 0.001$). In the word-list learning I-III tasks, prisoners under the age of 30 recalled on average 5.9–8.7 words (SD 1.2–1.6) and prisoners over the age of 30 on average 5.8–6.9 words (SD 1.4–1.6). In the delayed word-list recall task, the former recalled 8.1 words (SD 1.6) and the latter 8.0 words (SD 1.6). However, these differences in performance between the groups were not statistically significant.

When examining the performance of those aged under 30 whose scores in the word fluency task fell below the median, the average number of accepted words in the group was 18.1 (SD 3.5; range 8–23); in the group that scored above the median, the number was 28.1 (SD 3.7; range 24–42). The difference between the groups was statistically very significant ($p < 0.001$), as shown in Figure 1.

No statistically significant relationship was found between the word fluency performance of the younger research participants whose number of accepted words in the animal word fluency task fell below the median and their sociodemographic characteristics. Of the common background variables selected for the study, the performance was only statistically significantly related to the main offence category ($p < 0.043$). A comparison of those who performed below and above the median in the word fluency task revealed that the group of those who performed under the median had committed more theft and property offences (82%), violent crimes (57%) and other crimes (67%) but less drug offences (36%) in relation to those who performed over the median.

Conclusions

International studies have found that up to 60% of young offenders have problems with speech, language and communication and that their linguistic difficulties are often underdiagnosed (4). On average, Finnish prisoners who participated in the Watu study performed well in tasks that required fast recalling and learning word lists.

Nevertheless, the results obtained from these individual and concise tasks do not correspond to extensive international results obtained in assessments based on tools that measure several linguistic areas. In addition, the theme of the animal word fluency task selected as one of the research methods is not optimal for measuring the verbal fluency of Finns, as international comparisons have shown that Finns produce animal words more extensively compared to speakers of other languages, possibly due to our close relationship with nature.

To obtain more detailed information on the linguistic difficulties faced by young Finnish prisoners, we should also carry out assessments using broader assessment batteries, such as the soon to be published CELF5 test adapted to the Finnish language and culture (see above). A more detailed assessment of language competence could also be used to determine more reliably whether some of the autistic and alexithymic traits presented by the subjects could be explained by DLD, in which case the person would lack sufficient linguistic competence (concepts, vocabulary, sentence-level expression and comprehension) for tasks such as drawing conclusions from the speech directed at them or verbalising their feelings.

The research nurse's observations emerging from this study are, on one hand, related to challenges in linguistic performance and, on the other, to challenges in maintaining focus and concentration (ADHD features) during the tasks. Simultaneous disorders such as these are known to exist in persons with a criminal background. For further information about ADHD, see chapter [ADHD and neurodivergent characteristics](#). The research nurse's observations of the participants' difficulties in reading and listing words correctly and quickly may be related not only to dyslexia, which has been also observed in persons with a criminal background in Finnish studies (3), but also to DLD, which may also manifest itself as dyslexia. In fact, the linguistic processes underlying dyslexia in persons ending up in prison should be examined in more detail.

Socio-demographic factors have been found to be related to poor learning outcomes, differentiation of learning outcomes by region, criminal background and the risk of committing crimes. These increase the risk of social exclusion and possibly school dropout rates. In the Wattu study results, education and work ability had a statistically significant impact on the performance of linguistic tasks; those who had only completed basic education or had dropped out or whose work ability had been assessed as incomplete performed more poorly in the tasks compared to those who had progressed further in education and had full work ability.

International studies on the relationship between DLD and the susceptibility of young people to commit crimes are conflicting (4). In their review, Pekkala et al. (4) reported a Swedish and Canadian longitudinal study, indicating that children who experienced a language delay were more susceptible to committing crimes later in life compared to typically-developed children. By contrast, a Danish longitudinal study showed that participants with DLD in childhood were equally likely to commit crimes in adulthood as participants of the same age without a language impairment. However, the crimes they committed were different, Female participants with DLD were significantly more likely to be convicted of theft and property crimes, and male participants with a history of a language disorder were more likely to be convicted of sexual offences. According to a more recent study, behavioural disorders in young people with a prior language disorder may lead to sexual and violence offences. In Finland, a study by Manninen et al. (5) showed that boys in correctional schools with poor language competence were more likely to commit serious violent crimes later in their lives.

Recommendations for practice and future research

Those with DLD could benefit from speech-language therapy. Speech-language therapy can be used to improve prisoners' speech, language and communication skills. In international studies describing interventions aimed at younger offenders' language and social skills, individual speech-language therapy was used to improve the young participants' speech comprehension and production skills, especially their vocabulary, letter-sound correspondence, spelling, sentence structure, as well as narration and discussion skills (13). This topic should also be studied in Finland.

Using the means of speech-language therapy to support the speech, language and communication skills of young adult offenders with a language disorder has been found to enable them to benefit more from juvenile punishment programmes and also to cope later in everyday interactive situations. Speech language therapy interventions and the integration of a speech language therapist into the multi-professional team have been found to produce wider systemic impacts, increasing awareness of language difficulties among the professionals working with young offenders and also providing the employees with various means to support young prisoners. Similarly, the ability of employees to identify and consider young prisoners' communication difficulties has improved interactions with young offenders while also increasing their capacity to

participate in rehabilitation programmes during incarceration and cope with criminal sanctions processes.

All these measures have been assessed to prevent recidivism and promote reintegration (14). Recent international and domestic, research evidence unquestionably shows that a needs assessment for speech-language therapy should be extended to young people acting out through criminal behaviour. For the purpose of this needs assessment and as noted above, test batteries more extensive and more detailed than the CERAD used in this study and adapted to the given culture should be introduced. As the effectiveness of speech-language therapy is also based on sharing information about communication disorders and guidance, the staff working with prisoners should be provided with training on communication difficulties and how to support them.

In Great Britain, the Royal College of Speech and Language Therapists (RCSLT), together with speech-language therapists specialised in criminal law, has developed a free online programme, “The Box: Communication Help in the Justice System”, to raise awareness of the speech, language and communication difficulties among those employed in the industry (15). The programme helps identify and understand how difficulties in speech, language and communication can affect clients who have ended up in criminal proceedings and how they can be supported.

The completion of “The Box” has been found to make it easier for staff to work, because awareness of these issues reduces work-related constraints and improves interaction with the clients. It also helps in dealing with challenging behaviour and performing tasks related to clients more effectively. The benefits have been reflected in the clients as being understood better, feeling less frustrated and receiving the necessary support. From a societal point of view, the programme has been considered to promote effective jurisdiction and reduce conflicts between the parties due to difficulties in speech, language and communication during the judicial process. “The Box” is also used in Australia, New Zealand, the United States, Canada, India, Egypt, Singapore and Kenya. In the future, the programme should also be introduced in Finland.

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References

- 1) Gullman, M., Sunimento, K., Poutala, P. 2011: Oppimisvaikeuksista vapaaksi -hankkeen loppuraportti. Monisteita 3/2011 Kriminaalihuollon tukisäätiö, Helsinki.
- 2) Joukamaa, M. and working group 2010: Health, working capacity and need for treatment of criminal sanction clients. Report on basic results. Publications by the Criminal Sanctions Agency 1/2010. Criminal Sanctions Agency, Helsinki.
- 3) Tuominen, T. 2018: Neurocognitive deficits, academic difficulties and substance dependence among Finnish offenders: Connections to recidivism and implications for rehabilitation. Publications by the University of Turku Series B part 453, University of Turku, Turku. <https://urn.fi/URN:ISBN:978-951-29-7202-9>
- 4) Pekkala, S., Urrio, L., Rainò, P. 2022: Rikostaustaisten nuorten puheen, kielen ja kommunikaation vaikeudet. Sosiaalilääketieteellinen Aikakauslehti, 59/2022, 294–312. <https://doi.org/10.23990/sa.102603>
- 5) Manninen, M., Lindgren, M., Huttunen, M., Ebeling, H., Moilanen, I., Kalska, H., Suvisaari, J., Therman, S. 2013: Low verbal ability predicts later violence in adolescent boys with serious conduct problems, Nordic Journal of Psychiatry 67/2013, 289–297. <https://doi.org/10.3109/08039488.2012.738245>
- 6) Pekkala, S. ja Rainò, P. 2022: Rikostaustaisten nuorten kielellisten ja sosiaalisten taitojen tukeminen. Sosiaalilääketieteellinen Aikakauslehti 59/2022, 409–428. doi: <https://doi.org/10.23990/sa.103346>
- 7) Snow, P., Woodward, M., Mathis, M., Powell, M. 2016: Language functioning, mental health and alexithymia in incarcerated young offenders. International Journal of Speech-Language Pathology, 18/2016, 21-31. doi.org/10.3109/17549507.2015.1081291
- 8) Winstanley, M., Webb R., Conti-Ramsden, G. 2019: Psycholinguistic and socioemotional characteristics of young offenders: Do language abilities and gender matter? Legal and Criminological Psychology 24/2019 24, 195–214. doi: 10.1111/lcrp.12150
- 9) Leshem, R., van Lieshout, P., Ben-David, S., Ben-David, B. 2019: Does emotion matter? The role of alexithymia in a violent recidivism: A systematic literature review. Criminal Behavior and Mental Health 29/2019, 94–110. doi:10.1002/cbm2110
- 10) Wiig, E., Semel, E., Secord, W. 2013: Clinical Evaluation of Language Fundamentals. Fifth edition (CELF-5). Pearson, Bloomington, MN: NCS; 2013
- 11) Pulliainen, V., Hokkanen, L., Salo, J. & Hänninen, T. 2010 [1999]: CERAD. Cognitive assessment battery. Manual & research tools. Helsinki: Finnish Alzheimer’s research association.
- 12) Mitrushina, M., Boone, K., Razani, J., D’Ella, L. 2005: Handbook of Normative Data for Neuropsychological Assessment. Second edition. Oxford University Press, New York
- 13) Swain, N., Eadie, P., Snow, P. 2020: Speech and language therapy for adolescents in youth justice: A series of empirical case-studies. International Journal of Language and Communication Disorders, 55/2020, 458–479. <https://doi.org/10.1111/1460-6984.12529>
- 14) Winstanley, M., Webb, R., Conti-Ramsden, G. 2017: More or less likely to offend? Young adults with a history of identified developmental language disorders. International Journal of Language & Communication Disorders 53/2018, 256–270. doi: 10.1111/1460-6984.12339
- 15) RCSLT. [2021.] The Box learning journey. <https://www.rcsltcpd.org.uk/>



**Liikkuminen ja oleskelu
alueella ilman
asianmukaista lupaa on
KIELLETTY**

**Kiellon rikkomisesta
voidaan tuomita enintään
viiteenkymmeneen
päiväsakkoon
(poliisilaki 52 §)**



Prisoners have less trust in other people than the rest of the population. Prisoners who have been incarcerated longer have less trust than first-time offenders.

Prisoners are less satisfied with life than the rest of the population.

Loneliness varies among prisoners. Female prisoners are less lonely than men.

Prisoners are more likely to receive help and support from informal parties than from official service providers. Women feel more often supported by prison workers than men.

Upon their release, prisoners face an uncertain situation from the perspectives of housing, livelihood and interpersonal relationships.

Loneliness and social relationships

Introduction

The social relationships and subjective well-being of Finnish prisoners have been studied relatively little with quantitative data. An exception to this is the recently completed VASORA study, survey of 433 prisoners which examined the everyday life and quality of life in 11 prisons (1). Among other things, the study analysed loneliness (2), trust (3) and satisfaction with life (4) in different prison populations. These analyses serve as the basis for the findings reported here.

Human interaction is a fundamental need (5, 6), and loneliness reflects gaps in satisfying the need. Prolonged loneliness reduces both mental and physical well-being, health, and the ability to integrate into communities. It also increases the risk of exclusion, self-destructive behaviour, violence, and radicalisation (7, 8, 9, 10). About one in six prisoners in Finland feel lonely during imprisonment (2). Based on previous research, different forms of social 'outsiderhood', such as ostracism (i.e., excluding an individual from a group), solitude, as well as social and emotional loneliness, are also extensively linked to a person's health and well-being (11). The power of restricting interactions is illustrated by the fact that solitary confinement is one of the most severe means of punishment (12).

Trust is built in interaction with other people *horizontally* or with organisations *vertically* (13, 14). Trust between people can be divided qualitatively; trust towards familiar people may differ from that towards unfamiliar people. In this case, we refer to

particularised and generalised trust (3). The level of generalised trust is around seven on a scale of ten (1–10) among the general population, but in a previous survey on the trust of prisoners, it was about five. On a practical level, this result means that prisoners have a relatively small number of other prisoners they trust and one in four have no such acquaintances in prison (3).

Satisfaction with life brings together a person's idea of whether life is what they have hoped it would be (15). While satisfaction reflects the fulfilment of needs, it also refers to the realisation of desires that are separate from needs. Moreover, satisfaction does not merely involve the cognitive reflection on a matter, but it is also equally regulated by mood (16). It may also be impossible to distinguish between these two approaches (17). Based on a relatively well-established view, genes regulate a large share of the variation in satisfaction, but approximately half of it is explained by the individual's behaviour in relation to their environment (18). Everyday and its effortless flow play an important role in wellbeing. Prisoners' everyday life can be presumed to be relatively standard and predetermined, but at the admission stage, prisoners, particularly first-timers, face many new challenges, which reduces their satisfaction (19, 20). Life satisfaction among prisoners has been found to be on average 6.2, which is relatively higher than in previous studies (4).

Research questions and research methods

This sub-study analysed the loneliness experienced by prisoners, their trust in other prisoners, and satisfaction with life. These phenomena have been studied extensively in the general population, but less so in prison populations. The questions related to the theme of loneliness in the questionnaire used in the Wattu study are well-known and form widely used indicators.

Loneliness is measured using four statements: 1) "I feel like I am part of a group of friends," 2) "I can find company when I need it or I want it," 3) "I have a friend who I can share anything with," and 4) "I am lonely." The first two statements measure social loneliness and the second two emotional loneliness. When forming the sum variable, the response categories of the first three statements were reversed. The response categories were "Never", "Rarely", "Sometimes", "Frequently" and "Always" resulting in increasing scale from 1 to 5. In other words, a higher score reflects greater loneliness.

The respondents were asked about support received from other parties with the question "Who or which of the following parties have you received help and support from in the past two months?" The listed sources of support included "Family (spouse, children, parents)", "Relatives", "Friends outside of prison", "Friends in prison", "Prison workers", "Social worker", "Substance abuse services worker", "Parish worker" and "Optional". The response alternatives were "Not at all", "A little help and support", "A moderate amount of help and support", "A lot of help and support" and "Does not apply".

Trust was investigated with one frequently used question, which was modified to suit the prison environment: “Do you feel like you can trust other prisoners, or is it so that you should keep your guard up with other prisoners? Give your opinion on a scale of 0 to 10, where 0 means that no other prisoners can be trusted at all, and 10 that most prisoners can be trusted.”

General satisfaction with life was measured by the question “How dissatisfied or satisfied are you currently with your life as a whole?” The response options ranged from “dissatisfied” to “satisfied” on a scale of zero to ten.

The period following the release from prison was surveyed by asking the prisoners for an assessment of whether they expect to have permanent housing, a permanent relationship, sufficient income, a job or study place or a support person after their release. The response alternatives were “Yes”, “No” and “No information”.

The level of each variable was compared with the data obtained from the general population and the results of the previously completed VASORA study. In addition, we examined how the outcomes differed among sub-populations by ANOVA and Pearson’s Chi-squared test.

Results

Loneliness

On a scale of 4 to 20, prisoners estimated their loneliness as 9.5. In the VASORA data collection carried out earlier, the average score was 9.8. There were hardly any differences between the genders and age groups. By contrast, there was a difference in the experiences of loneliness based on the grounds of sentence, as shown in Table 4. Those convicted of property or theft offences scored 10.1, while those convicted of drug offences scored 8.4 ($p < 0.002$). In other words, those convicted of property or theft crimes experienced loneliness slightly more often than those convicted of drug offences.

An assessment by the study nurse on the prisoner’s ability to work was linked to the prisoner’s self-rated loneliness. Prisoners with reduced work ability felt lonely (10.1) more often than those with work ability (8.9) ($p < 0.001$). The level of loneliness was also higher among the prisoners willing to set health targets in their sentence plan.

A closer examination of the experiences of loneliness revealed a difference between men and women regarding whether they had a reliable friend who they could confide in if necessary, Table 1. On a scale of 1 to 5 (never -> always), women scored 3.9 and men scored 3.7 ($p < 0.05$). Female prisoners had more frequent opportunities than male prisoners to discuss anything with a trusted friend.

Trust

On a scale of 0 to 10, prisoners estimated their level of trust as 4.5. In other words, prisoners more often felt mistrust than trust towards one another. Trust among prisoners

Table 1. Receiving support from other parties, female and male prisoners (%).

	men n=361 (%)	women n=110 (%)	in total n=471 (%)	p-value
When you are released from this sentence, will you have a support person lined up?				0.05
no/ldk	228 (63)	58 (53)	286 (61)	
yes	133 (37)	52 (47)	185 (39)	
Who or which of the following parties have you received help and support from in the past two months?				
Prison worker				0.002
not at all	69 (19)	14 (13)	83 (18)	
little help and support	126 (35)	24 (22)	150 (32)	
moderate help and support	107 (30)	39 (35)	146 (31)	
a lot of help and support	51 (14)	31 (28)	82 (17)	
does not concern me	8 (2)	2 (2)	10 (2)	
Social worker				0.001
not at all	134 (37)	28 (25)	162 (34)	
little help and support	76 (21)	19 (17)	95 (20)	
moderate help and support	77 (21)	37 (34)	114 (24)	
a lot of help and support	32 (9)	21 (19)	53 (11)	
does not concern me	42 (12)	5 (5)	47 (10)	
Substance abuse worker				0.016
not at all	137 (38)	26 (24)	163 (35)	
little help and support	57 (16)	16 (15)	73 (15)	
moderate help and support	56 (16)	24 (22)	80 (17)	
a lot of help and support	33 (9)	19 (17)	52 (11)	
does not concern me	78 (22)	25 (23)	103 (22)	
Parish worker				0.001
not at all	192 (53)	38 (35)	230 (49)	
little help and support	29 (8)	15 (14)	44 (9)	
moderate help and support	23 (6)	14 (13)	37 (8)	
a lot of help and support	18 (5)	16 (15)	34 (7)	
does not concern me	99 (27)	27 (25)	126 (27)	
Volunteer				0.003
not at all	207 (57)	49 (45)	256 (54)	
little help and support	17 (5)	7 (6)	24 (5)	
moderate help and support	13 (4)	4 (4)	17 (4)	
a lot of help and support	8 (2)	11 (10)	19 (4)	
does not concern me	116 (32)	39 (35)	155 (33)	
Please indicate how often the following is true for you.				
I have a friend who I can tell anything to.				0.046
mean	3.7	3.9	3.7	
standard deviation	1.4	1.3	1.4	

has been previously observed to be at a level of 4.9 (3). Both figures are clearly lower than the corresponding rate among the population, 7.3.

Later in this chapter, Tables 5 and 8 show results indicating trust during the imprisonment period. The duration of the sentence was reflected in trust in that the level of trust was clearly lower (4.2) among those sentenced for more than two years com-

pared to those sentenced for a shorter period (4.9) ($p < 0.004$). A similar result between trust and the duration of the sentence was also visible among first-timers. First-timers sentenced for less than one year had a higher level of trust (4.7) than those sentenced for a year or longer (3.7) ($p < 0.02$).

Experiences of loneliness and trust are also related to interactions with other people and support received from them. Prisoners receive help and support from many different sources. Based on the responses, a substantial amount of support was received from family (59%), relatives (29%) and friends outside prison (27%). Help received from friends in prison (20%) and prison workers (17%) was less common. The prisoners received even less help from social workers (11%), substance abuse workers (11%), or parish workers (7%). Support from volunteers (4%) was particularly rare.

It appears that social support is strongly linked to the gender and age of the prisoner. Overall, receiving help from various parties was more frequently reported by women than men, Table 1. The biggest difference was related to the help and support received from the prison staff. Of female prisoners, 28 per cent reported receiving a lot of help and support from prison workers, while the corresponding share among men was half as much (14%) ($p < 0.002$). The same trend was also apparent in social contexts: social services (women 19% and men 9%, $p < 0.001$), substance abuse services (women 17% and men 9%, $p < 0.01$) and parish (women 15% and men 5%, $p < 0.001$) workers and volunteers (women 10% and men 2%, $p < 0.003$).

The link between age and the help and support received was not as straightforward as with gender, see Table 2 on the following page. Receiving a lot of help and support from the family was particularly common among young prisoners aged under 30 (68%) and prisoners aged 30 and 47 (60%), while older prisoners received less help and support from them (43%) ($p < 0.001$). The same inverse relationship between age and support was also evident in help received from relatives (34% -> 28% -> 23%, $p < 0.007$) and friends in prison (28% -> 18% -> 13%, $p < 0.02$). Meanwhile, there was an increase in the help and support received from parish employees related to older age in contrast to the above unofficial sources of support. Six to seven per cent of prisoners under 47 years of age reported having received a lot of help and support from parishes, compared to 13 per cent of those over 47 years of age ($p < 0.05$).

Satisfaction with life

On a scale of 0 to 10, prisoners estimated their satisfaction of life as 5.8. This is slightly lower than the score of 6.2 previously observed in prisoners (4). However, both scores are clearly lower compared to the population average by nearly eight points (21). Satisfaction with life was lower ($p < 0.008$) for those who were willing to set health targets in their personal sentence plan. The result is logical in that having problems encourages making a change.

According to prisoners' self-assessment, they faced an uncertain situation at the time of release. Four out of ten (42%) estimated that they would have a permanent residence upon release from prison. More than one in two had no housing lined up after their release or were uncertain about it. Upon release, 31 per cent of prisoners had a permanent

Table 2. Trust and receiving support from others by age group (%).

	age group			in total n=471 (%)	p-value
	18-29 years n=137 (%)	30-47 years n=250 (%)	>47 years n=84 (%)		
Do you feel like you can trust other prisoners, or is it so that you should keep your guard up with other prisoners?					0.0371
mean	5	4,4	4,1	4,5	
standard deviation	2,6	2,6	2,7	2,6	
Who or which of the following parties have you received help and support from in the past two months?					0.001
Family (spouse, children, parents)					
not at all	7 (5)	21 (8)	16 (19)	44 (9)	
little help and support	13 (9)	20 (8)	3 (4)	36 (8)	
moderate help and support	21 (15)	57 (23)	20 (24)	98 (21)	
a lot of help and support	93 (68)	150 (60)	36 (43)	279 (59)	
does not concern me	3 (2)	2 (1)	9 (11)	14 (3)	
Relatives					
not at all	40 (29)	82 (33)	32 (38)	154 (33)	0.007
little help and support	22 (16)	40 (16)	7 (8)	69 (15)	
moderate help and support	23 (17)	48 (19)	14 (17)	85 (18)	
a lot of help and support	47 (34)	71 (28)	19 (23)	137 (29)	
does not concern me	5 (4)	9 (4)	12 (14)	26 (6)	
Friends in prison					
not at all	12 (9)	32 (13)	16 (19)	60 (13)	0.019
little help and support	38 (28)	91 (36)	26 (31)	155 (33)	
moderate help and support	39 (28)	75 (30)	24 (29)	138 (29)	
a lot of help and support	39 (28)	44 (18)	11 (13)	94 (20)	
does not concern me	9 (7)	8 (3)	7 (8)	24 (5)	
Substance abuse worker					
not at all	48 (35)	81 (32)	34 (40)	163 (35)	0.02
little help and support	19 (14)	50 (20)	4 (5)	73 (15)	
moderate help and support	27 (20)	43 (17)	10 (12)	80 (17)	
a lot of help and support	14 (10)	29 (12)	9 (11)	52 (11)	
does not concern me	29 (21)	47 (19)	27 (32)	103 (22)	
Parish worker					
not at all	67 (49)	120 (48)	43 (51)	230 (49)	0.046
little help and support	12 (9)	29 (12)	3 (4)	44 (9)	
moderate help and support	6 (4)	26 (10)	5 (6)	37 (8)	
a lot of help and support	9 (7)	14 (6)	11 (13)	34 (7)	
does not concern me	43 (31)	61 (24)	22 (26)	126 (27)	

relationship, 26 per cent a steady income, and 27 per cent a job or study place lined up for them. Of the prisoners, 39 per cent has a support person after release.

The prisoners whose work ability was reduced based on the study nurse’s assessment were less likely to have a job or study place (19%) lined up after their release compared to the group whose work ability had been assessed as normal (34%) (p<0.001).

Table 3. Work or study place lined up after release according to previous education (%).

	Education			
	at maximum basic education n=251 (%)	more than basic education n=220 (%)	in total n=471 (%)	
When you are released from this sentence, will you have a job or study place lined up?				0.015
no/idk	194 (77)	148 (67)	342 (73)	
yes	57 (23)	72 (33)	129 (27)	

Table 4. Loneliness and access to permanent housing and sufficient income upon release by main offence category (%).

	main offence category				in total n=469 (%)	
	drug n=109 (%)	violent n=240 (%)	theft/ property n=53 (%)	other n=67 (%)		
Do you ever feel lonely?						0.004
mean	2.4	2.8	2.9	3	2.8	
standard deviation	1	1	0.9	1.1	1	
Loneliness sum score						0.004
mean	8.4	9.7	10.1	9.9	9.4	
standard deviation	3.3	3.4	3.8	2.8	3.4	
When you are released from this sentence, will you have a permanent dwelling lined up?						0.024
no/idk	56 (51)	156 (65)	24 (45)	35 (52)	272 (58)	
yes	53 (49)	84 (35)	29 (55)	32 (48)	199 (42)	
Sufficient income						0.043
no/idk	71 (65)	189 (79)	35 (66)	51 (76)	348 (74)	
yes	38 (35)	51 (21)	18 (34)	16 (24)	123 (26)	

Table 5. Trust and access to housing upon release according to the length of the sentence (%).

	Duration of sentence over 2 years			
	no n=217 (%)	yes n=248 (%)	in total n=465 (%)	
Do you feel like you can trust other prisoners, or is it so that you should keep your guard up with other prisoners?				0.004
mean	4.9	4.2	4.5	
standard deviation	2.4	2.7	2.6	
When you are released from this sentence, will you have a permanent dwelling lined up?				0.003
no/idk	109 (50)	159 (64)	268 (58)	
yes	108 (50)	89 (36)	197 (42)	

Similarly, those who had completed a higher qualification than basic education (33%) were more likely to have a job or study place lined up after release compared to those who had completed basic education at most (23%) ($p < 0.02$), Table 3. Those in an open prison were also more likely to have secured their post-imprisonment activities (43%) compared to those in a closed institution (24%), Table 7.

Table 6. Access to housing upon release based on the number of days of imprisonment during lifetime (%).

	Total days of imprisonment during lifetime >2 years, incapacitation			
	no n=163 (%)	yes n=308 (%)	in total n=471 (%)	
When you are released from this sentence, will you have a permanent dwelling lined up?				0.006
no/idk	80 (49)	192 (62)	272 (58)	
yes	83 (51)	116 (38)	199 (42)	

Table 7. Access to housing, income and a job and study place upon release per prison type (%).

	placement prison type			
	open prison n=84 (%)	closed prison n=387 (%)	in total n=471 (%)	
When you are released from this sentence, will you have a permanent dwelling lined up?				0.005
no/idk	37 (44)	235 (61)	272 (58)	
yes	47 (56)	152 (39)	199 (42)	
sufficient income?				0.001
no/idk	50 (60)	298 (77)	348 (74)	
yes	34 (40)	89 (23)	123 (26)	
a job or a study place?				0.001
no/idk	48 (57)	294 (76)	342 (73)	
yes	36 (43)	93 (24)	129 (27)	

Table 8. Trust among first-timers serving a sentence of less and more than a year (%).

	Duration of imprisonment in the group of first-timers			
	less than a year n=98	more than a year n=79	in total n=177	
Do you feel like you can trust other prisoners, or is it so that you should keep your guard up with other prisoners?				0.016
mean	4.7	3.7	4.2	
standard deviation	2.5	2.8	2.7	

Housing is one of the foundations of life, a prerequisite for building wellbeing. However, having access to housing is not self-evident for prisoners upon their release, Tables 4–7. Having permanent dwellings lined up upon release was most common among prisoners in open prison (56%), those convicted of theft (55%), those sentenced for less than two years (50%) and those who had been in prison for less than two years (51%). Similarly, having permanent housing upon release was less likely among prisoners convicted of violent crimes (35%), those who had been in prison for more than two years during their lifetime (38%), prisoners with an over-two-year sentence (36%) and prisoners who had spent some of their sentences in a closed institution (39%). The presented differences were statistically significant (p.<0.003–0.02).

Tables 4 and 7 show that having sufficient income lined up after release is most common for those prisoners who had been in an open prison (40%) or convicted of a

drug offence (35%). A sufficient income post-release was less common among those sentenced to a closed institution (23%) and those convicted of violent crimes (21%). These differences are statistically significant ($p < 0.001-0.05$).

There was no clear link between first-timer status and the variables examined. Based on previous observations (4), first-timers' satisfaction with life is lower in the early months of their sentence compared to those with longer imprisonment. However, the result could not be verified due to the size of the current dataset. A similar interpretation can nonetheless also be made based on the Wattu data: Satisfaction with life and trust was lower among first-timers compared to those with prior imprisonment experience. The differences were consistent, but not statistically significant. On the other hand, Table 8 shows that first-timers who had been in prison for less than a year had a higher level of trust in other prisoners compared to those first-timers who had been imprisoned for longer ($p < 0.02$).

Conclusions

Social relationships vary among prisoners and are linked to the experience of loneliness, trust and satisfaction. Prisoners' trust in their fellow prisoners, opportunity for trusting relationships and satisfaction with life were clearly lower than in the rest of the population. Similarly, prisoners had varying experiences of how to get help and support inside and outside the prison. Time after release appeared uncertain because there was no certainty regarding the basic building blocks of everyday life – housing, relationships or income.

The prisoners' (criminal) activities prior to their imprisonment were reflected in the experiences of loneliness in the prison. Those convicted of property or theft crimes experienced loneliness slightly more often than those convicted of drug offences. Similarly, prisoners whose work ability was assessed to be impaired felt lonely more often than others. The experience of loneliness seems to be particularly related to whether the prisoner has someone they can confide in. Women and younger prisoners were more likely to have such a person. More information on prisoners' experiences of the importance of discussing with their peers is available in the chapter [Means to reduce feelings of aggression](#) in the present report.

The prisoners serving long sentences had less trust in other prisoners than others. Satisfaction with life and trust was lower among first-timers compared to those with prior imprisonment experience. For first-timers, the contrast between prison and the outside world is greater than for those prisoners serving their second or further sentences. However, first-timers who had been convicted for less than a year had a higher level of trust in other prisoners than those who had been in prison for longer.

Prisoners, especially women, felt that they received help and support in many different ways, most often from informal parties, such as their family, relatives or friends outside prison. The youngest prisoners, in particular, received more help from families. However, it was very common for prisoners to feel that they received no help or support from anyone. While prisoners were less frequently helped by official employ-

ees or volunteers, almost a third of women felt they had received a lot of help from prison workers.

It was rare for prisoners with a longer history in prison convicted of violent crimes and serving time in a closed institution to have housing lined up for them upon release. They were also less likely than others to estimate their post-imprisonment income as sufficient. Those in open prison and the group of those convicted of drug-related crimes appeared to have slightly less uncertain prospects compared to other groups.

Recommendations for practice and future research

The results give rise to the following questions: For example, how could we strengthen the maintenance of such relationships that reduce the experience of loneliness, increase trust in other people and improve satisfaction with life? These factors can have an impact during imprisonment, but they are particularly important as the release from prison becomes imminent and prisoners reintegrate into society.

Why are experiences of receiving help and support from others, even from prison workers, clearly more common among women than men? Is this due to the way women regard help and support, or is the available help and support somehow different for men and women?

First-timers and prisoners at the beginning of the imprisonment appear to be in a situation where the available help and support could be most beneficial. Do the parties providing official support make sufficient use of this special time?

The release of prisoners and their placement outside the prison is a phase marked by insecurity and uncertainty. This raises a question of how sufficient the services for reintegration into society are. The question of safeguarding housing particularly emerges as it lays the foundation on which to build the rest of one's life.

The prisoner study dataset provides an opportunity for multidisciplinary studies to examine the connection of factors such as health, work ability, cognitive skills and other factors to social relationships and receiving help in a population group that has ended up in prison at some point in their lives. In the best-case scenario, a better understanding of the sense of inclusion helps prevent imprisonment.

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References

- 1) Kainulainen, S. and Saari, J. (Eds.) 2021: Suomalainen vanki. Arjen rakenteet ja elämänlaatu vankilassa. Vastapaino.
- 2) Junttila, Niina 2021: Vankien ostrakismi, yksinäisyys ja halu olla yksin. In Sakari Kainulainen ja Juho Saari (Eds.) Suomalainen vanki. Arjen rakenteet ja elämänlaatu vankilassa. Vastapaino.
- 3) Kouvo, A. and Saari, J. 2021: Vankien luottamussuhteet. In Sakari Kainulainen ja Juho Saari (Eds.) Suomalainen vanki. Arjen rakenteet ja elämänlaatu vankilassa. Vastapaino.
- 4) Kainulainen, Sakari 2021: Vankien elämään tyytyväisyys. In Sakari Kainulainen ja Juho Saari (Eds.) Suomalainen vanki. Arjen rakenteet ja elämänlaatu vankilassa. Vastapaino.
- 5) Weiss, Robert 1973: Loneliness: the experience of emotional and social isolation. Massachusetts: The MIT Press.
- 6) Baumeister, R.F. ja Leary, M.R. 1995: The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497–529.
- 7) Cacioppo, J., Cacioppo, S., Capitano, J.P., Cole, S.W. 2015: The neuroendocrinology of social isolation. *Annual Review of Psychology*, 66, 733–767.
- 8) Qualter, P., Vanhalst, J., Harris, R., Van Roekel, E., Lodder, G., Bangee, M., Maes, M., Verhagen, M. 2015: Loneliness Across the Life Span. *Perspectives on Psychological Science*, 10(2), 250–264.
- 9) Baumeister, R.F., DeWall, C.N., Ciarocco, N.J. Twenge, J.M. 2005: Social Exclusion Impairs Self-Regulation. *Journal of Personality and Social Psychology*, 88(4), 589–604.
- 10) Williams, K.D. 2007: Ostracism. *Annual Review of Psychology*, 58(1), 425–452.
- 11) Right to Belong: Tackling loneliness and ostracism during childhood and youth (R-to-B) Situational picture report 2022. Available online at www.aka.fi.
- 12) Saari, J. ja Kainulainen, S. 2021: Johdanto: vankila sosiaalisena kenttänä. Vankien ostrakismi, yksinäisyys ja halu olla yksin. In Sakari Kainulainen ja Juho Saari (Eds.) Suomalainen vanki. Arjen rakenteet ja elämänlaatu vankilassa. Vastapaino.
- 13) Putnam, Robert D. 2000: *Bowling alone: the collapse and revival of American community*. New York: Simon & Schuster.
- 14) Rothstein, Bo 2005: *Social traps and the problem of trust*. Cambridge: Cambridge University Press.
- 15) Veenhoven, R. 2009: How do we assess how happy we are? Tenets, implications and tenability of three theories. In: Dutt A.K. ja Radcliff B. (Eds.): *Happiness, Economics and Politics: Towards a multi-disciplinary approach*, ss. 45–69. Celtenham: Edward Elgar Publishers.
- 16) Kainulainen, S. 2022: Concurrent Assessments of Individuals' Affect and Contentment and the Correlation of these Estimates to Overall Happiness at Specific Moments. *Applied Research Quality Life* 17, 3151–3174. <https://doi.org/10.1007/s11482-022-10057-9>
- 17) Ott, J. 2020: Back to Overall Happiness: It Exists!. In: *Beyond Economics*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-56600-5_5
- 18) Bartels, M., Nes, R.B., Armitage, J.M., van de Weijer, M.P., Haworth, C.M.A. 2022: Exploring the Biological Basis for Happiness. In: Helliwell, J. F., Layard, R., Sachs, J. D., De Neve, J.-E., Akinin, L. B., Wang, S. (Toim.). 2022: *World Happiness Report 2022*. New York: Sustainable Development Solutions Network.
- 19) MacKenzie, D.L. ja Goodstein, L. 1985: Long-term incarceration impacts and characteristics of long-term offenders: an empirical analysis. *Criminal Justice and Behavior* 12:4, 395–414.
- 20) Bronsteen, John, Buccafusco, Cristopher, Masur, Jonathan 2009: Happiness and Punishment. *The University of Chicago Law Review*, 76(3), 1037–1082.
- 21) Helliwell, J. F., Layard, R., Sachs, J. D., Akinin, L. B., De Neve, J.-E., Wang, S. (Toim.) 2023: *World Happiness Report 2023* (11. painos). Sustainable Development Solutions Network.



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The experience of social inclusion among prisoners was clearly weaker compared to the general adult population. However, the prisoners' experience of social inclusion was somewhat stronger than expected.

Female prisoners had a stronger experience of social inclusion compared to male prisoners.

There were no statistically significant differences in the level of the experience of social inclusion when examining prison-specific background variables.

Work ability emerged as most strongly associated with the experience of social inclusion.

Future studies should examine how prisoners' health and particularly mental health and functional capacity and work ability are associated with their experience of social inclusion.

The experience of social inclusion

Introduction

In this chapter, prisoners' experiences of social inclusion is examined based on a theoretical framework (1), in which a person's capabilities and opportunities to control resources and match them to their needs that vary by culture and circumstances (2) are essential to social inclusion on the individual level. In other words, social inclusion refers to tangible possibilities for utilizing material and immaterial resources (1) and for seizing opportunities to participate and being an active agent (3, 4).

In addition to quantifiable resources, social inclusion is straightforwardly related to experienced wellbeing (5, 6, 1). In this context, we refer to the experience of social inclusion, which is built upon the reciprocity of social relationships, for example, being heard, joining and belonging to a group or community that the individual perceives as meaningful, and doing things together (7). In the capability approach, Amartya Sen emphasises the freedom to choose from different available possibilities the ones the individual wants to pursue (3). As the capability approach is a central foundation for the theoretical framework, a person's freedom to choose social relationships and activities they perceive as meaningful are essential to the experience of social inclusion (8).

Previous studies show that the experience of social inclusion is empirically strongly associated with wellbeing (6, 9). The scientifically validated Experiences of Social Inclusion Scale (ESIS) measures respondents' experience of social inclusion. It allows, for

example examination of differences between population groups, and thus provides deeper understanding of the experience of social inclusion. The ESIS consists of ten statements on the perceived manageability of life, experiences of belonging and meaningfulness, and opportunities for participation (6). The response options to the statements form a continuum with one end representing a poor experience, and the other, a strong experience of inclusion.

The ESIS is based on a comprehensive theoretical framework on social inclusion that integrates different scientific disciplines and includes both the *capability approach* (3, 4) as well as theories and findings from behavioural, social and administrative sciences. The experience of social inclusion is individual in nature, but it is constructed in different human relationships and communities. For this reason, the framework integrates disciplines focused on the individual (such as psychology), disciplines examining group behaviour (such as social psychology), and disciplines with a broader societal focus (social sciences such as social policy, sociology and social philosophy) as well as administrative and management sciences (1). Although the experience of social inclusion manifests on the individual level, it relates above all to characteristics of the community and society surrounding the individual, particularly to how resources, recognition and opportunities for making one's voice heard in decision-making are distributed and provided to individuals and different population groups (10).

The first findings on the experience of social inclusion were obtained from the Social Inclusion and Wellbeing of People Outside the Working Life -Study in 2017. Results showed that the wellbeing of the respondents was poorer compared to the general population. For example, the share of people experiencing severe mental strain was many times higher compared to the general adult population (11). At the time, there was no data on the experience of social inclusion among specific population groups, but analyses of the FinSote 2019 data later confirmed the assumption that those who are involuntarily outside of work life have weaker experiences of social inclusion than the rest of the population. It could be concluded that differences in the experience of social inclusion are important for understanding processes increasing inequality because the experience of social inclusion was associated with both living conditions and social status, as well as wellbeing, health, functional capacity and work ability. Differences in the experience of social inclusion help to identify population groups that have been exposed to the aggravation and accumulation of disadvantage (9). However, there are no previous studies particularly on the experience of social inclusion among prisoners, so the present study fills this gap and adds important knowledge on the association between the experience of social inclusion and inequality.

Another way to examine social inclusion is provided by the Osallisuuden kehät (Circles of Inclusion) tool. It identifies three partly overlapping circles: 1) meaningful social relationships (*being part of*), 2) institutions of encountering (*having part of*) and 3) opportunities for participation in society (*taking part in*) (5). It can be assumed that prisoners' circles of inclusion are more limited than the adult population on average, as prison poses restrictions to opportunities. The prisoners' autonomy and possibilities for self-determination are inherently limited, as imprisonment refers to a sentence

involving deprivation of liberty (i.e., a loss of freedom). In this sense, imprisonment impairs prisoners' experiences of meaningfulness, belonging, and manageability and perceptions of their own agency. Opportunities to engage in social relationships are restricted, and prisoners do not have complete freedom in choosing their relationships. This may undermine the perceived quality of social relations and impair the experience of gaining or even deserving other people's trust.

However, on the other hand, life in prison may become more manageable than in the surrounding society, especially for those serving long and multiple prison sentences. In this case, the prison with all its services may increase social inclusion. Furthermore, prisoners' reintegration to and membership in society is often fragile. During the last decades, guided measures to increase prisoners' social inclusion have been developed, including, for example, the Porttiteatteri theatre created together with prisoners.

Research questions and methods

The ESIS has not been previously used in prisoner studies. The research questions are thus descriptive: What is the level of experience of social inclusion among prisoners compared to the general adult population in Finland? Does the experience of social inclusion differ according to the selected background variables?

As argued above, on the conceptual level, the experience of social inclusion of prisoners can be assumed to be weaker compared to the general adult population. Therefore, this study examined this difference empirically.

A previous study on the general adult population found that gender, age, health, work ability and mental health were associated with the experience of social inclusion (9). It was assumed that this is also the case for prisoners.

Experiences of social inclusion were measured using the ESIS (6, 11, www.thl.fi/osallisuusindikaattori). On the ESIS, the respondents assess its ten statements on a five-point Likert scale (1 completely disagree – 5 completely agree). A sum score is calculated for the responses which is then transformed into a range of zero to 100 points. The higher the score, the stronger the respondent's experience of social inclusion.

In this study, the experience of social inclusion was examined in two ways. Both group-specific mean scores on the ESIS and the shares of respondents scoring below 50 points were reported. Less than 50 points on the ESIS refers to a very weak level of social inclusion. A very weak experience of social inclusion suggests that the person is at high risk of social exclusion or feels already excluded (9).

The background variables used in the report were gender (women/men), age (three age groups), willingness to include/increase health-related targets in the sentence plan (no/yes), education (basic education/education beyond basic education), first-timer status in prison (no/yes), principal offence category (five categories), estimated length of current sentence over two years (no/yes), over two years of total lifetime prison days (no/yes), placement in an open or closed prison at the time of responding, need for health care services outside prison (no/yes) and work ability in the

free labour market assessed by the study nurse (no/yes). Group-specific differences in the level of experience of social inclusion were examined by ANOVA and expressed as p-values.

Results

Prisoners had a clearly weaker experience of social inclusion compared to the general adult population in Finland. The prisoners' mean score on the ESIS was 65.6 points. Of all prisoners, 21 per cent had a very weak experience of social inclusion, i.e. below 50 points on the ESIS. The prisoners' mean was about ten points lower than the mean score of the Finnish adult population, which was 75.3 points (9).

The proportion of prisoners experiencing very weak social inclusion was approximately twice as high compared to the corresponding share among the Finnish adult population (10.1%). Because the age and gender distributions among prisoners differ considerably from the general adult population, the comparison should be regarded as tentative. Table 1 shows the mean ESIS scores and the shares of those with a very weak experience of social inclusion by the respondent group.

Gender

Female prisoners had a stronger experience of social inclusion compared to men. The mean score for women on the ESIS was 69.8 points, while the mean for men was 64.4 points. The gender difference in the mean scores was statistically significant ($p=0.02$). The difference was also clearly manifest in the experience of very weak social inclusion. Of female prisoners, 15.6 per cent had a very weak experience of social inclusion, while this share was 22.6 per cent among male prisoners. However, the gender difference was not statistically significant in the experience of very weak social inclusion ($p=0.09$).

A gender difference in the level of the experience of social inclusion was also observed in a study examining the general adult population in Finland (9), but the gender gap seems to be slightly stronger among prisoners than in the adult population in general. For prisoners, the gender difference in mean ESIS scores was 5.4 points, and for the general adult population, slightly more than three points (76.9 points for women and 73.6 points for men). The stronger gender difference found among prisoners indicated that the difference in mean ESIS scores between male prisoners and men of the general adult population was greater than in the case of women.

The mean ESIS score of female prisoners was about seven points below that of women of the general adult population. For men, this difference was almost nine points. The gender differences among prisoners were also stronger regarding the experience of very weak social inclusion. In the adult population, the share of women with a score indicating a very weak level of social inclusion was 8.2 per cent while among men it was 12 per cent (i.e., the difference was just under four per cent) (9). Among prisoners, this difference was seven per cent. However, the relative differences between

Table 1. Average scores in the Experiences of Social Inclusion Scale (ESIS) and the share of those scoring under 50 points listed by background variables (common themes).

	n	Inclusion scale result	
		mean	<50 points (%)
All prisoners, total	515	65,6	21,0
Gender			
Men	393	64,3	22,6
Women	122	69,8	15,6
difference (p-value)		0,019	0,094
Age group			
18–29 years	154	66,3	20,1
30–47 years	269	65,3	20,8
over 47 years	92	65,4	22,8
difference (p-value)		0,911	0,878
Willingness to set health targets in sentence plan			
no	198	67,8	19,7
yes	296	63,9	22,3
difference (p-value)		0,053	0,490
Education			
at most basic education	279	65,7	20,8
more than basic education	236	65,5	21,2
difference (p-value)		0,896	0,912
First-time offender			
no	316	65,8	20,3
yes	199	65,3	22,1
difference (p-value)		0,784	0,615
Principal offence category			
violent offence	264	63,6	22,3
drug offence	117	67,7	17,9
theft/offence against property	61	67,2	23,0
other offences	71	67,9	19,7
data missing	2	76,3	-
difference (p-value)		0,336	0,795
Duration of sentence exceeds 2 years			
no	240	66,7	19,2
yes	268	64,3	22,8
difference (p-value)		0,218	0,322
Total prison days exceed 2 years during life (incapacitation)			
no	185	65,4	22,7
yes	330	65,7	20,0
difference (p-value)		0,880	0,471
Placement prison type			
open prison	98	67,9	17,3
closed prison	417	65,1	21,8
difference (p-value)		0,264	0,328
Treatment needed outside prison health care services			
no	237	65,7	22,4
yes	270	65,3	19,6
difference (p-value)		0,850	0,451
Work ability			
reduced work ability	238	61,6	28,6
good	275	69,2	14,5
difference (p-value)		<0,001	<0,001

female and male prisoners were at the same level as in the adult population, around one and a half times higher for men. Furthermore, gender-specific relative differences between prisoners and the general population were same for men and women (i.e. the shares were slightly less than double for both male and female prisoners compared to men and women of the general population).

Age

There were no significant differences in social exclusion between the age groups of those aged under 30, 30–46 and 47 years or more. The differences in the mean ESIS scores between age groups was less than one point ($p=0.91$). The youngest age group had the highest mean score (66.3 points). The share of those experiencing very weak social inclusion varied from 20.1 per cent in under 30-year-olds to 22.8 per cent in at least 47-year-olds ($p=0.88$). The result was different from findings for the general population where an age effect was found, as the age group of under 30-year-olds had the lowest mean ESIS score. The means increased until the age of 70. On the other hand, the share of respondents experiencing very weak social inclusion was highest among the youngest participants and decreased by age (9).

Willingness to set health targets in the sentence plan

In the questionnaire, prisoners were asked whether they are willing to include health-related targets to their sentence plans. The prisoners who felt this was not necessary scored, on average, 67.8 points on the ESIS, which was about four points higher than the others (63.9 points). The difference between the groups was very close to statistical significance ($p<0.053$). The situation was similar when examining very weak experiences of social inclusion. Their share was somewhat smaller among prisoners who reported not finding it important to set health-related targets (19.7%) compared to prisoners willing to set such targets (22.3%). However, the difference was not statistically significant ($p=0.49$).

From the perspective of the experience of social inclusion, the predictability of life and opportunities for planning the future are important factors. In this sense, the aspect of goal orientation is important (12, 13) – having a concrete target recorded in the sentence plan. However, the background question was specifically concerned with health-related targets. It is highly possible that prisoners with better health answered negatively to this question because they saw no need to set new targets related to their health. Previous research shows that those who experience their health as good have a stronger experience of social inclusion compared to others (9).

Education

The experience of social inclusion was examined based on education. Education was a two-category background variable: prisoners who had completed at most basic education and those with further education after basic education. A majority of prisoners had no education beyond basic education. No differences in the experience of social

inclusion were found based on the two-class education variable. The mean ESIS scores were indeed almost identical (65.7 points among those with at most basic education and 65.5 points among those with further education or training) and the difference was not statistically significant ($p=0.90$). The situation was very similar when looking at very weak experience of social inclusion. A very weak experience of social inclusion was found for 20.8 per cent of the respondents who had completed at most basic education, and for 21.2 per cent of those who had completed education or training beyond basic education, but this difference was not statistically significant ($p=0.91$).

However, this result was different from that for the general population: in the adult population there was an association between education and the experience of social inclusion—those who had more education had a stronger experience of social inclusion (9). In the general adult population, particularly most educated respondents differed from other tertile classes. Only a small proportion of prisoners had a higher education degree ($n=15$), but preliminary analyses showed that their mean ESIS score (56.2 points) was clearly lower compared to everyone else. Their mean ESIS score was more than 20 points lower compared to the most educated group in the adult population.

First-time offender status

No difference in the experience of social inclusion between those imprisoned for the first time and prisoners who had been imprisoned before was found. The mean ESIS score of first-time offenders was 65.3 points, and the share of respondents with a very weak experience of social inclusion was 22.1 per cent. The mean score of those who had been previously imprisoned was 65.8 points and 20.3 per cent of them had a very weak experience of social inclusion.

Principal offence category

When examining the prisoners' principal offence category, no statistically significant differences were observed in the levels of experience of social inclusion. However, notably, prisoners convicted of violent offences had a mean score of 63.6 points on the ESIS. This was around four points lower than among prisoners of the other principal offence groups, where the average scores were nearly identical (the biggest difference was 0.7 points). The result could possibly be explained by gender, as the proportions of women in offence categories may differ, and, as shown above, the mean ESIS score of female prisoners was higher. This should be analysed more in future studies.

However, the results for a very weak experience of social inclusion showed a slightly different picture. The share of those with a very weak experience of social inclusion was lowest among those sentenced for drug offences (17.9%) and the highest among those sentenced for theft or offences against property (23%). The share of those convicted of violent offences was the second highest (22.3%). Nevertheless, as for the mean ESIS scores, the differences in the share of respondents with very weak social in-

clusion between the different principal offence categories were not statistically significant.

Length of current sentence

The prisoners were divided into two groups based on the length of their current sentence. The mean ESIS score was 2.4 points lower for the respondents whose sentence was longer than two years compared to the respondents whose sentence was less than two years long. However, this difference was not statistically significant ($p=0.22$). In the group of prisoners with a sentence of over two years, the share of those experiencing very weak social inclusion was 22.8 per cent. In the shorter sentence category, this share was 3.6 per cent lower at 19.2 per cent. Also, this difference was not statistically significant.

Total number of prison days during lifetime

Prisoners' experiences of social inclusion were further examined by to the total number of days spent in prison during their lifetime, so called incapacitation time. No difference was found in the mean ESIS score between the respondents who had spent in total over two years and those with less than two years in prison. In fact, the difference was almost non-existent (0.3 points). Among those who had been in prison for over two years, 20 per cent experienced very poor social inclusion. In the group of respondents who had been in prison for less than two years, this share was somewhat higher (22.7%). However, the differences were not statistically significant.

Placement prison type

The experience of social inclusion among the respondents in an open prison was compared to those in closed prisons. The mean ESIS score of the respondents in an open prison (67.9 points) was 2.8 points higher compared to those in closed prisons. However, the difference was not statistically significant. Among those in open prison, 17.3 per cent experienced very weak social inclusion, while the corresponding share of those in closed prison was 21.8 per cent (i.e., 4.5 per cent higher). The direction of the results were in line with expectations, but the differences were smaller than expected and not statistically significant.

Use of health care services outside prison

The mean ESIS score of the prisoners who had used health care services outside the prison health care during their prison term (65.3 points) was nearly identical to those who had not needed these services (65.7 points). Among those who had used external health care services, the share of those with a very weak experience of social inclusion was 19.6 per cent. This share was 2.8 per cent lower than that of other prisoners (22.4%). The differences, however, were not statistically significant.

Work ability

The study nurse assessed the respondents' work ability for the open labour market into four categories. Here, we compare the level of the experience of social inclusion among prisoners assessed to have full work ability to the group of the other categories taken together (partial work ability, in need of rehabilitation and unfit for work). Among prisoners with full work ability, the mean score on the ESIS was 69.2 points. The prisoners with reduced work ability, or those unfit for work, scored clearly lower (61.6 points). The difference of 7.6 points was statistically very significant ($p < 0.001$). The difference was even more evident when examining a very weak experience of social inclusion. Among prisoners with full work ability, 14.5 per cent had a very weak experience of social inclusion. Among prisoners assessed to have reduced work ability or unfit for work, the share was almost twice as high at 28.6 per cent. Also, this difference was statistically highly significant ($p < 0.001$), Figure 1.

Work ability also emerged as a key factor for the experience of social inclusion in a previous study carried out among the general adult population in Finland (9). However, there was a clear difference between prisoners and the general adult population. In the adult population, those who assessed their work ability as good had a mean ESIS score of 78.8 points and the share of those experiencing very weak social inclusion was 7.4 per cent. On the other hand, those who assessed their work ability as impaired had an mean score of 68.3 points on the ESIS and the share of those experiencing very weak social inclusion was 16.7 per cent. In this sense, the experience of social inclusion among prisoners with full work ability were more similar to the levels of the adult population among those who assessed their work ability as impaired.

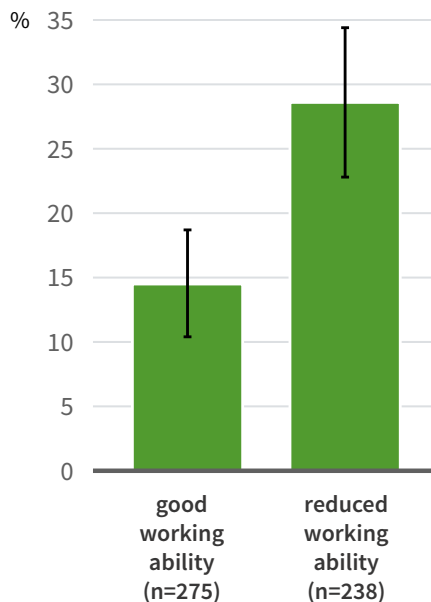


Figure 1. Prevalence of a very poor experience of inclusion (%) according to the work ability assessed by the study nurse.

Conclusions

The present study examined for the first time the level of experiences of social inclusion among prisoners. Prisoners had a clearly weaker experience of social inclusion compared to the general adult population. The mean score on the Experiences of Social Inclusion Scale (ESIS) was about ten points lower among prisoners compared to the adult population. Moreover, a very weak experience of social inclusion was more common among prisoners. The share was about twice as high as that of the general adult population. However, the prisoners' experience of inclusion was somewhat stronger than could be expected from the conceptual considerations. Prison restricts various aspects that play a key role in the experience of social inclusion, such as autonomy, opportunities for participation, being an active agent and freely choosing social relationships. In this sense, it is rather surprising that the experience of social inclusion was slightly stronger among prisoners compared to unemployed jobseekers living in freedom (9). However, the situation of prisoners also seemed rather good in light of other variables, such as perceived health or work ability, which are associated with the experience of social inclusion. Thus, the results are consistent with these findings.

At least for some prisoners, life before prison may have been difficult and tough. The prison may gradually start to feel like a safer and more manageable setting than the rest of society, as prisoners' basic needs are taken care of and everyday life is repetitive, familiar, and predictable. This may particularly be the case for prisoners who have adapted to the prison community and environment as a result of several lengthy prison sentences, and who may find it difficult to adapt to society outside the prison. On the other hand, the result may also suggest that prisons successfully found measures to support building up the experience of social inclusion among inmates, which is rehabilitative and aims to prevent crime in the future and facilitate reintegration. Furthermore, prisoners are provided treatment and health care when needed, life is planned together, and targets are set in the sentence plan. All this may strengthen the experience of social inclusion and increase hope for the future. However, more research is needed to examine these rather speculative assumptions.

Female prisoners had a stronger experience of social inclusion compared to male inmates. The gender difference in the experience of social inclusion found among prisoners is similar to that among the general adult population (9). However, this gender gap was somewhat more pronounced among prisoners. The difference in experiences of social inclusion between male prisoners and men of the general adult population was larger than among women. The finding is consistent with previous research on socially disadvantaged groups. A qualitative study on experiences of poverty found that men are more vulnerable than women to feelings of worthlessness (14). Among social work clients, men are also more uncertain about their future than women (12).

In the prison and probation sector, measures specifically aimed at women are carried out, in which a safe environment, a confidential atmosphere and a traumatic background are acknowledged and regarded as important factors in building the prerequisites for a good life (15). Furthermore, female prisoners may find it easier than men to articulate their feelings and emotions and to talk about them. The sense of control,

manageability, and agency associated with the experience of social inclusion also refers to a person's ability to process difficult emotions, express themselves and join communities and stories deemed meaningful (16). It may also be that the women more commonly have everyday structures that support their social inclusion outside prison, such as family and friends. The chapter [Loneliness and social relationships](#) of this report provides more results about social relationships, support structures, and loneliness among prisoners and supports some of these assumptions (e.g., female prisoners more commonly feel that they get support). However, more research is needed.

On the other hand, no differences were found in the level of experience of social inclusion between different age groups. In this study, only three age groups were examined. However, the results were slightly different than among the general adult population, where an age effect was found, i.e. younger respondents had a poorer experience of social inclusion (9).

No differences were found in the level of experience of social inclusion based on educational background. Education was divided into just two categories, those who had completed at most basic education and those who had completed education or training beyond this. These categories were different from the categories usually used in analyses of the general adult population data, making direct comparisons difficult. However, the result suggests that a higher level of education does not strengthen the experience of social inclusion among prisoners, unlike in the adult population, where higher levels of education were associated with a stronger experience of social inclusion (9). Conversely, the opposite applied as preliminary analyses showed that the mean ESIS score for prisoners with tertiary education was clearly the lowest. It is possible that highly educated people struggle more in the prison environment, but further research is needed.

The level of the experience of social inclusion did not statistically significantly differ when examined by the prison-specific background variables used throughout this report. Although not statistically significant, the results suggested that prisoners in an open prison and those who had been sentenced for a period of less than two years had a slightly stronger experience of social inclusion. In addition, those convicted of violent offenses had a somewhat lower mean ESIS score. In all other cases, any differences in the level of experience of social inclusion were almost non-existent.

The results indicate that other background variables than prison-specific ones might be more relevant to the experience of social inclusion among prisoners. In previous studies outside the prison context, perceived health, functional capacity and work ability, mental health and experiences of violence emerged as key factors (6, 9, 17). Some of these findings were confirmed in this study, because they relate to work ability. Among prisoners, the strongest differences were found when experience of social inclusion was examined according to the assessed work ability. The mean ESIS score of prisoners with full work ability was clearly higher compared to others. Moreover, the share of experiences of very weak social inclusion was about twice as high among prisoners who had been assessed having impaired or no work ability. Nevertheless, there was a clear difference between prisoners and the general adult population. The level of the experience of social inclusion among prisoners with full work ability was closer to those who rated their work ability as reduced among the general adult population.

Recommendations for practice and future research

Promoting the experience of social inclusion among prisoners is important for their wellbeing. However, in a prison context this may be challenging because prisoners' autonomy, possibilities of self-determination and the freedom to choose social relationships are limited. This makes it important to involve the prisoner in the decision-making that concerns them as well as drafting their sentence plans, for example. It is also essential that prisoners are heard. This can be promoted through means such as peer groups and constructive interaction between prisoners and professionals. Furthermore, it is important that prisoners receive treatment for their health problems, particularly mental health problems and traumatic experiences. In addition, providing tangible aims and hopeful prospects for the future may promote the experience of social inclusion and also help the prisoners' life after release.

This chapter presented, for the first time, findings on the experiences of social inclusion among prisoners. The results indicate that associations similar to those observed in previous studies at the general population level are also found among prisoners. The most important ones were gender and work ability. On a conceptual level, work ability inherently unites many aspects of health and wellbeing. For this reason, further studies exploring experiences of social inclusion among prisoners should examine the roles of health, functional capacity and work ability as well as mental health disorders more extensively within their scope. As traumatic experiences and the characteristics of ADHD are common among prisoners, also according to the present report, they should be included to future studies. The same applies to addictions and substance abuse.

The analyses performed in this chapter were rather simple. The experience of social inclusion was examined only in a bivariate manner, (i.e., according to one specific background variable at the time). Many questions remain unanswered - for example, did those convicted of violent offences score partly lower because women were under-represented in this group? Future studies should include multivariate analyses and statistical methods that enable the examination of the interdependencies, mutual interactions, and joint effects of different background variables. That would also be an important step towards an intersectional perspective. If the aim is to obtain more precise information on how the experience of social inclusion among prisoners is constructed and the causal relationships responsible for such processes, future studies should also include qualitative methods.

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- 1) Isola, A.-M., Kaartinen, H., Leemann, L., Lääperi, R., Puromäki, H., Schneider, T., Valtari, S., Keto-Tokoi, A. 2017: Mitä osallisuus on? Osallisuuden viitekehystä rakentamassa. Työpapereita 33/2017. Terveystieteiden tutkimuskeskus, Helsinki.
- 2) Thompson, M., ja Wildavsky, A. 1986: A poverty of distinction. From economic homogeneity to cultural homogeneity in the classification of poor people. *Policy Sciences* 19, 163–199.
- 3) Sen, A. 1985: Well-being, agency and freedom: The Dewey lectures 1984. *The Journal of Philosophy* 82/4, 169–221.
- 4) Sen, A. 2009: *The idea of justice*. Harvard University Press, Cambridge.
- 5) Salminen, J., Lehtonen, P., Rikala, S., Kuusisto, A.-K., Luoma-Halkola, H., Puumala, E., Sointu, L., Wallin, A., Häikiö, L. 2021: Osallisuuden kehät: Näkökulmia hyvinvoinnin muotoutumiseen. *Focus Localis* 3/2021, 80–97.
- 6) Leemann, L., Martelin, S., Koskinen, S., Härkönen, T., Isola, A.-M. 2022: Development and psychometric evaluation of the experiences of social inclusion scale. *Journal of Human Development and Capabilities* 23/3, 400–424. <https://doi.org/10.1080/19452829.2021.1985440>.
- 7) Isola, A.-M., Virrankari, L., Hiilamo, H. 2021: On social and psychological consequences of prolonged poverty – A longitudinal narrative study from Finland. *Social and Political Psychology* 9/2, 654–670.
- 8) Isola, A.-M. 2016: Autonomia, demokratia ja yhteiset. Osallisuuden paikallinen edistäminen. *Yhteiskuntapolitiikka* 81/5, 595–600.
- 9) Leemann, L., Nousiainen, M., Keto-Tokoi, A., Isola, A.-M. 2022: Suomalaisten osallisuuden kokemus. Teoksessa Sakari Karvonen, Laura Kestilä & Paula Saikkonen (toim.): *Suomalaisten hyvinvointi 2022*. Teema-sarja. Terveystieteiden tutkimuskeskus, Helsinki.
- 10) Fraser, N. 2009: *Scales of justice: Reimagining political space in a globalizing world*. Columbia University Press, New York.
- 11) Leemann, L., Isola, A.-M., Kukkonen, M., Puromäki, H., Valtari, S., Keto-Tokoi, A. 2018: Työelämän ulkopuolella olevien osallisuus ja hyvinvointi. Kyselytutkimuksen tuloksia. Työpapereita 17/2018. Terveystieteiden tutkimuskeskus, Helsinki.
- 12) Ekqvist, E. ja Kuusisto, K. 2020: Aikuissosiaalityön asiakkaiden tulevaisuuteen suhtautuminen ja toiveet. *Janus* 28/1, 42–59.
- 13) Kivistö, M. ja Hautala, S. 2020: Dokumentoitu asiakaslähtöisyys? Vammaissosiaalityön asiakasprosessit asiakasdokumenttien kuvaamana. *Janus* 28/3, 254–272.
- 14) Isola, A.-M., Siukola, R., Kukkonen, M. 2019: Gendered experiences of poverty and recognition in the Finnish Welfare State. *NORA – Nordic Journal of Feminist and Gender Research* 27/3, 152–165. DOI: [10.1080/08038740.2019.1604570](https://doi.org/10.1080/08038740.2019.1604570).
- 15) Salovaara, U. 2023: Nais erityiset ja sukupuolisensitiiviset toimintamahdollisuudet rikosseuraamusalalla. Teoksessa Olli Kaarakka ja Karoliina Nikula (toim.) 2023: *Rikosseuraamusalan etiikka – käsitteistä käytäntöön*. Acta Poenologica 1/2023. Rikosseuraamusalan koulutuskeskus, Helsinki.
- 16) Salovaara, U., Pirttilahti, H., Lindström, J. 2023: Rikostausta, häpeä ja tunnustus: Kokemuksia rikostaustaisten kohtaamisesta. Teoksessa Olli Kaarakka & Karoliina Nikula (toim.): *Rikosseuraamusalan etiikka – käsitteistä käytäntöön*. Acta Poenologica 1/2023. Rikosseuraamusalan koulutuskeskus, Helsinki.
- 17) Virrankari, L., Leemann, L., Kivimäki, H. 2021: Osallisuuden kokemus ja vanhempien fyysinen väkivalta: Kouluterveyskyselyn 2019 tuloksia. *Tutkimuksesta tiiviisti* 39/2021. Terveystieteiden tutkimuskeskus, Helsinki.



Long-term illnesses and the usage of health services are more common among prisoners compared to the Finnish population.

Around one in four of the Wattu IV respondents are heavy users of health services.

The prisoners who had undergone a forensic psychiatric examination stand out based on their greater need for both mental and somatic treatment. It is well-founded to refer the offenders ending up in prison instead of in care facilities as forensic psychiatric prisoners.

Health problems and the usage of health services are prevalent in female prisoners.

Comprehensive intervention for the heavy usage of health services is possible during imprisonment.

Usage of health services

Introduction

Offenders whose sense of reality and the ability to control one's behaviour is suspected to have been weakened at the time of the committed crime are remanded to forensic psychiatric examination. The annual number of forensic psychiatric examinations has decreased to about one third compared to the peak years in the 1990s. The current number is approximately 100 examinations per year (1).

Individuals who have undergone a mental state examination and sentenced to imprisonment have been evaluated as either criminally responsible or with reduced criminal responsibility. They are not directed to health care services based on the findings in the forensic psychiatric examination. Instead, their need for treatment is evaluated with the same protocol as any other imprisoned person. By contrast, a person evaluated as lacking criminal responsibility due to their serious psychiatric illness is remanded to a forensic psychiatric hospital for treatment. Meanwhile, those with diminished responsibility who end up in prison (2) and the whole prison population (3) have also been found to have a high need for treatment and high morbidity.

Prisoners with long-term illnesses require continuity of treatment implemented by The Health Services for Prisoners and public health and social services. In this study, prisoners with a high need for health services are ones with eight or more health-related appointments per year. In this sub-group of prisoners, the timely and correct targeting of the necessary services is essentially important.

Research questions and research methods

In this paper, we examine prisoners' health service use before and during their criminal sanction. The data on illnesses reported by female and male prisoners and their contacts with health services during the previous 12 months were compared with the rest of the Finnish population. Particular attention was paid to the use of health services in a group of respondents who reported having undergone a forensic psychiatric examination at some point (n=78). In the comparison, the FinHealth 2017 population study data was applied (hereinafter FH17). The age range of the FH17 was limited to correspond to the Wattu data, and in the regression model testing significance for the effects of age and education (n=4374). Basic distributions and cross-tabulation were also used as the analysis methods.

Results

Prisoners' long-term illnesses and the usage of health services compared to the Finnish population

Around six out of ten respondents reported having a long-term illness or some other long-term health problem (65 per cent of women and 57 per cent of men). Illnesses were considerably more common among prisoners than among the Finnish population. According to the FH17 study, the corresponding rates were 47 per cent of women and 41 per cent of men. There was no difference in the rates of long-term illness or other long-term health problems between the prisoners who had undergone a forensic psychiatric examination and the other prisoners.

The average number of doctor's appointments during the previous 12 months - some of which may have taken place before the imprisonment - was 4.1 for both female and male prisoners. At the Finnish population level, the corresponding rate was 2.8 for women and 1.9 for men. The number of prisoners' appointments ranged from 0 to 50. One-fifth of the respondents had not visited a doctor during the past year. The average number of visits to a public health nurse, nurse or occupational health nurse, or home visits by a public health nurse was 13 for women and 7 for men. The number of visits ranged from 0 to 365. Twenty-three per cent of the respondents had no health care visits. At the level of the Finnish population, the average number of visits was considerably lower, 1.5 for women and 1.2 for men.

Table 1 on the following page presents the number of appointments with a doctor, visits to a public health nurse, nurse or occupational health nurse, and the number of home visits of a public health nurse during the previous 12 months. There was no significant difference in numbers between the forensic psychiatrically examined and the other prisoners. Approximately one in four prisoners and one in five of those who had undergone a forensic psychiatric examination are so-called heavy users of health services, needing appointments more than seven times per year (5).

Table 1. Appointments reported by prisoners during the previous 12 months (prisoners who have undergone forensic psychiatric examination vs. other prisoners).

appointments in the previous 12 months	forensic n = 74	other prisoners n = 448
	%	%
doctor's appointment		
0 times	21.6	20.3
1 to 7 times	63.5	60.2
8 times or more	14.8	16.1
other health care visit		
0 times	17.6	23.2
1 to 7 times	63.5	47.5
8 times or more	18.9	24.6

In the previous 12 months, about a quarter of the respondents had been in contact with a doctor due to depression, and about one in six due to some other mental disorder or illness. No difference was found in seeking treatment due to depression in the prisoners who had undergone a mental examination and other prisoners. By contrast, 31 per cent of those seeking treatment due to other mental disorders or illnesses had undergone a forensic psychiatric examination, compared to just 15 per cent of other prisoners. The difference was statistically significant ($p < 0.001$).

Table 2 shows the healthcare providers whom the respondents would primarily contact if they needed health services outside the prison. While health centres and occupational health care are the primary places of care at the population level, a considerably larger proportion of those who have ended up in prison had contacted a health centre when needing medical attention. Nearly nine out of ten female prisoners reported using a health centre as their primary place of care. It is worth noting that about

Table 2. The first treatment facility to have contacted, the prison population (WattuIV) and the general population (FH17).

primary treatment facility outside prison	women		men	
	Wattu IV n = 124 %	FH17 n = 2 426 %	Wattu IV n = 402 %	FH17 n = 1 948 %
Health centre	84.8	44.2	68	43.3
Private medical clinic	6.2	12.9	24	14.4
Occupational health care	2.7	34.7	1	37.3
Student health care	0	6.7	0.8	3.1
Hospital outpatient clinic	1.8	1.3	4.4	1.7
Other	4.5	0.2	1.8	0.3

one in four of male prisoners reported a private medical clinic as their primary place of care. No difference related to the primary care contact was found between those who had undergone a forensic psychiatric examination and other prisoners.

Usage of the Health Care Services for Prisoners

A tenth of prisoners reported having used the psychiatric care services provided by the Health Care Services for Prisoners. Table 3 shows that a considerably higher number of the prisoners who had undergone a forensic psychiatric examination had used acute psychiatric and long-term psychiatric services, and psychiatric emergency services compared to other prisoners.

Table 3. Self-reported use of certain psychiatric services provided by the Health Care Services for Prisoners, prisoners who have undergone forensic psychiatric examination and other prisoners.

	forensic n = 74 %	other prisoners n = 448 %
acute psychiatric treatment***	23	8
long-term psychiatric treatment***	12	3
emergency psychiatric care (Turku)***	13	4

***p<0,001

As shown in Table 4, approximately one in four respondents had used the Health Care Services for Prisoners due to an acute illness, and 17 per cent due to a long-term illness. Approximately one-third had sought treatment due to insomnia. Sixteen per cent of the respondents had received treatment for Hepatitis C in prison. More than half of the respondents had used oral health care services, which refers generally to the filling of a tooth. The use of Health Care Services for Prisoners related to the treatment

Table 4. Self-reported use of certain somatic services provided by the Health Care Services for Prisoners, prisoners who have undergone forensic psychiatric examination and other prisoners.

	forensic n=74 %	other prisoners n=448 %
Treatment of acute illnesses	31	22
Treatment of long-term ill-nesses	21	17
Treatment of insomnia	42	35
Treatment of hepatitis C**	27	14
Restorative oral health care*	65	51

**p<0,01, * p<0,05

of Hepatitis C as well as restorative treatments in oral care was more common in the group of prisoners who had undergone a forensic psychiatric examination.

More than half of the respondents (54%) and 63% of prisoners who had undergone a forensic psychiatric examination reported having used a health care service outside the prison during their prison term. With most of them, this meant a single treatment appointment. The proportion of those with a single treatment appointment was 60 per cent of prisoners who had undergone a forensic psychiatric examination, and 45 per cent of other prisoners ($p=0.015$).

The term of imprisonment for prisoners who have undergone a forensic psychiatric examination

Of the prisoners, 16 per cent of men and 12 per cent of women reported having undergone a forensic psychiatric examination at some point. This study does not provide a general view of prisoners who have undergone a forensic psychiatric examination. In the Wattu IV research form, the question about the examination concerns only the ones produced by the Health Care Services for Prisoners. Hence, the prisoners examined in other hospital units may have responded to it or opted out of responding. In any case, this group of respondents represents at least some of the prisoners who have undergone a forensic psychiatric examination. No difference related to gender, age or level of education was found between this group and the other prisoners. For more information on the mental health of prisoners who have undergone a forensic psychiatric examination, see the chapter, [Psychotic Disorders](#) of this report.

In both groups, approximately 40 per cent were in prison for the first time, and 80 per cent were placed in a closed prison. The principal offence was a violent offence for 88 per cent of the prisoners who had undergone a forensic psychiatric examination and 45 per cent of other respondents. As such, this is an understandable finding, as the main criterion for sending a person to a forensic psychiatric examination is a severe and hence often violent criminal act. As a result of having been sentenced for a violent offence, the estimated length of the current sentence was longer among those who had undergone a forensic psychiatric examination (over two years in 87 per cent of the cases). The corresponding proportion was 47% in other prisoners ($p<0.001$). Considering the lifetime number of days of imprisonment, the incapacitation period was more than two years for 88 per cent of all prisoners and 60 per cent of those who had undergone a forensic psychiatric examination ($p<0.001$). The proportion of prisoners who reported having been isolated based on their request during their prison sentence was relatively higher among the prisoners who had undergone a forensic psychiatric examination – at 29 per cent compared to 17 per cent of other prisoners ($p=0.016$).

Six out of ten of the respondents considered it important to set health-related aims in their sentence plan made at the beginning of the prison sentence. The willingness for it was equally common among the prisoners who had undergone a forensic psychiatric examination and other prisoners. Slightly over half of all prisoners were assessed by a registered nurse to be able to work if they were rehabilitated. There was no differ-

ence in the ability to work between the prisoners who had undergone a forensic psychiatric examination and other prisoners.

Conclusions

Long-term illnesses and the use of health services were more common among prisoners compared to the Finnish population. Around one in four of the respondents are heavy users of health services (eight or more appointments in the previous 12 months). A higher proportion of health problems and health service usage among female prisoners was already observed in the previous Wattu studies (4, 6).

Prisoners who have undergone a forensic psychiatric examination are a special group. The results reveal that they have a higher need for treatment than others due to both mental and somatic reasons. Those who had undergone a forensic psychiatric examination had used at least Hepatitis C treatment, dental care and health services outside the prison more often than other prisoners.

Recommendations for practice and future research

Heavy usage of health services is very common among prisoners. One in four prisoners had used health care services more than seven times during the previous 12 months. This proportion is several times higher than among the rest of the population (5).

The accumulation of the usage of health services in prisoners who have undergone a forensic psychiatric examination is most likely related to the appropriateness of discretion by a court of law on who should be remanded to such an examination. The grounds for the examination are a concern about the mental welfare of a person regardless of their criminal responsibility, and thus it serves as a kind of screening method for individuals who are more likely to have mental health problems. It is well-founded to refer to those offenders who end up in prison instead of in care facilities as forensic psychiatric prisoners, as they stand out based on their greater need for health services.

Further studies could explore the temporal placement of the health service needs in relation to the period of imprisonment and the reasons for the use of civilian health services. In addition, from the perspective of prison practices, it would be useful to examine why a relatively larger number of prisoners who have undergone a forensic psychiatric examination had been isolated due to their own request during their prison sentence. Undergoing a mental examination may affect the prisoner's coping in prison as an independent agent due to issues such as stigmatisation, but psychiatric morbidity may also generally manifest as withdrawal from social situations.

Heavy usage of services is related to both the cost-effectiveness of health care and to the patient's experience of the treatment they receive. Both matters can be influenced during imprisonment, as there is more time and opportunities for reviewing and preparing a treatment plan than in other health care settings.

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References

- 1) Finnish Institute for Health and Welfare. 2022. Statistics on cases in the field of forensic psychiatry 2012–2021
- 2) Ahlgrén-Rimpiläinen et al. Decrease in forensic psychiatric examinations and the psychiatric treatment of violent offenders. Publication series of the Government's reporting and research activities 30.
- 3) Törölä, M. & Rautanen, M. 2023: Prisoners with reduced criminal responsibility stand out based on their rates of hospitalisation during their sentences”, *International Journal of Prisoner Health*, Vol. ahead-of-print. <https://doi.org/10.1108/IJPH-05-2022-0032>
- 4) Joukamaa et al. 2010. Health, working capacity and need for treatment of criminal sanction clients. Publications by the Criminal Sanctions Agency 1/2010.
- 5) Santalahti, A., Luutonen, S. & Rautava, P. 2023. Terveyspalvelujen suurkäyttäjät – tunnistamaton potilasryhmä. *Duodecim* 139, s. 519–21.
- 6) Joukamaa, M. 1991. Suomalaisten vankien terveys. *Kansanterveystieteen julkaisuja M 107/91*, Turku.



Prison conditions may in themselves increase aggression and violence.

Prisoners feel that means such as physical activity, discussion assistance and creative activity-based approaches reduce their feelings of aggression.

The services offered in the prisons respond fairly well to the suggestions made by the prisoners, but there are differences between prisons in the services provided.

Prisoners should be provided with sufficient opportunities to discuss their aggressive behaviour with prison staff and prison health care staff.

The need for spaces where prisoners can retreat, the possibility of spending time alone and sufficiently diverse opportunities for physical activity should be taken into consideration in prison planning.

The prisoner's voice is a valuable addition when looking for ways to carry out better prison and probation work. By involving prisoners, it is possible to find new ideas for services.

Means to reduce feelings of aggression

Introduction

Violence and aggression are problems encountered in prisons. Aggression can turn into violent behaviour and cause both human suffering and an increase in the use of health services. Violence also results in other costs, for example through the need for social and legal services (1).

Aggression can be defined as goal-oriented or reactive-impulsive. The behaviour may involve physical violence, but it may also be verbal. Impulsive aggression is usually a reaction to stress or provocation. Prison conditions affect the prevalence of violence through many mechanisms, such as restricting the activities of prisoners, reducing privacy and confining many people with often considerably different problems in the same space for long periods of time (2). Prison conditions and a prison culture exposing prisoners to aggression may increase maladaptive ways to process negative emotions. Restricted conditions complicate the interactive situations between prisoners and staff. The lack of privacy and self-determination reduces the possible ways that prisoners could avoid aggressive and violent situations. The means used in prison may also not work or be available after the prisoner is released.

There are a total of 28 prisons in Finland where prisoners are serving their sentences in closed or open conditions. On average, 3,056 people are serving a sentence in prisons on a given day. The largest group of prisoners are those convicted of violent offences (3). The Prison and Probation Service uses various activity programmes and

methods to promote thinking skills with an aim to reduce aggressive and violent behaviour in prisoners. The methods used in an effort to reduce impulsive violence are different from those used with goal-oriented violence.

The Prison and Probation Service has compiled the rehabilitative services available in all Finnish prisons and probation offices into a national service map. There are seven thematic areas (TA1-TA7) and each contains services relevant to the topic. The services are implemented by either the Prison and Probation Service or outside cooperation partners. Some of the services are common to all the thematic areas, including individual discussions and guidance, work carried out in networks, expert by experience (peer) services, and e-services. There is also an additional thematic area 8 (TA8) that combines all the other areas and emphasises issues such as a good operating environment and interactions. Below, is a detailed list of the services carried out under the themes is available, presenting all services per prison.

TA 1: Intoxicating substances and addictions: individual substance abuse work, substance abuse treatment, substance abuse rehabilitation, individual work on other addictions, treatment and rehabilitation of other addictions.

TA 2: Values, thinking and activities: individual work, psychological and psychotherapy services, spiritual services, motivational programmes, impact programmes, other rehabilitation.

TA 3: Everyday skills: the use of services provided by the authorities and other services, household management and living skills, financial and money management skills, e-service skills, leisure time and recreational activities.

TA 4: Education and working life skills: education and training, work activities at prison, open prison work, rehabilitative work activities, gainful employment, work included in community sanctions, employment support services, library services, arts and cultural activities.

TA 5: Health and welfare: health care, health counselling, well-being services, sports services, services supporting mental health

TA 6: Children, parenthood and relationships: child and family work, different forms of meetings, groups and day activities supporting parenthood, family work and childcare at the family ward, camps for family members.

TA 7: Attachment to society and a crime-free lifestyle: individual work, service coordination and networking, social rehabilitation, peer support and expert by experience services.

TA 8: Evaluative and systematic work, a safe and rehabilitative operating environment, interactions that reflect professionalism and respect for human dignity.

The aim of the Strategy of the Prison and Probation Service (2022–2025) is to implement and develop services effectively. Integration into the services available in society and network cooperation manifest as one of the main performance targets (4).

Research questions and research methods

This sub-study examined qualitatively the means prisoners suggested for reducing their feelings of aggression in prison conditions and how the national service range of the Prison and Probation Service corresponds to the prisoners' responses.

The means were collected using the question “How do you think a prisoner could manage their feelings of aggression?” in a questionnaire. Thematic categories were formed based on the prisoner’s free-form responses using a data-driven approach. At the beginning of the thematic analysis, two researchers forming the categories reviewed the data set together to ensure they had a shared understanding. After this, both researchers worked independently to classify the remaining data. The uniformity of the outcome was ensured by discussing any differences in opinion. Rehabilitative services matching the responses were sought in the thematic areas of the Prison and Probation Service’s national service map and the detailed list of services at the level of individual prisons.

Results

Of those who responded to the questionnaires, 247 (47%) described one or more different ways to reduce feelings of aggression. A total of 318 means were obtained, 235 of them from men and 83 from women, and they were used to form 11 thematic categories: talking, discussing with a professional, physical activity, spending time outdoors, physical activity, meditation/relaxation, breathing, retreating/calming down, thinking skills, programme work, medication, I do not know, and other. Figure 1 shows the number of responses by gender in the different thematic groups.

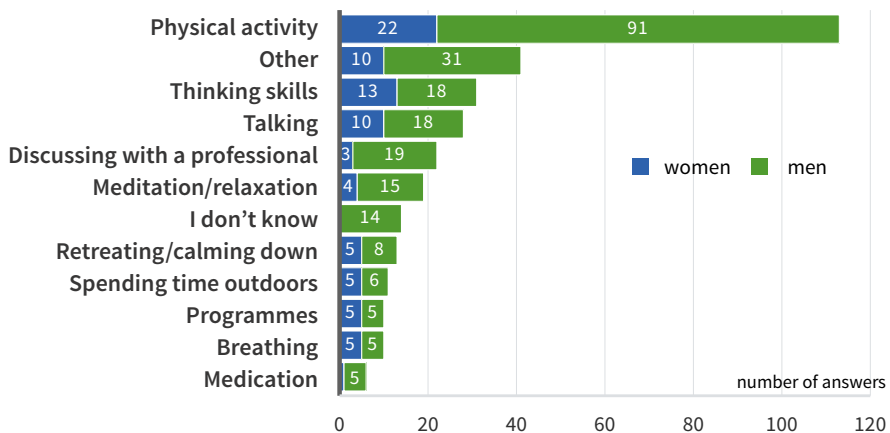


Figure 1. Themes in the order of prevalence and number of answers to the question “How do you think a prisoner could manage their feelings of aggression?” Physical activity in its different forms was clearly highlighted as the most commonly suggested means.

An examination of the services offered by the Prison and Probation Service identified the below activities/services intended to alleviate aggressive behaviour, the factors or capabilities underlying aggressive behaviour, and which correspond at least partially to the categories formed based on the range of means presented by the prisoners.

TA 1 Intoxicating substances and addiction: Peer support, experts by experience, individual meetings, group activities and networking.

TA 2 Values, thinking and actions: spiritual meetings, peer support, experts by experience, individual meetings, group activities, networking, psychologists, therapy, virtual reality programmes (VR), individual and group programmes, such as Anger Management, Cognitive Skills and Aggredi meetings in prisons, arranged by the Prison and Probation Service and other actors.

TA 3 Everyday skills: individual discussion, peer support and expert by experience services, management of social affairs in the prison ward (mobile phone use, access to services and communicating), work in networks such as Vamos, leisure activities (e.g. fellow prisoners, recreational activity groups) and nature-assisted activities (Green care, outdoor work, gardening).

TA 4 Education and working life skills: individual work (e.g. assessment of work ability and functional capacity), library services (groups gathering in the library), maintenance/yard work in outdoor areas, the welfare sector (physical activity/massage) as work activities, personal trainer training, wellbeing coach training, workshops combining different forms of rehabilitation (e.g. Nova), work in networks (individual and group) organised by third-sector organisations, such as Via Dia.

TA 5 Health and welfare: individual discussion and guidance related to health and welfare (including local work carried out by instructors and prison officers to support mental and physical functional capacity, such as physical activity), psychologist services, work in networks (with municipalities and the third sector and the Health Care Services for Prisoners) as individual work and group activities, neuropsychological training, peer support and expert by experience services (e.g. participation in the Helmi association's activities, ADHD group), sports group, holidays to support welfare, emotional skills group, mental health first aid groups and physical activity services such as guided group exercises (physical exercise instructor, gym, floorball, football, yoga, mindfulness, walks, cross-country skiing, berry picking, fishing, mushroom foraging), sports events and other physical activity outside the prison, e.g. at a swimming pool, autonomous group activities and autonomous physical activity and spending time outdoors in the prison area, gym (instructed and autonomous work-outs), creative activity-based methods (such as acupuncture), relaxation exercises and activity-based encounters (e.g. while engaging in physical activity).

TA 6 Children, parenthood and relationships: individual discussion and counselling (e.g. couples and family therapy, bringing up domestic violence), discussions on familial relationships between prisoners and people close to them, work in networks (e.g. investigating the family situation), supervised and unsupervised meetings with visits by close people, other contacts with family and friends (e.g. calls, letters, e-mail and prison leave), activities organised by a third party (e.g. family work by the Miessakit Association) and expert by experience services.

TA 7 Attachment to society and a crime-free lifestyle: individual discussion and guidance (e.g. development of communication, multiprofessional work ability assessments), network cooperation (with public services or the third sector), discussion groups (arranged by the prison or a third party), and expert by experience and peer support.

Conclusions

Physical activity and working out were the most common means proposed by the prisoners to influence their feelings of aggression, and physical activity was most commonly mentioned both in men's and women's responses. Working out at a gym and punching bags were particularly mentioned in addition to just having an opportunity to exercise. Indeed, prisoners can work on their anger by lifting weights or maintaining their mental and physical health with regular physical activity. The services offered in the prisons include both instructed and autonomous physical activity. While the opportunities for physical activity vary from prison to prison, an examination at the national level shows that prisons offer a wide range of indoor and outdoor sports services for prisoners.

Some of the responses also indicated that merely spending time outdoors helps. In addition to outdoor exercise, spending time outdoors can include walking in the prison yard, sitting outdoors or working in outdoor areas as a part of one's work in prison. Even in closed conditions, prisoners must be provided with an opportunity to spend at least one hour outdoors each day. In some responses, outdoor activities also included discussions. When spending time outdoors, some may find it easier to talk about their situation to another prisoner and thus receive peer support alongside physical activity.

In their responses, the prisoners expressed that discussing problems helps them work on their feelings of aggression. In the analysis of the responses, the discussion was divided into two themes: general discussions with a fellow prisoner or a close person one and discussions with a professional, such as a therapist or counsellor. These were the second most common themes mentioned in the responses after physical activity. One example of such a response was, "If you could break the pattern with a friend." This describes the prisoner's need to reduce their aggression by talking to another person. More information about prisoners' social relationships and topics such as the opportunities to share difficult things by discussing with someone is available in the chapter [Loneliness and social relationships](#) of this report.

Indeed, prisoners should be provided with sufficient opportunities to discuss their aggressive behaviour with prison staff and prison health care staff. In the service map of the Prison and Probation Service, individual work to promote the sentence plan is seen as one of the important means between the prisoner and prison employees. It is difficult to assess how quickly prisoners will be able to access discussions with prison employees, psychologists or employees of the Health Care Services for Prisoners in acute situations involving feelings of aggression. Psychologist services are also not available in all prisons. Prison officers are often the first to encounter prisoners in situations involving aggression. Calm and positive interactions between a prisoner and the prison officer promote calming down the situation. Specialist staff have competence in multi-professional work and network cooperation with other actors in society. Stakeholder cooperation is used with the aim of providing prisoners with discussion-based support, for example, during the court decision process.

Although medication did not emerge as a means for alleviating the prisoner's emotional state due to the formulation of the question, it is important to investigate any health-related reasons underlying aggression. Different states of pain, mental strain and mental health problems can increase feelings of aggression and reduce the person's ability to calm down or work on their rage. In fact, discussing with professionals may involve meetings with a psychologist, psychiatrist or nurse, and discussions with an employee of the Prison and Probation Service as individual work. These services are available for prisoners at the national level and under all thematic areas of the service map. Intervening in the mental symptoms underlying aggression requires collaboration between the Health Care Services for Prisoners and the Prison and Probation Service as well as evidence-based practices in identifying the prisoner's situation and promoting rehabilitation.

A separate category of mindfulness was formed for the means related to relaxation and meditation, as this was mentioned several times. Many had also found breathing exercises and deep breathing helpful in calming themselves down. Creative activity-based methods are available in prisons, and there is a need for them based on the prisoners' responses. Individual responses also highlighted other means of calming down, such as counting to ten and praying.

Based on the responses, prisoners wish and appreciate the opportunity to retreat to their own company when feeling aggressive or wanting to prevent this. Having an opportunity to retreat is important as it increases personal choice in difficult situations and is easy to implement as a rule. However, this is not always possible in prison conditions, particularly in two-person cells or travel cells meant for transit visits. Many prisoners have neuropsychiatric symptoms that complicate their self-regulation and managing their actions, and providing a space for retreating could support prisoners, particularly by reducing sensory stress.

Some of the responses pointed out that the prisoner had no way to alleviate their feelings of aggression. In a few responses, the use of violence and fighting was also mentioned as a means of alleviating negative feelings.

Prisons offer various offence-based activity programmes and general programmes intended to provide support for a life without crime. The main objective of these programmes is to reduce recidivism after release (5). A few responses specifically made reference to participation in a violence programme. Even those responses that did not specifically mention participation in the prison programmes or courses included references to making use of the thinking skills related to the work carried out in the programmes. The responses contained suggestions on issues such as changing one's attitude, focusing one's thoughts on positive things, practising self-control and identifying difficult situations. Many of these topics are discussed in the Prison and Probation Service's activity programmes, such as the Cognitive Skills programme or the Anger Management course. The work carried out in the programmes aims to increase the prisoners' awareness of their own thinking and actions and to create means that would help them act non-violently. Services provided by third parties can also help prisoners develop their thinking skills and behaviour in challenging situations. An example of this

is Helsinki Mission's Aggredi, which provides national support for persons guilty of street violence also during imprisonment.

The overall impression of the responses on the topic was very logical and related to everyday activities. The prisoners highlighted the importance of physical activity and calming down as a promoter of feelings of aggression. It is a good idea to discuss difficult feelings with others and seek help from employees if necessary. Other means considered to reduce feelings of aggression included a regular life rhythm and a healthy diet. Based on the responses, prisoners also used writing to work on their negative feelings.

Prison conditions may have influenced the prisoners' responses by narrowing the content of their ideas, as the available alternatives or means to work on feelings of aggression are limited in the prison. The rules and schedules in place in prisons often do not support creative solutions. However, various international recommendations and decisions of the Parliamentary Ombudsman in Finland point out that meaningful and developmental activities outside the cell should be arranged for prisoners at least eight hours a day. In addition to work and education, such activities may include rehabilitation or physical activity (7).

The response profiles of women and men were similar, which highlights the importance of the themes that emerged for all prisoners.

Recommendations for practice and future research

In Finland, the purpose of imprisonment is to support rehabilitation and a crime-free and intoxicant-free lifestyle. During the sentence term, efforts should also be made to maintain and improve the prisoners' work ability and functional capacity. Prisons offer different activities and services that support these objectives. In prison conditions, employees also aim to act in a way that contributes to a functioning and safe everyday life. Open and respectful interactions and individual work with prisoners can support the rehabilitation of prisoners and prepare them for their release from prison. It is also relevant from the viewpoints of order and security.

It would be important to be able to provide prisoners with means to influence their own actions and help them calm down their aggressive feelings before they turn into aggressive behaviour or violence. From the viewpoint of prison safety and security, effective interactions between prisoners and staff play a crucial role in reducing an aggressive operating culture. For example, teaching and following restorative values (respect, appreciative attitudes between staff and prisoners and among prisoners) has already produced good results, and conflicts have been resolved by negotiating and talking without violence.

Based on the prisoners' responses, it would be important to ensure that prisons offer a wide range of rehabilitative activities and that prisoners know how to seek and access them. While the availability of physical activity seems good at the national level in different prisons, this study indicates that physical activity and outdoor activities

play a special role in prisoner welfare. In addition to gym training, walking and jogging, many other forms of exercise are also needed.

The help provided by creative activity-based methods is reflected in the prisoners' responses. Relaxation, mindfulness, meditation and yoga should be particularly increased in prisons as the prisons' own activities or provided by third-party operators. More prisons could make use of the opportunities for remotely guided physical activities or virtual activities, for example using VR glasses, to increase the availability of rehabilitative activities in the future.

Prisons should always offer spaces for spending time alone and calming down. When designing new prisons, the necessity of such spaces for retreating should also be taken into account from the perspective of prison security. Prison architecture solutions, even minor ones, can be used to provide prisoners with a sense of control and ways to retreat to solitude. For example by utilising colours, materials and lighting to create a more calming environment to release tension from situations in advance.

The prisoner's voice is a valuable addition when looking for ways to carry out better prison and probation work. According to this study, prisoners are happy to respond in a versatile manner and provide additional information useful in the planning of services. Similarly, the Wattu research data included asking the prisoners for suggestions on how to alleviate depression, pain, substance abuse problems and feelings of boredom. Further research should utilise these kind of qualitative data and increase the involvement of prisoners.

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References

- 1) Siltala, H., Hisasue, T., Hietamäki, J., Saari, J., Laajasalo, T., October, M., Laitinen, H.-L., Raitanen, J. 2022: Domestic violence-related use of services and the resulting costs in health, social and legal services. Publication series of the Government's reporting and research activities 2022:52.
- 2) Weightman, M., Kini, R., Parker, R., Das, M. 2020: Pharmacological approaches to managing violence and aggression in prison populations: clinical and ethical issues. *Drugs*; Aucland. Vol.80, Iss, 16. Nov. Springer Nature Switzerland.
- 3) Statistics of the Prison and Probation Service of Finland 2022 Online publication of the Prison and Probation Service.
- 4) Website of the Prison and Probation Service. Values and strategy. Strategy map of the Prison and Probation Service 2022–2025. Published on 4 July 2022.
- 5) Aaltonen, M. & Tyni, S. 2021: Vankeusaikaisten kuntoutusohjelmien vaikutusarvioinnit ja arvioitavuus. *Kriminologia* 1 (1/2021).
- 6) The WHO Prison health framework 2021: A framework for assessment of prison health system performance. World Health Organization. Regional office for Europe.
- 7) Paasonen, J. 2021: Rikosseuraamuslaitoksen turvallisuuden ja valvontatyön ulkoinen arviointi. Rikosseuraamuslaitoksen monisteita 2/2021.





Seventy-five per cent of male and 86% of female participants came to prison from outside the working life. The share of those unemployed before their imprisonment was 64 per cent of men and 69 per cent of women.

Two-thirds of men (62%) and just over half of the women (55%) assessed their work ability to be good.

Compared to the previous prisoner study, in which the corresponding share was over 80 per cent, the ratio has declined.

According to the assessment conducted by the study nurse, in every third case, reduced work ability could be restored through rehabilitation.

Factors reducing work ability of people with prison background appear to include at least characteristics of ADHD, a psychotic disease, poor oral health, low resilience, poor linguistic skills, loneliness and lack of experience of social inclusion.

The prison term can be used as a valuable period for observing and assessing the functional work ability of persons otherwise outside the workforce as well as evaluating obstacles to their employment possibilities.

Work ability and obstacles to employment

Introduction

While the majority of prisoners are people of working age, their status in the labour market is poor. Indeed, the key objective of various activities provided during imprisonment is to improve prisoners' work ability and help them gain access to working life. Work related goals are then formed and included in the prisoner's sentence plan.

Other targets set in the individual sentence plan can include strengthening capabilities for a crime-free and substance-free lifestyle. Work activities play a key role in rehabilitation during the prison term, and they are carried out in prison workshops, in open prisons, and also outside the prison campus.

Both Health Care Services for Prisoners and the Prison and Probation Service participate in the assessment of prisoner's ability to work and to take part in the activities available during the prison term. In health care, the first assessment takes place in the arrival interview, usually conducted within three days of arrival in prison. The need for a more extensive examination of work ability carried out by a physician may arise during health care appointments or at the initiative of the Prison and Probation Service's work ability coordinators. In this case, any obstacles to working ability for the work outside prison are explored. In the prison, there are several specialised employees, such as social workers, substance abuse workers, study instructors, psychologists, vocational skills counsellors and work supervisors, as well as health care staff, nurses, doctors and dentists. Cooperation between the various professional groups enables the multidimensional assessment of the prisoner's work ability.

The best way to assess work ability is to use both objective and subjective methods that combine an expert assessment with the person's own view of their work ability. When asking a person to assess his/her work ability, the concept of work ability may remain unclear for those who have never participated in working life or who have been outside the working life for a long time (1).

One part of the assessment of work ability includes consideration of the context that applies to the person's profession and job (i.e., reflecting on their functional capacity on the job and work environment in which the person has previously worked and where they are expected to work based on their vocational skills and education). An unemployed person may have no prior training or vocational skills or a considerable period of time may have passed since their previous employment relationship. In these cases, the person may also lack a realistic idea of own work ability (2).

Methods

Work ability was investigated based on a questionnaire and a work ability assessment conducted by a study nurse. The research subjects self-assessed their abilities using both a work ability score and a three-step classification: "full work ability", "partial disability" and "full disability". The participants were instructed to assess their current work ability regardless of whether or not they were in paid employment.

The work ability assessment and the work ability scores are suitable for examining the work ability of both employed persons and those outside the workforce (3). The three-step work ability assessment concerning person's current work ability is based on the Mini-Finland study (4).

The work ability score is the first part of the work ability index developed at the Finnish Institute of Occupational Health, which is also used as an independent work ability indicator. The wording used in the index is: "Assume that the best work ability you ever had would have been given a score of 10. How would you score your current work ability on a scale of 0 to 10?" Based on the instructions, a score of 0 means that the person is currently fully unable to work (5). The indicator requires that each person proportions their work ability to their own best work ability instead of some general idea of good work ability scoring ten points (3).

The assessment of work ability consisted of four categories:

1. Full work ability. The research subject had good health and functional capacity. There are no health factors to consider when selecting a profession, work tasks or continuing training or education.
2. Work ability with treatment or rehabilitation. The person's work ability was restricted by a factor related to their health or functional capacity, and there was a need to examine related treatment or rehabilitation needs.
3. Partial work ability. The person's work ability was restricted by a factor related to their health or functional capacity that should be taken into account when selecting a profession, work tasks or education.
4. Disability. The health and/or functional capacity was permanently reduced.

The scale presented here has been developed for public health nurses in Central Uusimaa's multidisciplinary joint services (TYP) for the purpose of recording data on clients' health (6).

The study nurse conducted an assessment based on the data collected after and during the health examination. The health examination included health measurements (blood pressure, height, weight, waist circumference), cognitive tests (word fluency, word-list learning and delayed word-list recall), functional capacity measurements (hand grip strength, getting up from a chair), a substance abuse interview, and a review of the questionnaire filled out by the participant and, if necessary, going through the questionnaire form using an interview.

The results regarding work ability and responses on background information related to work ability are reported using a descriptive method. In addition, any factors related to work ability and possible obstacles to employment that emerged in other sub-studies were examined.

Results

Based on self-reporting, 22 per cent of the research participants were involved in working life, Figure. Of female prisoners, 17 per cent had been in working life before their imprisonment. At the time of their arrival in prison, 64 per cent of men and 69 per cent of women had been unemployed. Of the respondents aged under 30, 72 per cent of men and 81 per cent of women had been unemployed before their imprisonment.

Four per cent of men and ten per cent of women reported being on a disability pension. Four per cent of men and five per cent of women were outside the workforce due to an illness. Four per cent of both men and women were not employed due to other reasons, such as being a stay-at-home mother, a stay-at-home father, a student, a conscript or a pensioner.

Three quarters (75%) of all men and almost nine out of ten women (86%) arrived in prison from outside working life.

The majority of the subjects reported that they would be unemployed jobseekers after their release. Of men, 29 per cent and of women, 25 per cent had a job or study place lined up for them after their release from prison.

More than a third of respondents (37%) estimated that they have no job or study place lined up for them (36% of men and 40% of women). One third of the prisoners (35%) were unable to assess what their situation would be after the release.

When male and female prisoners assessed their current work ability in relation to their own best work ability, men gave their current work ability a score of 7.1 and women a score of 7.2. A typical response was a score of 8, and less than a quarter of the respondents estimated their current work ability to be below 6.

Sixty-two per cent of men and 55 per cent of women considered themselves fully able to work. 32 per cent of men and 41 per cent of women considered themselves partly disabled.

- other (stay-at-home mother or father/student/conscript/pensioner)
- absent from work due to illness
- on disability pension
- unemployed
- employed with employment promoting services
- employed (paid employment/entrepreneur/self-employed)

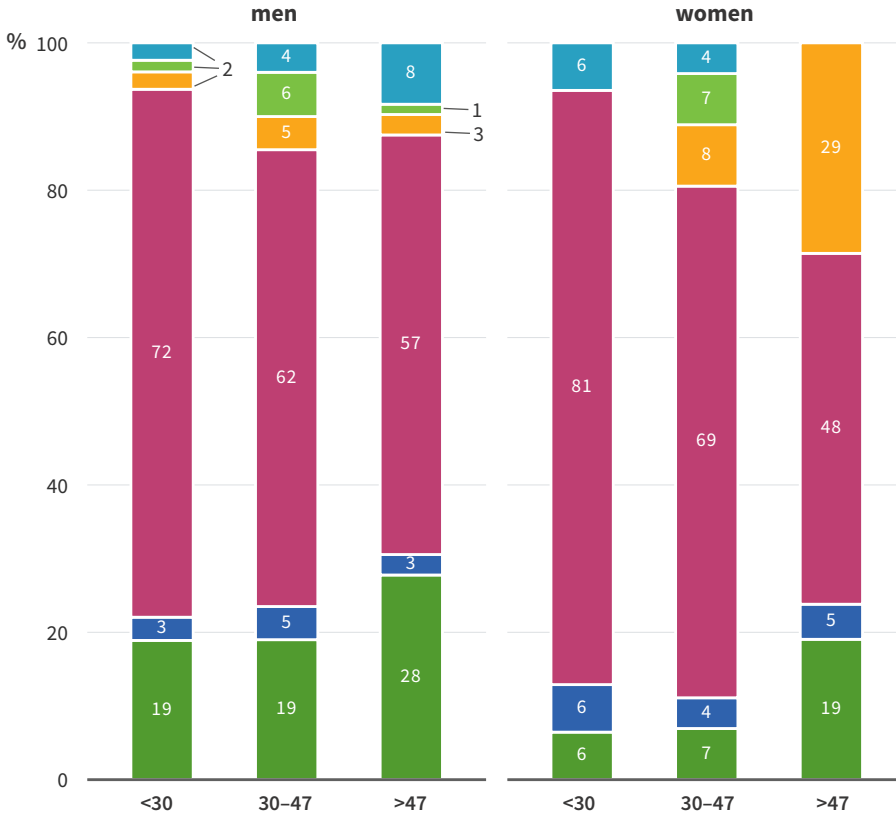


Figure 1. Distributions of responses to the question “What was your employment situation before your imprisonment?”

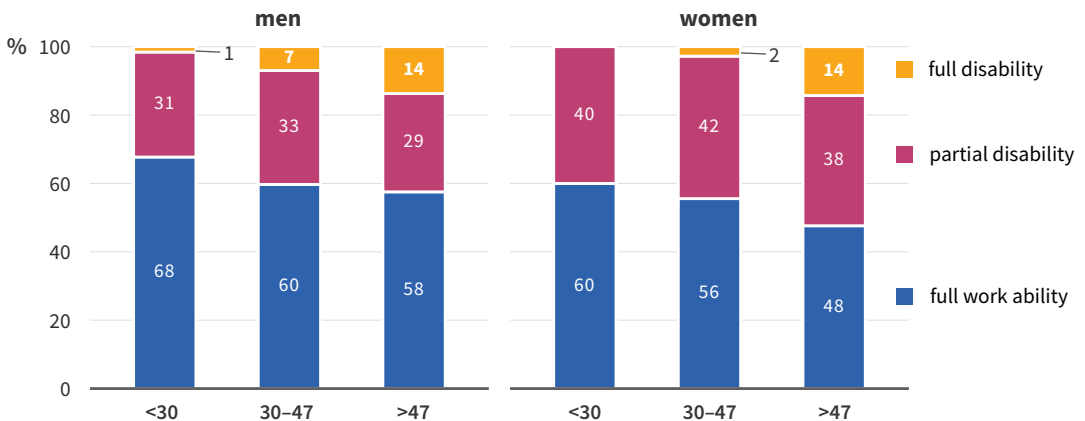


Figure 2. Prisoners’ personal assessment of their work ability by age group and gender (%).

Six per cent of all men and four per cent of all women considered themselves completely unable to work. The proportion of those unable to work increased to 14 per cent in the groups of prisoners aged over 47. One per cent of men under the age of 30 estimated that they had full disability. None of the women under the age of 30 considered themselves totally unable to work, Figure 2.

In the previous prison survey published in 2010, 88 per cent of male prisoners and 80 per cent of female prisoners assessed that they had work ability.

Based on the study nurse’s assessment, more than half of men (54%) and women (56%) were able to work, and one in three men (33%) and 30 per cent of women had work ability through treatment and/or rehabilitation. 11 per cent of men and 12 per cent of women were considered to have partial work ability. The research nurse estimated that one per cent of men and two per cent of women were disabled, Figure 3.

The study nurse’s assessment of the participant’s work ability was one of the common themes found in the different studies. The common themes cutting across the whole Wattu IV study are presented at the start of this report in chapter [Common themes](#). The sub-studies highlighted several observations related to work ability:

- A larger proportion of those who met the criteria of the ADHD was estimated to have some kind of problem reducing their work ability than the other subjects (52% vs. 42%). For more information, see chapter [ADHD and characteristics of neurodiversity](#).
- Prisoners with reduced work ability felt lonely more often than those good with work ability. They were less likely to have a job or study place (19%) lined up after their release compared to others (34%). See chapter [Loneliness and social relationships](#).
- Three out of four (75%) prisoners with a lifelong psychosis had a reduced work ability based on the study nurse’s assessment. See chapter [Psychotic disorders](#).
- Two thirds of prisoners with low resilience were assessed to have partial work ability or full disability. In the higher resilience group, only around one in three had equally inadequate work ability. Low resilience affects negatively the prisoner’s efforts to maintain or improve their work ability, while an experience of disability and being

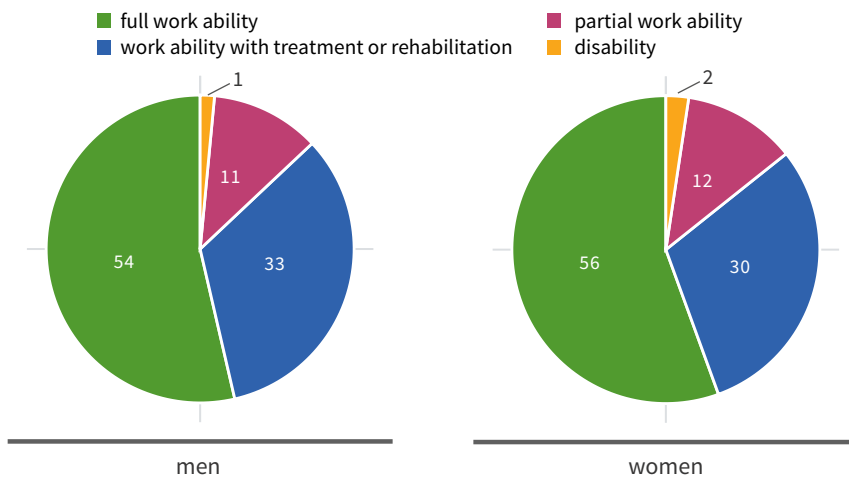


Figure 3. Work ability assessment by a study nurse.

permanently excluded from working life reduces perceived resilience. Cognitive and neuropsychological deficiencies and substance addiction may underlie both phenomena. For more information, see chapter [Resilience](#).

-- The majority of prisoners assessed to have work ability felt that their oral health was good or fairly good and brushed their teeth at least twice a day. A smaller proportion of this group reported pain in their mouth or teeth compared to the group of people with reduced work ability. See chapter [Oral health](#).

– The prisoners assessed to have good work ability performed better in cognitive tasks, such as the Word-list learning I-III and Delayed word-list recall. Those who had completed only basic education or had dropped out or whose work ability was incomplete performed poorly. For more information, see the chapter [Linguistic skills](#).

– Among prisoners with work ability, the average Experiences of Social Inclusion Scale score was 69.2 points. Prisoners with reduced work ability scored significantly lower (61.6 points). The share of experiences of very poor inclusion was approximately twice as high among prisoners who had encountered challenges related to their work ability. The level of social inclusion of prisoners with work ability was closer to the group of the total adult population who estimated that they had reduced work ability. For more information, see chapter [Experience of social inclusion](#).

Conclusions

The study nurse's assessment revealed that the prisoners' work ability was restricted in a number of ways. According to the assessment, the work ability of one in three participants could be restored through treatment or rehabilitation. It is likely that the high unemployment rates of those participating in the study are concealing untreated health problems or disabilities.

Factors that reduce prisoners' work ability and obstacles to gain employment seem to be potential targets for rehabilitation. Difficulties related to mental health, such as ADHD and an experience of a psychotic disorder during one's lifetime, can be alleviated with systematic treatment as can be problems caused by poor oral health. Similarly, rehabilitation can be used to treat shortcomings in skills, such as linguistic capabilities. Experiences of social inclusion and loneliness as well as resilience are related to social capital accumulated through respectful and inclusive interactions.

Recommendations for practice and future research

The prison term provides an excellent opportunity for observing and assessing the work ability of people outside working life. The Prison and Probation Service and health care personnel accumulate observations of functional work ability as well as restrictions to work ability and also strengths that can be used as the basis for making plans for working life after release.

A multi-professional work ability assessment performed during imprisonment benefits both the jobseeker and, after the release, communal service providers. Many rehabilitation, education and employment measures can be launched already during the prison term. Introducing potential public service providers with the prisoner before release makes it easier to seek the services needed after a prison term. A demanding service needs assessment is easier to carry out in prison conditions than after release.

Access to the labour market should be facilitated for both persons with work ability and those with partial work ability. Abstinence from intoxicating substances, achieved regular daily rhythm and sufficient nutrition during the prison term improve and contribute to the work ability and functional capacity of many prisoners, but they are not enough to restore the best work ability of their career. In addition, barriers to employment, such as neurodivergence and mental health problems, can be screened and treated during the prison term.

Ageing of the population poses challenges to the availability of the labour force. In Finland, there is a shortage of labour in many sectors. This emphasises the importance of helping people outside the workforce who consider themselves able to work to find employment, including those released from prison.

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No conflicts of interest

References

- 1) Gould, R., Ilmarinen, J., Järvisalo, J., Koskinen, S. (eds.) 2006: Työkyvyn ulottuvuudet. Terveys 2000 -tutkimuksen tuloksia. Finnish Centre for Pensions, Social Insurance Institution of Finland, National Public Health Institute of Finland, Finnish Institute of Occupational Health, Helsinki.
- 2) Kerätär, R. 2016: You'll see more when you look from a distance. Multidimensional assessment of work ability and needs for rehabilitation among long-term unemployed. Doctoral dissertation. University of Oulu.
- 3) Gould, R., Härkäpää, K., Koskinen, S. 2015: Työkyvyn arviointi väestötutkimuksessa. TOIMIA-suositus (referred to on 23 August 2023). <https://urn.fi/URN:NBN:fi-fe201703315913>
- 4) Aromaa, A., Heliövaara, M., Impivaara, O., Knekt, P., Maatela, J., Joukamaa, M., Klaukka, T., Lehtinen, V., Melkas, T., Mälkiä, E., Nyman, K., Paunio, I., Reunanen, A., Sievers, K., Kalimo, E., Kallio, V. 1989: Health, Performance and Well-being in Finland. Basic results from the Mini Finland Health Survey. Publications of the Social Insurance Institution AL:32, Helsinki.
- 5) Tuomi, K., Ilmarinen, J., Jahkola, M., Katajarinne, L., Tulkki, A. 1997: Työkykyindeksi. Työterveyshuolto 19. Finnish Institute of Occupational Health, Helsinki.
- 6) Haapalainen, M. 2017: Fraasit terveydenhoitajien terveystietojen kirjaamiseen Keski-Uudenmaan TYP-palveluissa. Tiedonanto.

Wattu-do

This chapter highlights the themes that emerged in the articles that can help in utilising the new data on the health and welfare of prisoners. The themes provide the agents, experts and decision-makers in the field of social welfare and health care with an opportunity to develop their activities and also introduce brand-new initiatives. The chapter is divided into two sections, the first of which aims to support the development of operations at the practical level. The second section complements opportunities for scientific research presented in the articles from the perspective of practical development.

Development of operations in practice

Resilience. Resilience can be strengthened in various ways based on the prisoner's individual situation. The efforts to strengthen resilience may involve supporting the prisoner's personal characteristics, such as confidence, ability to regulate emotions, problem-solving skills and personal agency. Increasing resilience may also include strengthening the prisoner's closest relationships and supporting the prisoner to join social activities. Resilience can be strengthened during imprisonment, for example, by treating prisoners' mental symptoms and traumas, and providing environmental support for restoring stability, adapting to one's situation and ensuring that prisoners are heard.

Alexithymia. Many prisoners both write and read a lot in prison compared to their previous life situations. Encouraging and enabling the prisoners to write letters and

read books is worthwhile. There is evidence of the positive impacts of many other cultural activities on mental welfare. Excellent results have been obtained in the treatment of young people with severe behavioural symptoms from activities such as rap and theatre workshops. There have also been good experiences of theatre activities in the rehabilitation of adult prisoners.

Loneliness. The experiences of receiving help and support from others, even from prison workers, are clearly more common among women than men. Is this due to the way women regard help and support, or is the available help and support somehow different for men and women? Men's social relationships and experiences of loneliness should be taken into account during imprisonment. The release of prisoners and their placement outside the prison is a phase marked by insecurity and uncertainty both for men and women. This raises a question of how sufficient the services for reintegration into society are. The question of securing housing is particularly important.

The usage of health services. One in four prisoners had more than seven healthcare appointments during the previous year. This number is several times higher compared to the rest of the population. Heavy use of services is related to the cost-effectiveness of health care, but also essentially to the patient's experience of the treatment they receive. Both can be influenced during the prison term when there is more time and opportunities for reviewing and drawing up care or service plans than elsewhere in health care. The need for treatment is emphasised in the special group of prisoners who have undergone a mental examination. We could refer to those persons who end up in prison instead of in care as forensic psychiatric prisoners, as they stand out from other prisoners due to their high service needs.

Linguistic skills. Speech therapy can be used to assess and rehabilitate prisoners' speech, language and communication skills. Supporting communication skills allows prisoners to benefit more from programmes during incarceration and cope better in interactive situations. The assessment of the need for linguistic rehabilitation should be extended to young people acting out through criminal behaviour. As the effectiveness of speech therapy is also based on sharing information about communication disorders and environmental guidance, the staff working with prisoners should be provided with training on communication difficulties and how to support them.

Aggression. Based on prisoners' self-assessment, prisoners should be provided with sufficient opportunities to discuss their aggressive behaviour with prison staff and prison health care staff during their prison term. Prison planning should take into account the need for spaces where prisoners can retreat, the possibility of spending time alone and sufficiently diverse opportunities for physical activity. The prisoner's voice is a valuable addition when looking for ways to carry out better prison and probation work. By involving prisoners, it is possible to find new ideas for services.

Gambling problems. As gambling problems are rather common among prisoners, there is reason to integrate screening for gambling into prison and probation practices. Support materials and training produced by the Finnish Institute for Health and Welfare, together with other organisations involved in the field of gambling are avail-

able for addressing gambling and can be tailored to the needs of prison and probation workers.

Doping. The risk of the spread of infectious diseases is high in prisons, as prisoners do not have the possibility to exchange needles. The study clearly showed that doping agents are also used during imprisonment. This must be taken into account in the development of health services and the training of different professional groups working with prisoners. A harm-reduction approach helps professionals encounter users in an appropriate way and increases occupational safety in closed conditions.

Substance use. The time spent in prison should be used more as an opportunity not only for quitting substance use but also for reducing the harm associated with use. During prison terms, prisoners should be provided with information to help them identify overdose situations, practise resuscitation skills and alerting for help, and prisoners should be instructed on how to use the naloxone-nasal spray. Those released from prison should be offered naloxone-nose sprays for use in overdose situations. During imprisonment, opioid users' opioid tolerance decreases, which further increases the risk of death by overdose. Therefore, the initiation of opioid substitution therapy is also an effective way to prevent overdoses. Health counselling related to the use of intoxicating substances by injecting should be targeted especially at women, young prisoners and offenders returning to prison. As intravenous intoxicant use is extremely common among prisoners, and some of them are likely to continue to intravenously use during their imprisonment, the prisons should offer an opportunity to exchange sterile injection equipment anonymously.

Smoking. To support the cessation of tobacco and nicotine products among prisoners, Health Care Services for Prisoners and the Prison and Probation Service should have a clear service chain for addressing tobacco and nicotine use, carrying out a mini-intervention, making entries, providing effective treatment and subsequent monitoring. Support measures should be available both in closed prisons and in open prisons. These measures should include support based on group counselling and individual counselling combined with short-acting and/or long-acting nicotine replacement therapy or other medical treatment if necessary.

Infectious diseases. The prevalence of HIV and chronic hepatitis C infections is significantly higher in prisons than in the population on average, and sharing injection equipment occurs in prisons, resulting in an increase in the risk of the spread of blood-borne infections. Safe injection equipment reduces the risk of infection. It is worrying that most prisons no longer provide access to disinfectants for cleaning used syringes and needles. It is important to restore the availability of disinfectants in prisons and to instruct prisoners on how to clean needles and syringes and make the use of disinfectants as easy as possible. The safest option would be to enable replacing used injection equipment with sterile ones in prison.

Oral health. The poor oral health experienced by prisoners, especially the high incidence of pain and dental damage caused by violence and accidents, affects how oral health care services – including those offered in prison and elsewhere in the health

care system – should regard patients with a criminal background coming for an appointment. The results of this study suggest that there is also a need to routinely address issues such as dentophobia and to aim to provide every patient with as respectful care experience as possible.

Work ability. The prison term serves as a good period for observing the functional work ability of persons outside the workforce and assessing obstacles to employment. A multi-professional work ability assessment performed during imprisonment benefits both the jobseeker and, after the release, the work and business activities of the municipality of residence. Many rehabilitation, education and employment measures can already be launched during the prison term. Charting potential public services and their employees with the prisoner before their release makes it easier for them to seek the services after the prison term. A demanding service needs assessment is easier to carry out in prison conditions than after release. The assessment benefits not only the individual but also the wellbeing services counties' activities after the prisoner's release.

Psychotic disorders. Prisoners with psychosis are a particularly vulnerable group of prisoners. Key cornerstones of the treatment of a prisoner with a psychotic disorder include encouraging the patient to commit to medication and other treatment, paying attention to other simultaneous disorders, such as substance abuse disorder in the person's treatment plan, and also ensuring continuity of treatment after imprisonment. It is important to identify offenders with mental illness as early as possible in the judicial process. Those involved in the pre-trial investigation and court proceedings process could benefit from additional training aimed at better identification of offenders. In addition, the judicial system should be encouraged to consult forensic psychiatry professionals with a lower threshold on topics such as the need for a mental examination. Persons who undergo mental examination and subsequently end up in prison with full or diminished criminal responsibility also appear to need psychiatric treatment.

Traumatisation. Experiences of trauma and violence are common among prisoners. Men have more symptoms of trauma than before, and there are grounds for developing trauma-conscious treatment practices aimed at men. In addition to actual treatment, it is important to enable corrective interactions in day-to-day situations that pay attention to traumatisation.

ADHD and characteristics of neurodiversity. There is need to invest more in particularly identifying neurodivergent female prisoners, their special needs, and develop forms of support and rehabilitation in both planning further studies and the implementation of day-to-day practice in prison. Based on the results of the study, there is a need to develop and enhance the referral of prisoners to a neuropsychiatric assessment period. The ADHD screening tools are not appropriate in a situation where one in two sentenced prisoners have symptoms indicative of ADHD.

Research ideas for developing operations

The perspective of the Prison and Probation Service. A similar study should be used to examine the health status of probation clients and its relationship with the situation

of prisoners. While prisoners released for supervision may be compared with those examined in the Wattu IV study under certain conditions, we may assume that the health of community service clients and monitoring service clients differs from that of prisoners. However, it is worth pointing out in relation to the implementation of this study that the Health Care Services for Prisoners is not responsible for the health care services of probation clients, which are organised by wellbeing services counties.

The Prison and Probation Service's data interest also covers other special groups in prisons, such as foreign prisoners, fine default prisoners and remand prisoners, which were not reached in this study. The information on changes occurring in prisoners' health during the term of sentence is significant to the development of the Prison and Probation Service. Related research would require the monitoring of prisoners or the other groups mentioned above during the term of sentence, also taking into account the conversion sentences of community sanctions to imprisonment.

Comparisons between the prison population and the rest of the population. The health examination and measurement data and survey responses collected in this study can be compared to data from more extensive population studies. The comparison of common variables with both the FinHealth2017 study as well as the more recent Healthy Finland study significantly increases understanding of the health status of both prisoners and the entire population. Based on the Wattu project, data collected from the prison population could be integrated with THL's established activities.

Follow-up study. The consent given by the Wattu IV research subjects includes a register follow-up study. The study requires separate resources and planning. If realised, it will enable a unique longitudinal view into the population group where there are major intergenerational health and wellbeing problems, for instance.

In-depth studies. The dataset collected in Wattu IV is part of THL's data resources. It is stored and it can be utilised based on THL's practices and data access authorisation procedures. THL is the controller of the data. The Prison and Probation Service oversees the use of criminal background information attached to the data in accordance with a separate permit procedure.

The prisoner study has a website which contains a summary of the description of the data content, instructions for carrying out further research and key study results. The aim is to maintain an up-to-date picture of the completed and ongoing further research projects on the website. The website is available at www.thl.fi with the search term "Wattu".

This report presents several research opportunities in the Recommendations for practice and future research section at the end of each article. We ask for information about any further studies or actions prepared based on this report and Wattu data, including theses and articles, to be provided to THL to make up-to-date information that benefits researchers and, ultimately, prisoners, available to all.

Appendix 1: Information sheet about the Health and Wellbeing of Prisoners study

Information sheet about the Health and Wellbeing of Prisoners study

You are asked to participate in the Health and Wellbeing of Prisoners study. We invite 500 randomly selected prisoners to participate in the study.

The fourth extensive prisoner study continues a research tradition that began in the 1980s. The study aims to produce up-to-date data on prisoners' health, physical illnesses, mental health and the need for treatment and rehabilitation. This is the first time we are conducting the prisoner study using the same methods as other population studies by the Finnish Institute for Health and Welfare, making it possible to reliably compare prisoners' health with the rest of the population.

The purpose of the study is to:

- examine the prevalence of various illnesses and treatment needs in prisoners,
- improve services offered to all prisoners during imprisonment, and
- promote the welfare of prisoners also after their prison term.

The study is carried out by the Finnish Institute for Health and Welfare (THL), the Health Care Services for Prisoners and the Prison and Probation Service. The Ethics Committee of the Hospital District of Southwest Finland has approved the study. Chief Physician Mika Rautanen, Health Care Services for Prisoners, is responsible for the study.

What is done in the study?

The study is carried out in several parts. It includes:

- A questionnaire to collect information on illnesses, health, substance use and social relationships.
- A health examination that includes measuring blood pressure, weight, length and waist circumference and performing muscle strength and memory tests.
- Blood samples used to analyse regular health-related values (total cholesterol, HDL cholesterol, triglycerides, lipoproteins, glutamic transferase, alanine aminotransferase, aspartate aminotransferase, inflammatory value CRP, glucose, haemoglobin, creatinine, albumin, uranium, calcium, insulin, HIV antigen, hepatitis A antibodies, hepatitis B S-antigen, hepatitis C antibodies, COVID-19 antibodies and haemoglobin, haematocrit and total red cell count and total white cell count).
- In addition, 300 randomly selected subjects get to undergo an oral health examination and mental health interviews.

The above data are collected in an identifiable format (i.e. they contain personal data). The identifiable data is used to obtain a comprehensive view of prisoners' health. Personal data are processed carefully and in accordance with the principles of scientific research.

In connection with the health examination, you will also receive a questionnaire filled out anonymously. The anonymous questionnaire responses cannot be connected to individuals.

How to participate in the study?

You will receive a questionnaire containing questions about physical illnesses, psychological symptoms, substance use, quality of life and social relationships. Reserve 3–4 hours for filling up the questionnaire and remember to take breaks! For example, it is a good idea to fill out the questionnaire in two days.

Once you have filled out the questionnaires, you will meet a study nurse. The study nurse will carry out a health examination and check the form you have filled out. This letter contains information about the time of the health examination.

Participation in the study is voluntary and can be stopped at any point. Participation will not cause you any loss of earnings. You will receive the same compensation for the time you spend on the study as when you participate in other prison work, education or rehabilitation activities.

After the health examination, the study nurse will book appointments for your other examinations. These include blood sampling, oral health examination and an interview used to investigate mental health disorders.

Why does your participation in the study matter?

Your participation is important to make sure that the results comprehensively reflect the health of all prisoners. Such information can be used to improve the services provided during the prison term. By participating in the study, you get to learn about your own health and wellbeing.

What will happen to the research data after the study?

The Finnish Institute for Health and Welfare will store and process the research data in keeping with its secrecy obligation and in compliance with the Data Protection Act. The research data will be stored separately from any data identifying the subjects. Individual researchers do not process personal data. All persons involved in collecting and processing the data are bound by a secrecy obligation.

As the aim of the study is to develop the services offered during imprisonment, the data collected in the study can be combined with data from different controllers: The Health Care Services for Prisoners (patient data), Prison and Probation Service (data on served sentences), Finnish Institute for Health and Welfare (data on illnesses and their treatment, appointments and procedures), Social Insurance Institution of Finland (data on benefits and reimbursements), Statistics Finland (data on education and employment status, socio-economic status and causes of death), Finnish Centre for Pensions (data on pensions, rehabilitation and employment relationships), Tax Administration (taxation data), Population Register Centre (name, date and place of birth, address information, gender, marital status, mother tongue, citizenship) and Finnish Defence Forces (service category data).

Separate permission will be obtained from each controller for the purpose of combining the data. The dataset created from the data collected in the study and associated data files does not contain any identifying data (i.e., names or personal identity codes). The register study phase is estimated to last approximately 20 years, during which service needs will be monitored 2–4 times.

Some of the laboratory test results (viral hepatitis A, B and C, HIV, blood count) will be stored in the patient records system of the Health Care Services for Prisoners to make sure you get the treatment you need if necessary. Other laboratory samples are analysed and stored at the Finnish Institute for Health and Welfare. The data collected from the blood samples is the same as in other population health studies to compare the results with the entire Finnish population. The samples are stored until further notice and can be used to investigate individual variation in chronic diseases and, for example, metabolism.

The data and samples collected in the study can be used for studies carried out by THL in cooperation with different universities and research institutes in Finland and Eu-

rope. The collected data can be transferred in a coded format to Finnish and international partners or databases. A written agreement on such collaborations is always made in advance between the Finnish Institute for Health and Welfare and the partner. The partners will have access to the necessary data and samples without identifying personal data.

Reporting of findings

Reports, statistics and scientific articles will be published on the study results. In reporting the results, it will always be ensured that individual respondents cannot be identified.

Contact information

For information about the study, contact the study nurse working in your prison. You can contact the physician in charge of the study through the study nurse.

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Information sheet 2.0 22 October 2020

Appendix 2: Description of the SCID method

Structured Clinical Interview for DSM-IV (SCID-I & SCID-II)

SCID-I (1) and SCID-II (2) are semi-structured interview methods that can be used to assess whether persons meet the diagnostic criteria for mental health (SCID-I) and personality disorders (SCID-II) classified in the Diagnostic and Statistical Manual of Mental Disorders DSM-IV acutely (meeting the symptom criteria during the previous month) and during one's lifetime (meeting the symptom criteria at some point in one's lifetime).

SCID-I contains sub-modules of the most common DSM-IV disorder groups such as affective disorders, schizophrenia and other psychotic disorders, substance abuse disorders, anxiety disorders, somatoform disorders, eating disorders and adjustment disorders. SCID-II contains specific sub-modules for each DSM-IV personality disorder: avoidant, dependent, obsessive-compulsive, passive-aggressive, paranoid, schizotypal, schizoid, histrionic, narcissistic, borderline, antisocial and unspecified personality disorder.

SCID-I and SCID-II are key cornerstones of the clinical assessment of mental health disorders and personality disorders (3), and they have established their status as diagnostic tools for specialised psychiatric care also in Finland (4).

SCID-I has been found to be suitable for the assessment of psychoses and substance abuse disorders. In assessing disorders in the psychosis group, the tool has been found to have good inter-rater-reliability ($\kappa=0.82$) as well as test-retest-reliability ($\kappa=0.60$) (5).

Regarding schizophrenia specifically, the inter-rater reliability has been found to be excellent ($\kappa=0,94$) (6). In the assessment of substance abuse disorders, the inter-rater reliability of the tool has been found to be good regarding assessing both alcohol dependency ($\kappa=0,65$) and other substance abuse disorders ($\kappa=0,77$) (3).

SCID-II has been found to have excellent inter-rater reliability both in the assessment of all personality disorders ($\kappa=0,85$, range 0.77–0.94) as well as separately in the assessment of antisocial personality disorder ($\kappa=0,78$) (3).

- 1) First, M.B., Spitzer, R.L., Gibbon, M., Williams, J.B.W. 2002: Structured clinical interview for DSM-IV axis I disorders, clinician version. New York: Biometrics Research, New York State Psychiatric Institute.
- 2) First, M.B., Gibbon, M., Spitzer, R.L., Williams, J.B.W., Benjamin, L. 1997: Structured clinical interview for DSM-IV Axis-II personality disorders. Washington, DC: American Psychiatric Press.
- 3) Lobbestael, J., Leurgans, M., Arntz, A. 2011: Inter-rater reliability of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) and Axis II Disorders (SCID II). *Clinical Psychology & Psychotherapy*, 18(1), 75-9. doi: 10.1002/cpp.693.
- 4) Jääskeläinen, E. ja Miettunen, J. 2011: Psychiatric rating scales in clinical work. *Lääketieteellinen aikakauskirja Duodecim*, 127(16), 1719–1725. Accessed 21 May 2023: <https://www.duodecimlehti.fi/duo99726#s8>.
- 5) Chimielewski, M., Clark, L.A., Bagby, R.M., Watson, D. 2015: Method matters: understanding diagnostic reliability in DSM-IV and DSM-5. *Journal of Abnormal Psychology*, 124(3), 764–769. doi: 10.1037/abn0000069.
- 6) Skre, I., Onstad, S., Torgesen, S., Kringlen, E. 1991: High interrater reliability for the Structured Clinical Interview for DSM-111-R Axis I (SCID-I). *Acta Psychiatrica Scandinavica*, 84, 167-173. doi: 10.1111/j.1600-0447.1991.tb03123.x.

Appendix 3: Description of assessment methods for ADHD and autism spectrum traits

Diagnostic Interview for ADHD in Adults (DIVA 2.0)

DIVA 2.0 (Diagnostic Interview for ADHD in Adults) is a semi-structured interview used to diagnose ADHD in adults. The DIVA 2.0 interview is based on the DSM-IV criteria for ADHD, and the newer DIVA-5 is based on the DSM-5 criteria. The criteria are that ADHD symptoms must have been present throughout the person's life until the present assessment. ADHD symptoms occurring in childhood are investigated retrospectively from ages 5–11. The symptoms need to be associated with a significant clinical or psychosocial decline in functioning that affects the individual in two or more areas of life.

The interview consists of three parts, each of which is separately applied to the person's current situation and childhood: the criteria for attention deficit (9 symptom criteria), the criteria for hyperactivity and impulsivity (9 symptom criteria) and the age of onset for the symptoms and the resulting decline in functional capacity. For each symptom, there are examples of how the symptom may manifest at different ages. Based on the DSM-5 criteria, 6 or more symptoms of each dimension (attention deficit or hyperactivity and impulsivity) must have been present for at least 6 months and be inappropriate for the person's developmental level, and some of the symptoms of attention deficit or hyperactivity/impulsivity causing impairment must have emerged before the age of 12. Based on the criteria, three sub-types can be identified based on whether the person meets only the attention deficit criteria (predominantly inattentive

type) or the hyperactivity and impulsivity criteria (predominantly hyperactive-impulsive type) or both attention deficit and hyperactivity/impulsivity criteria (combined type).

Screening tool (ASRS-A) of the Adult ADHD Self-Report Scale (ASRS-V1.1)

The Adult ADHD Self-Report Scale (ASRS-V1.1) is an 18-item self-assessment survey used in screening for ADHD in adults based on the ADHD diagnostic criteria of the DSM-IV classification system. ASRS-A is a shorter screening section of the ASRS form, containing six questions. ASRS-A is only suitable for use as a screening tool and is not sufficient on its own for diagnosing ADHD. The respondent is asked to assess their own condition and activities in the last six months. The respondents answer each of the six questions on a five-point Likert scale, which assesses the frequency of the occurrence of each symptom (0=never, 1=rarely, 2=sometimes, 3=often, and 4=very often). If four or more of the responses to questions 1–3 are sometimes, often, or very often, or to questions 4–6 often or very often, the respondent is considered to have met the screening tool criteria.

Screening tool (AQ-10) of the self-administered Autism Spectrum Quotient (AQ)

The Autism Spectrum Quotient (AQ) is a self-administered questionnaire intended to screen for autistic traits and can be used as a basis for assessing the need to pursue a diagnosis in the autism spectrum. The questionnaire is suitable for cognitively fit young people and adults aged 16 or over. On average, people in the autism spectrum score higher in the questionnaire than the rest of the adult population and, in the general population, men score higher than women on average.

AQ contains 50 statements in five different domains (social skills, communication skills, imagination, attention switching and attention to detail). The shorter AQ-10 screening tool contains ten of these 50 statements. The respondents choose a response to each statement on a four-step Likert scale (definitely disagree, slightly disagree, slightly agree and definitely agree). The cut-off limit for AQ-10 is six points.

The Neurodiversity Profiling Tool (NPT) 2.0

The NPT 2.0 screening tool was originally developed in the 2020 Oikeusturva ja kuntoutus kuntoon (“Ensuring legal protection and rehabilitation”; STEA 2018–2020) project of the Autism Foundation Finland to identify the needs of neurodivergent prisoners, and the development work has been later continued in the Revion project of the Autism Foundation Finland (OM, 2021–2022). NPT 2.0 is completed based on staff observations and has been developed to identify the special needs and traits related to the ADHD and autism spectrum of persons serving a prison sentence that undermine the person’s ability to cope in the criminal justice system and complicate reintegration to society after the term of imprisonment. NPT 2.0 contains five statements related to ADHD and five statements related to the autism spectrum.

The profiling tool consists of questionnaires commonly used in assessing ADHD and autism (Adult ADHD Symptom Rating Scale – Observer Version, ASRS-O; Autism Spectrum Disorder in Adults Screening Questionnaire, ASDASQ). Based on observations and a supplementary interview performed if necessary, the assessor evaluates how well the statements apply to the person undergoing the assessment (0 = Do not apply at all, 1 = Apply somewhat, 2 = Apply well). There is also a further alternative, “Difficult to assess”, as it may not be possible to take a stand in the profiling due to exceptional circumstances or spending only a little time with the person subject to the assessment. Each statement contains illustrative examples of how the trait may occur in everyday activities and social situations. These examples support the assessment and the person does not need to meet all of them for the statement to apply to them. An interview of the assessed prisoner and/or prison staff may be used as a source of further information. Sections used to assess ADHD and autism spectrum traits are filled out on each assessment subject. The maximum score for both the ADHD and autism spectrum sections is 10 and the maximum score for the whole tool is 20.

- 1) Diagnostic Interview for ADHD in Adults 2.0 (DIVA 2.0) In Kooij, JJS. Adult ADHD. Diagnostic assessment and treatment. Springer, 2012.
- 2) Kessler RC, Adler L, Ames M et al. The World Health Organization Adult ADHD Self-Report Scale (ASRS): a short screening scale for use in the general population. *Psychol Med* 2005;35:245-56
- 3) Allison C, Auyeung B, Baron-Cohen S. Toward brief “Red Flags” for autism screening: The Short Autism Spectrum Quotient and the Short Quantitative Checklist for Autism in toddlers in 1,000 cases and 3,000 controls [corrected]. *J Am Acad Child Adolesc Psychiatry* 2012;51:202-212.e7
- 4) Kara S, Mikkola K, Tuusa M. Neurokirjon henkilöiden vankeusaikainen kuntoutus: opas ja kuntoutusmalli vankien kanssa työskenteleville. Helsinki: Autism Foundation Finland 2021. <https://autismisaatio.fi/ajankohtaista/oikeusturva-ja-kuntoutus-kuntoon-2020.html>

Appendix 4: Working group and acknowledgements

Prisoners

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Liisa Suominen, University of Eastern Finland; Sisko Huuromonen, University of Eastern Finland; Eero Raittio, University of Aarhus and University of Eastern Finland; Emil Leppänen, University of Eastern Finland; Solja Niemelä, University of Turku; Kristiina Kuussaari, THL; Kirsimarja Raitasalo, THL; Kaisa Mishina, University of Turku; Tanja Matilainen, University of Turku; Saana Myllyntausta, University of Turku; Jonna Levola, University of Helsinki; Otto Ruokolainen, THL; Hanna Ollila, THL; Patrick Sandström, THL and Filha ry; Sari Castren, THL; Kalle Lind, THL; Jussi Palomäki, THL; Jukka Koskelo, A-Clinic Foundation; Henrikki Brummer-Korvenkontio, THL; Cristina González Pérez, THL; Wioleta Kitowsja, THL; Kirsi Liitsola, THL; Lars Leemann, THL; Anna-Maria Isola, THL; Niina Junttila, University of Turku; Katri Mikkola, University of Helsinki and Autism Foundation Finland; Katja Koskialho, University of Jyväskylä; Katariina Keinonen, University of Jyväskylä; Raimo Lappalainen, University of Jyväskylä; Petra Laivonen, University of Helsinki; Taina Laajasalo, THL; Kitta Ripatti, THL; Marko Manninen, THL; Paula Tarsaranta, Health Care Services for Prisoners; Piritta Lindroos-Sipiläinen, Health Care Services for Prisoners; Seija Pekkala, University of Helsinki; Päivi Rainó, HUMAK University of Applied Sciences; Hanna Markkanen, Tmi Terapiapalvelut Hanna Markkanen, Sanat Haltuun project; Anne Raivisto, Prison and Probation Service; Miisa Törölä, University of Eastern Finland

Also, an important group of Prison and Probation Service employees in different research prisons as well as several specialists from THL, Health Care Services for Prisoners and third parties who have participated in planning the Wattu study over the years, without whose input it would not have been possible to implement this study.

Appendix 5: Wattu grandfather reminisces

In the early 1970s, three young future researchers in psychiatry, Docent V.J. Mattila (†), Professor Emeritus R.K.R. Salokangas and yours truly had been temping for a psychiatrist at Kakolanmäki, the Turku city prison. This was the setting for the first scientific prison study, the Turku Prison Study (1, 2, 3).

I was hired to a permanent position as a senior ward physician at the Psychiatric Hospital for Prisoners in 1978, after having recently started my doctoral research in the Social Insurance Institution's extensive epidemiological health study, the Mini Finland survey.

Together with Matti Tuovinen, we began by carrying out a study on mental examination patients at the Psychiatric Hospital for Prisoners (4, 5). I was later asked to serve as a secretary in a working group called the Development of Health Care at the Prison Service. It turned out that there was little research data available on the health of prisoners either in Finland or in other countries. Together with Matti E. Lamberg, who was the chairman of the working group and the chief physician at the Prison Service, I became convinced that a health study of Finnish prisoners was necessary. That's where it all began!

I benefited a lot from everything I had learned in the Mini Finland project about carrying out an epidemiological study. We did not even try to obtain an external grant, but based on our later experiences, it is unlikely that this would even have been available for a prison study. We mainly carried out the study at work and during our leisure time with a spirit of volunteering.

It is thanks to two legendary wardens that the study could be completed: Director General K.J. Lång and Chief Physician Matti Tuovinen. As often happens in research projects, the original Wattu working group gradually broke up. As a result, I ended up being responsible for writing the report on the first research phase (6), and the new, smaller cross-sectional study carried out a few years later was unfortunately very poorly reported. Time kept moving on and I left the prison world for a university. That seemed to be the end of the prison study.

I must bring attention to another important name: Virpi von Gruenewaldt, a health inspector at the Prison Service, coordinated the fieldwork in both stages of the research. It is thanks to her that we were able to carry out both of the field studies. Later, one day, Virpi called me at the University of Oulu and convinced me to launch the third Wattu research phase (7). Ultimately, we were able to implement it in cooperation between the Prison Service and the University of Tampere, where I had continued my career.

It is clear that numerous people have participated in these various research phases. However, I will settle for only being able to thank the above persons for making the Wattu study come true! I would like to thank Mika for the opportunity to write this article and wish him every success from the bottom of my heart in continuing the Wattu study!

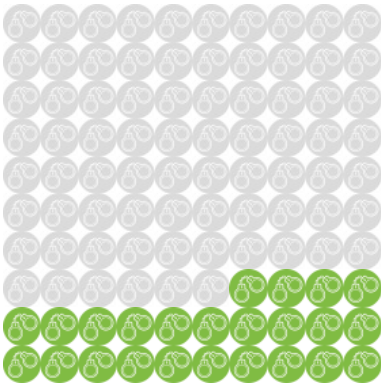
One more thing: I have been often asked why there is the letter W in the name of the project. Well, back when this all began, we felt that this would be better instilled in the international scientific community than a plain old “V”.

In Yyteri, May 2023

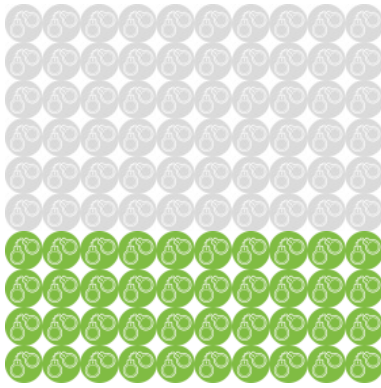
Musi Joukamaa

References

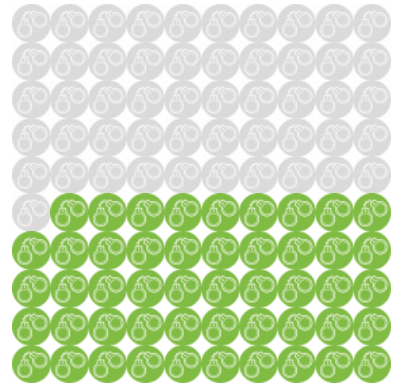
- 1) Jäppinen, V.I., Mattila, V., Joukamaa, M.I., Salokangas, R.K.R., Salmi, L., Holm, H. 1978: Turku Prison Study I: Research design and prisoners' background. *Kansanterveystieteen julkaisu* M 42, Turku.
- 2) Salokangas R.K.R., Jäppinen, V.I., Salmi, L., Mattila, V., Joukamaa, M.I., Holm, H. 1978: Turku Prison Study II: Prisoners at psychiatric clinics. *Kansanterveystieteen julkaisu* M 43, Turku.
- 3) Mattila, V., Joukamaa, M.I., Holm, H., Salokangas, R.K.R., Jäppinen, V.I., Salmi, L. 1978: Turku Prison Study III: Prisoners at the Psychiatric Hospital for Prisoners. *Kansanterveystieteen julkaisu* M 44, Turku.
- 4) Joukamaa, M. and Tuovinen, M. 1983: Criminality and psychological disturbance of Finns remanded for psychiatric examination. *Journal of Forensic Science Society* 1983;23:170–171.
- 5) Joukamaa, M. and Tuovinen, M. 1983: Finnish arsonists. *Journal of Forensic Science Society* 1983;23:172–173.
- 6) Joukamaa, M. 1991: Suomalaisten vankien terveystilanne, English summary: The Health of Finnish Prisoners. *Kansanterveystieteen julkaisu* M 107/91, Turku.
- 7) Joukamaa, M. and working group 2010: Health, working capacity and need for treatment of criminal sanction clients. Publications by the Criminal Sanctions Agency 1/2010. Prison and Probation Service. Available at: https://www.rikosseuraamus.fi/material/attachments/raise/julkaisut-risenjulkaisusarja/6AqMACEr8/RISE_1_2010_Rikosseuraamusasiakkaiden_terveys_tyokyky_ja_hoidontarve.pdf



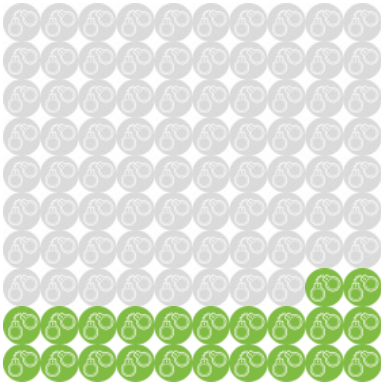
Using five or more medications
(24%)



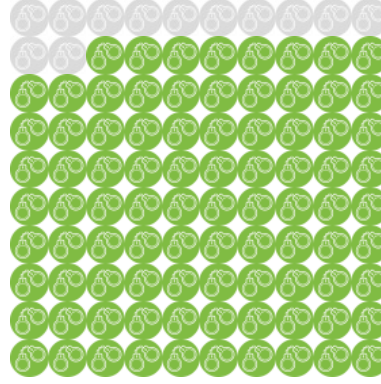
Women with no job or study place
lined up after release (40%)



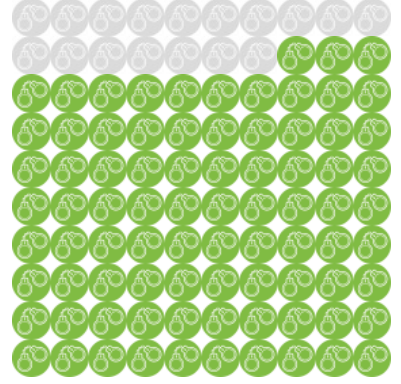
Based on self-assessment, intending
to have broken the cycle of
imprisonment five years after release
(49%)



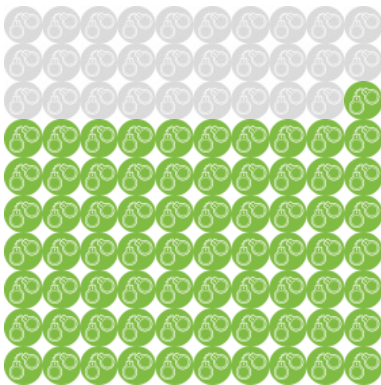
Self-reported involvement in
working life (22%)



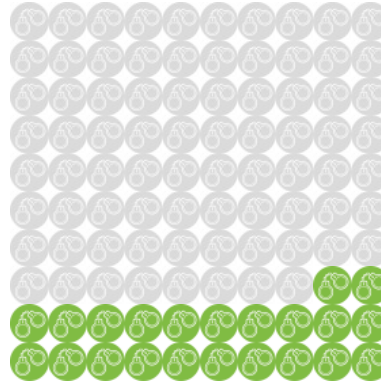
Some personality disorder (88%)



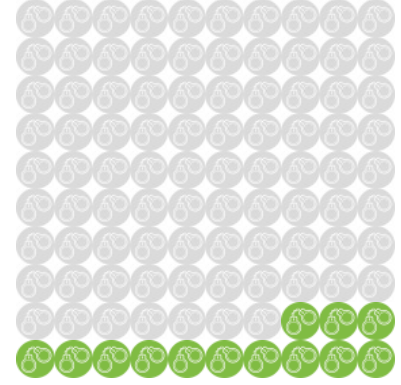
Considers vaccines safe (83%)



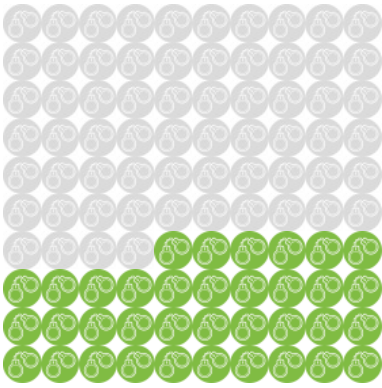
Prior cocaine use (71%)



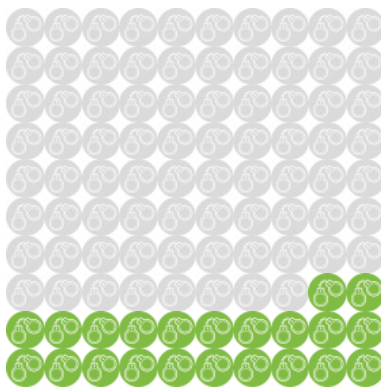
Alexithymic women (19%)



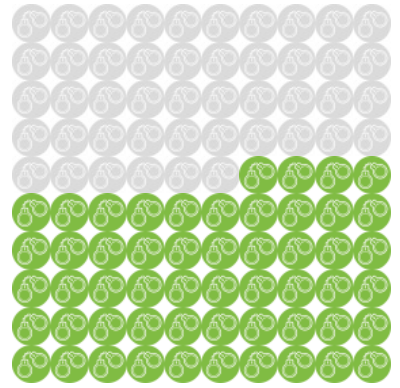
Probable gambling problem (13%)



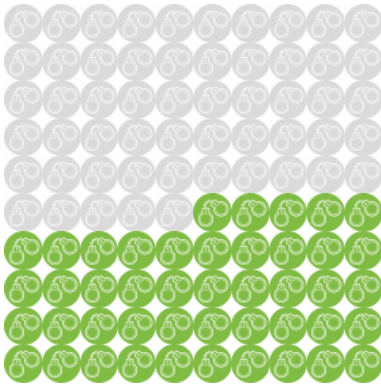
Men with no job or study place lined up after release (36%)



Alexithymic men (22%)

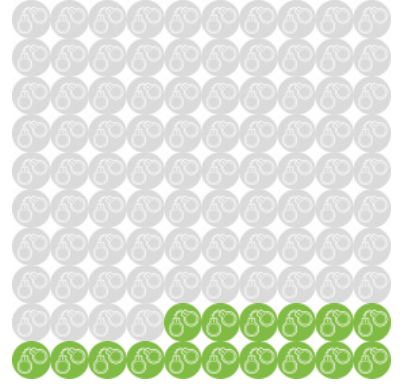


Dental caries damage (54%)

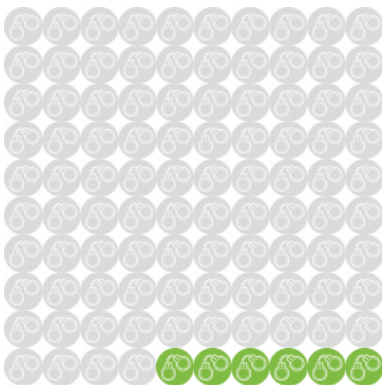


Women who have had severe depression during their lifetime (45%)

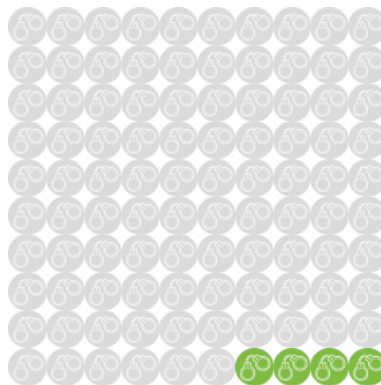
HUNDRED PRISONERS
 0% OF HUNDRED PRISONERS



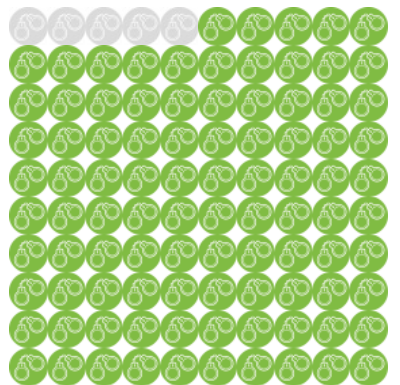
Eight or more doctor's appointments during the year (16%)



Men with self-reported incapacity to work (6%)



Women with self-reported incapacity to work (4%)



Prisoners with gambling problems and substance addiction (95%)

Mika Rautanen, Kennet Harald and Sasu Tyni (eds.)

Health and Wellbeing of Prisoners 2023

The Wattu IV Prison Population Study Finland

The Health and Wellbeing of Finnish Prisoners 2023 is a joint research project between the Finnish Institute for Health and Welfare, the Prison and Probation Service Finland and the Health Care Services for Prisoners on a population group that is not visible in traditional population studies. The aim of the study is to:

- obtain information on the health, mental health disorders and social status of prisoners;
- promote prisoners health, functional capacity, wellbeing and reintroduction to society
- strengthen the continuity of care and service pathways
- produce information to support the development of services provided by Health Care Services for Prisoners and prison social welfare services in general.

The imprisonment period is a rare opportunity to investigate complex problems, such as untreated illnesses, social exclusion or mental health. Treatment and multidisciplinary cooperation following release will be easier in the home municipalities when prisoners' social and health-related needs are identified during imprisonment. At best, health and wellbeing studies for prisoners can prevent crime and increase the security of society.

This report discusses the health and wellbeing of prisoners more diversely than before from several different perspectives. In addition to articles, the report presents a number of recommendations for practice and future research.



Vankiterveydenhuollon yksikkö
Health care services for prisoners



RISE PRISON AND PROBATION SERVICE
FINLAND



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thl.fi -> search for "Wattu"

REPORT 3/2024