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Lifelong mental health service use among 15–22 years old offenders: a document-based, mixed-methods descriptive study

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ABSTRACT

Objectives Among young offenders, psychiatric morbidity and comorbidity are common, but our knowledge about their use of mental health services during childhood and adolescence is scarce. We aimed to describe the lifelong use of mental health services of young offenders who have committed serious crimes.

Design and study setting Using data on forensic psychiatric examinations of 42 Finnish offenders aged 15–22 years, we analysed the timing and typical patterns of their prior mental health service use with qualitative and quantitative content analysis and typification.

Results Young offenders appeared in this study as children with plenty of perinatal and developmental risks, and risks related to their family situation and peer relations. Most subjects were described as having had emotional or behavioural symptoms, or both, since childhood. Involvement in mental health services was rare before the age of 7 years but increased markedly after that, staying on the same level during adolescence. Five categories of mental health service users were identified: (1) continuing service use around a decade (14.3%), (2) one brief fixed treatment (11.9%), (3) involuntary use of services (31.0%), (4) evasive use of services (21.4%) and (5) no mental health service use (21.4%).

Conclusions Young offenders had symptoms from early ages, but during childhood and adolescence, involvement in mental health services appeared for most as relatively short, repetitive or lacking. To help children at risk of criminal development, a multiprofessional approach, an early evidence-based intervention for behavioural symptoms and screening for learning problems, traumatic experiences and substance use are necessary. Results can help identify children and adolescents with a risk of criminal development, to develop mental health services and to plan further research.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ As a major strength, we consider our comprehensive data covering multiple informants.
⇒ Additionally, the use of mixed methods in analyses enables us to create a comprehensive and versatile picture of the research topic.
⇒ Convenience sample and qualitative study design limit the generalisability of the results.

INTRODUCTION

Among young offenders, psychiatric morbidity and comorbidity are common[1] and can be long-lasting.[2] Factors contributing to the emergence of violent offences have been extensively studied. The association between criminality and adverse childhood experiences and living conditions is well documented.[3–8] Williams and colleagues[9] have reported traumatic brain injury to be a risk factor for early and violent crime. Also, childhood conduct disorders and neuropsychiatric disorders have been shown to associate with serious crimes later in life, as well as during adolescence anxiety, hostility and borderline, paranoid and psychotic features.[10–15] As for diagnostic evaluations, the most common disorders among young offenders with serious crimes are conduct and personality disorders,[1 13 16–18] followed by affective and anxiety disorders as well as substance use disorders.[13 16–20]

Despite the clear association between early criminality and mental health problems, our knowledge about the use of mental health services of young offenders during their childhood and adolescence is scarce. Of 5823 incarcerated Canadian youth, aged 12–24 years, who had mental health treatment during incarceration, 65% had used mental health services during the 5 years before incarceration.[21] In the USA, 36% of 423 first-time offenders, aged 12–18 years, had used psychiatric services during the 4 months before their offence.[22] The proportion of lifelong use of specialist mental health services was 46% among 54 incarcerated adolescent females in the USA[19] and 40% among 270 incarcerated Swedish violent men aged 18–25 years.[13] Of 57 Finnish minors assessed

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in a forensic psychiatric examination, 54% had reported prior use of mental health services.[20] A general finding in existing studies is that a marked proportion of young offenders have not used mental health services before their offence.

Even less is known about the details of lifelong mental health service use of young offenders, since most studies describe the use of services dichotomously (use, no use). Among those with mental health service use prior to crime, a majority of the contacts emerge several years before the offence.[13 20 23] On the contrary, contact at the time of offence is reportedly rare.[20 24] Little is known also about the content of services. Based on the existing knowledge, less than 20% have received psychotropic medication, psychotherapy or inpatient care.[13]

This study is part of the research and developing of the Forensic Psychiatry 2020—a programme of the Finnish Institute for Health and Welfare. We aimed to describe the pathways of lifelong use of mental health services of young offenders who have committed serious crimes. We analysed the timing and typical patterns of prior mental health service use of Finnish offenders aged 15–22 years old, using a qualitative approach and data on forensic psychiatric examinations.

SAMPLE AND METHODS

In Finland, the court can order persons who have committed a serious crime to undergo a forensic psychiatric examination.[25] The Finnish Institute for Health and Welfare is, according to Finnish legislation, responsible for choosing the hospital where a full forensic examination of the offender takes place. It also takes a position on the conclusions in statements written based on the examination. The examination is a broad-based evaluation consisting of assessments performed by a multiprofessional team. Vast anamnestic data are gathered from the subject, their family and various professionals, for example, from day care, schools, healthcare and child welfare. The final written statements give descriptive information on the course of psychiatric symptomatology as well as service use during childhood and adolescence.

We examined the lifelong use of mental health services of young offenders using the information recorded in the statements of Finnish forensic psychiatric examinations, the overall quality and reliability of which are considered high.[26 27] All statements of offenders referred to forensic psychiatric examination are preserved in the archives of the Finnish Institute for Health and Welfare. The data were first collected and handled and then handed over to the research team with the help of the researcher of the forensic psychiatric team (AA-R). To extract a sample of young offenders, we picked the statements of the youngest offenders from 2015 to 2019. However, we excluded the statements of subjects who have lived abroad because they were out of reach of Finnish mental health services, and also those subjects who have been diagnosed with an intellectual disability during childhood and thus involved in intellectual disabilities services. Overall, 10 statements were excluded.

Decisions about the sample size were informed by recommendations in the literature.[28] The first author (EH) read the statements, and when the last four statements repeated earlier ones, and new themes, contents or phenomena were not found, thematic saturation was achieved.[29] The data consisted of 42 statements, which included 1141 pages of text in PDF format, 16–37 (mean 27) pages/statement. In the analysis, we included the anamnestic data, diagnoses and types of crime.

Patient and public involvement

No patient involved.

Data analyses

The content analysis method was chosen to analyse the data. It was suitable for the study because the data were textual, and the purpose was to consider the contents and phenomena of statements that were manifestly seen in the texts.[30] That is, analysing explicit terms and phrases, not implicit content or interpretations in statements. We used mixed methods by starting with qualitative content analysis to find primary elements of statements and continuing with quantitative content analysis to express the amount and scale of elements found by qualitative analysis.[31 32] We considered quantitative analysis to be a suitable extension because our approach to the data was factual, not constructive or discursive. The aim of quantitative analysis was to strengthen the systematic analysis and illustrate qualitative results instead of generalisation or statistical inference as in actual quantitative research.[33]

Finally, we used typification to crystallise and simplify our findings for the reader.[34] The types (categories) are based on differences in using mental health services, but for descriptions of types, we also included other elements of statements (eg, diagnosis, substance use), which were found by qualitative or quantitative content analysis. The more specific descriptions of the phases of analysis are illustrated in figure 1.

RESULTS

Descriptive information

Most (79 %) subjects were young adult males and most (64% of males, 78% of females) did not have vocational training. Three out of four had received support for learning and been involved in child welfare services. Some had received substance abuse services. The index offences comprised violent or hands-on sexual crimes (table 1).

More than one in three (35%) of the subjects had difficulties during the perinatal period, and more than half (62%) had difficulties in motor, speech or language development or perception. Nearly all (95%) subjects had reportedly experienced childhood adversities, the three most mentioned of which were being a bully victim,

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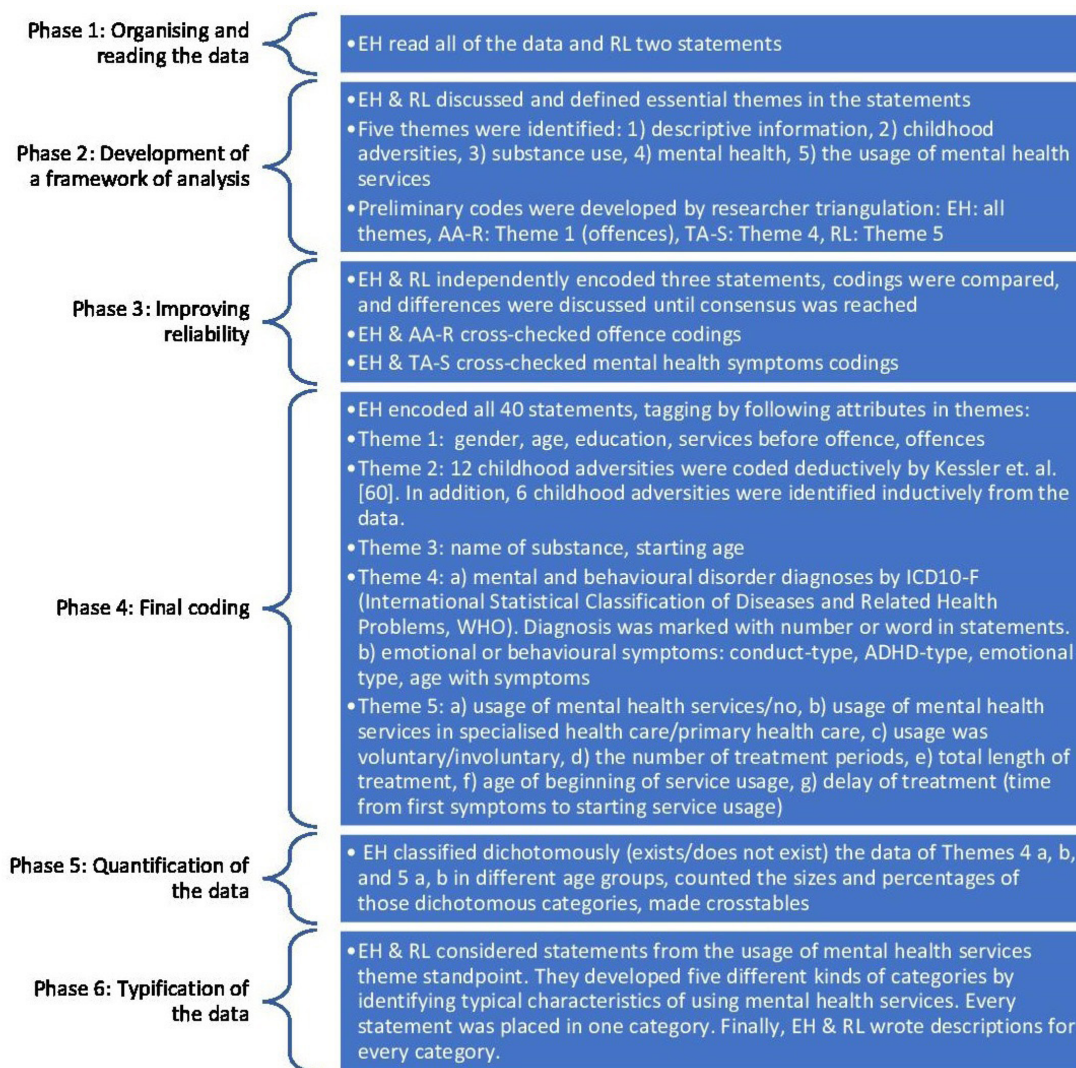

Figure 1 Analysis. Mental health service usage: visits to (1) special mental health services, (2) family counselling, (3) primary healthcare, when emotional or behavioural problems were addressed. Classification of a single or multiple mentions of emotional or behavioural symptoms: first dichotomously and then at the ages 0–15 years (which is the time when the entire age group is under regular healthcare monitoring in Finland)the symptoms of three clinically relevant diagnosed groups: conduct type (F91, F92), ADHD type (F90, F98.8 inattention) and emotional type (F32, F33, F40, F41, F93). The code of the 'type' was used when the symptom was included in one of the listed diagnoses. Childhood adversities, [60] ADHD, attention-deficit/hyperactivity disorder.

parental divorce and out-of-home placement (online supplemental appendix 1).

Symptoms and diagnoses

Most subjects were described as having had emotional or behavioural symptoms, or both, since childhood (table 2).

One in three was diagnosed with ICD10 (International Statistical Classification of Diseases and Related Health Problems, WHO 10th edition) diagnosis during childhood, and nearly half during adolescence. In the forensic psychiatric examinations, however, the majority were diagnosed with more than one ICD10 diagnosis, the most common diagnosis being antisocial personality disorder (ICD10 F60.2). More than half were diagnosed with one or more substance abuse diagnoses (table 3). Of subjects who had accessed mental health services prior to 7 years of age, 50% were diagnosed with personality disorder (ICD10 F60) in the forensic psychiatric examination, and respectively, between ages 7–12 years (77%), 13–15 years (100%) and 16–20 years (40%).

Only one subject was found without any diagnosis, and another was diagnosed with learning difficulties only.

The timing of mental health service use

Nine (21%) had not used mental health services at all during their childhood and adolescence. Even though behavioural and emotional symptoms were common, involvement with mental health services was rare before the age of 7 years (table 2), which is the Finnish age of access to school. Towards and after 7 years of age, there was a sharp increase in the use of services (figure 2).

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Table 1 Gender, age, educational level, services and offences of 42 subjects

	n (%)
Gender	
Men	33 (79)
Women	9 (21)
Age	
15–17 years	8 (19)
18–22 years	34 (81)
Education	
Primary school not completed (some age appropriate)	5 (12)
Primary school completed (interrupted vocational training 18)	26 (62)
Ongoing vocational training or high school/secondary school graduate or vocational school degree	11 (26)
Other services before index offence	
School supportive measures for learning	32 (76)
Child welfare services	31 (74)
Substance abuse services	10 (24)
Offences*	
Violent offence	33 (79)
Sexual offence	8 (19)
Destruction	<5 (<12)
Property offence	8 (19)
Other	23 (55)

*Some subjects had committed several and various types of offences.

By the age of 13 years, more than half of the service users had had their first contact. The use of services declined after the age of 15 years, although the proportion of users among symptomatic subjects was the highest among the oldest subjects (table 2).

The number of treatment periods varied from one to four. The additional number of years of treatment or repetitive attempts of treatment was 1–12 years. However, during the year preceding the index offence, fewer than one out of four of the users had contact with the services.

Levels of healthcare where services provided

From 7 to 12 years of age, most subjects received services in specialist mental health services. Involvement with primary-level mental health services was most atypical during adolescence but increased in young adulthood (table 2). Hospitalisation was common during both childhood and adolescence.

The categories of mental health service use

In the typification analysis, we found five categories based on the way the services were used. Due to the strict confidentiality orders concerning the data, presenting data samples is not possible.

Long-term use of services

This category included six subjects: all males with both conduct-type and attention-deficit/hyperactivity disorder (ADHD)-type symptoms from early childhood. The symptoms were somewhat less common in middle childhood but exacerbated in adolescence, when emotional symptoms also became nearly as common. The typical diagnosis in the forensic psychiatric examination was ADHD (ICD10 F90, F90.8). All subjects had, in various combinations, developmental problems. All except one had experienced either maltreatment or witnessed parental maladjustment problems, or both. Compared with other categories, parental substance abuse and experiencing the death of a close person (other than parent) were more prominent (online supplemental figure 1). All

Table 2 Behavioural and emotional symptoms, use of mental health services by symptomatic subjects and the service-providing levels among 42 young offenders at different ages prior to index crime

	Under 7 years	7–12 years	13–15 years	16–22 years*
	n (%)	n (%)	n (%)	n (%)
Symptomatic subjects	33 (79)	37 (88)	38 (93)	38 (97)
With ADHD-type symptoms	21 (50)	21 (50)	15 (36)	6 (15)
With conduct-type symptoms	20 (48)	28 (67)	31 (74)	29 (74)
With emotional-type symptoms	11 (26)	17 (40)	29 (69)	28 (72)
Mental health services used by symptomatic subjects	6 (18)	23 (62)	23 (61)	28 (74)
Primary services	<5	5 (22)	<5 (<12)	5 (18)
Specialised medical care	<5	18 (78)	20 (88)	17 (61)
Both	<5	0	0	6 (21)

The four age groups are based on the structure of public mental health services in Finland (online supplemental appendix 2).
Primary services: health centre, family counselling, low-threshold youth service.
*n=39.
ADHD, attention-deficit/hyperactivity disorder.

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Table 3 The number and distribution of reported ICD10 F-diagnoses among 42 subjects at different ages and in forensic psychiatric examination (FPE)

	0–12 years*	13–15 years	16–22 years	FPE (15–22 years)
Number of subjects with reported diagnoses	18	15	21	41
Schizophrenia, schizotypal and delusional disorders (F20–F29)	<5	0	0	6
Mood (affective) disorders (F30–F39)	<5	<5	14	6
Neurotic, stress-related and somatoform disorders (F40–F48)	<5	<5	5	<5
Disorders of adult personality and behaviour (F60–F69)	–	–	<5	29
Mental retardation (F70–F79)	0	0	<5	<5
Disorders of psychological development (F80–F89)	12	7	<5	8
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90–F98)	20	22	15	7
Mental and behavioural disorders due to psychoactive substance use (F10–F19)	0	<5	11	38
Other organic personality and behavioural disorders due to brain damage (F07.8)	0	0	0	<5

During the FPE, the person is fully examined and diagnosed by an experienced psychiatrist, in most cases also by using structured clinical interviews.
Numbers do not refer to number of subjects, since multiple diagnoses during one age (eg, 13–15 years) were common. Some subjects were diagnosed with more than one diagnosis of one diagnostic group, and these were included as different diagnoses, if the second number was different. Changes of diagnoses between ages were common.
Diagnoses not reported when primary services delivered: 13 subjects, and when specialised medical care delivered: 2 subjects.
*Ages 0–6 and 7–12 years combined because of small number of diagnoses among the youngest age group.
F-diagnoses, disorders of mental health and behaviour; ICD10, International Statistical Classification of Diseases and Related Health Problems, WHO 10th edition.

subjects were involved in child welfare, and placement outside the home was common. Subjects started alcohol use, on average, at the age of 14.5 years and drug abuse at 16 years.

Service use of the subjects was long term in many ways. First, their treatment lasted from 7 to 12 years and the mean 9.5 years was nearly double that of those in other categories. Second, the treatment period was long term: all, except one subject, had only one treatment period. Long-lasting service use was feasible, because the first contact with services took place at a relatively early age (6 years) compared with subjects in other categories (10–12 years). They also had accessed immediately to mental health services, mostly in the same year as the symptoms were mentioned in the patient record. The time interval from the onset of symptoms to access to treatment was clearly shorter in comparison with the other three categories. The treatment was mainly carried out as outpatient care, combined with inpatient intervals for some. Psychotropic medication combined with functional therapies were used in the treatment of most subjects. Delivery of therapy was more common than in other categories. During adolescence, all, except one, discontinued treatment.

Figure 2 Involvement of 42 young offenders in mental health services before the index crime, % of all. Percentages are calculated from all subjects due to uneven data concerning symptoms/age.

Services with short, fixed interventions

The category was smallest in the data including five subjects, two of whom were females. At all ages, four out of five were reported to have had symptoms. ADHD-type symptoms predominated during childhood and were typical in middle childhood, when also conduct symptoms exceeded emotional ones. During adolescence, all symptom types were equally common. The typical diagnosis in the forensic psychiatric examination was personality disorder (ICD10 F60). Of childhood adversities, most had experienced some form of maltreatment, and emotional abuse was more prominent than in other categories. In contrast, parental maladjustment was not reported. Many subjects had received child welfare services, but only few had been placed out of home. The

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usage of drugs was not as common as in other service user categories.

The service usage was typically short term. Compared with other categories, the total duration of mental health services (3 years) was clearly shorter, and the length of the single-treatment period shortest. Three subjects had one completed fixed treatment period, usually in adolescents' specialised care, which lasted from a few months to a little over 1 year. Two subjects were still being treated. Hospitalisation was used less in this category than in other categories, but psychotropic medication was common.

Involuntary involvement in mental health services

Approximately one-third of the subjects belong to this data category, where nearly one in four was female. Three out of four had conduct-type and ADHD-type symptoms in early childhood, and the proportion increased sharply in middle childhood to adolescence, when all were symptomatic with predominantly conduct-type and emotional-type symptoms. In many ways, these subjects' situations were more serious compared with subjects in other categories: for instance, they accessed the forensic psychiatric examination younger. Typical diagnoses in the examination were personality (ICD10 F60) and substance abuse disorder (ICD10 F10–19). Schizophrenia, schizotypal and delusional disorder (ICD10 F20) and mood (affective) disorder (F30) diagnoses were more common than among other categories. Parental divorce was more prominent than in other categories, and out-of-home placement was typical. Most had experienced either maltreatment or witnessed parental maladjustment problems, or both. Substances were used by most subjects, and they had started drinking, on average, at the age of 12.2 years and using drugs at 14.5 years.

The access to mental health services was twofold: some subjects got treatment during the same or following year after the first mention of symptoms in the patient record, but a delay of treatment was several years for some subjects. Typical duration of treatment was 4–6 years in 1–5 periods. Most subjects used mental health services during childhood, and some had been in therapy. Inpatient treatment was typical, most were hospitalised several times during adolescence and some subjects also in childhood. Everyone had experienced involuntary treatment: either they were at least once sent to involuntary treatment to a psychiatric hospital at the ages of 12–20 years, or they had been involuntarily examined in an emergency room because of their mental state. Psychotropic medication was used more commonly than in other categories. Interruptions of treatment because of refusals by the subject or their parents were common, and some subjects had escaped from the psychiatric ward.

Evasive involvement in mental health services

A little over one-fifth of the subjects belonged to this category, one-third of which were women. More than half had symptoms in early childhood, and the proportion increased steadily towards adolescence, when all had symptoms. Typically, during childhood, they had predominantly conduct symptoms and less ADHD-type and emotional-type symptoms; but from adolescence, equally often they had conduct and emotional symptoms. The subjects accessed the forensic psychiatric examination at somewhat of an older age compared with other categories. Personality disorder (ICD10 F60) and substance abuse (ICD10 F10–19) diagnoses were typical. Perinatal and developmental difficulties were the least common in this category, and no one had difficulties in motor development. The subjects had experienced out-of-home placement or at least had been involved in child welfare services. They had started drinking, on average, at the age of 13.6 years and drug usage 14.9 years.

The subjects' access to mental healthcare services was delayed, occurring years after the first mention of symptoms in the patient record and being more delayed than in other categories. Many features of the treatment created the impression of an evasive attitude. Especially during adolescence, there were fewer planned visits. More common than in other categories were interruptions of treatment because of refusals by the subject or their parents. Most of the subjects had two or more treatment periods. In this category, psychotropic medication was the rarest, and an arrangement for a long therapeutic treatment was exceptional.

No service use

This category was as typical as the category of evasive using of services. Almost all subjects were males. Even if conduct-type symptoms were common during middle childhood, all kinds of symptoms were rarer than in other categories, and co-occurrence of them was exceptional. Parenting or parental problems were least common compared with other categories; for instance, there were no descriptions of emotional abuse. Nobody was placed out of home. In contrast, perinatal and developmental problems were more common than in categories 2, 3 and 4. Nobody had a diagnosis of substance dependence, and there were also sober subjects in this category. This category included nearly all subjects who had committed solely sexual crimes.

DISCUSSION

To our knowledge, our study is the first to provide a qualitative description of lifelong mental health service use by young offenders assessed in forensic psychiatric examination. This study adds to previous knowledge by describing the use of mental health services among symptomatic subjects at different ages.

Our first main finding was that most of the offenders aged 15–22 years old referred to a forensic psychiatric examination had used mental health services, and more than half since childhood. They had mostly experienced multiple risks and had, in particular, behavioural symptoms from an early age. Our second main finding was the four ways of using mental health services. Some subjects

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had accessed services without delay and used them for a long time, but for many, the access to services was clearly delayed, and the involvement in them short or even involuntary. The fifth use covers subjects who had not used mental health services.

The lifelong use of mental health services of all the subjects was more commonly found than in earlier studies of the general population[35 36] and in earlier Finnish studies with similar subjects.[20 23] Almost all subjects were diagnosed with a psychiatric diagnosis in a forensic psychiatric examination. A few subjects under 18 years of age were diagnosed with a personality disorder diagnosis. This diagnosis is rarely used among minors, since it is artifactually delayed by diagnostic criteria allowing diagnosis after age 18 years, but clinically relevant symptoms occur earlier.[37] For example, symptoms of antisocial personality disorder tend to appear at an early age in forms of antisocial norm-breaking behavioural and aggressive problems. As these kinds of symptoms are visible and easy to recognise, they presumably are relatively well documented in one's social and healthcare data, allowing retrospective observations of the symptomatology. Our findings seem to be in line with the findings by Solmi *et al*[37] regarding the first symptoms and diagnosis of personality disorders. Of interest is the finding that the proportion of personality disorder diagnoses in forensic psychiatric examination grew with increasing age of access to mental health services until late adolescence, and further studies are needed. A marked proportion had not used mental health services, even though they had symptoms. As such, it is not exceptional among children and adolescents[38] and can reflect a failure in recognising those in need of mental health services. However, compared with other groups, the non-users had fewer behavioural and emotional symptoms and substance abuse; in addition, they had better-functioning families. Hence, their need for services may have been less evident. Most sexual offenders did not use services, possibly due to a lack of subjective need for help, or because they did not know where to get help.[39]

Several barriers to committing to treatment seemed to exist in the treatment history of most subjects who did use mental health services. Delays in seeking help and repeated treatment episodes were more common than in child and adolescent mental health services in general.[40 41] Externalising problems, substance abuse and risk behaviour are all associated with treatment dropout,[42–44] and those were robustly present among the subjects. As found in prior studies, increasing age also increased dropouts.[44] Most subjects in this study were male, and the majority had experienced problems in peer relationships, both of which are associated with short attendance in specialist mental health services.[45] Involvement in child welfare supports the long-term use of mental health services,[41] but in our study, it often meant only repeated treatment attempts. We also found that some subjects perceived their treatment as useless, which is a significant dropout predictor.[42]

Substance use, mostly undiagnosed, may also have been a barrier to mental health service use among the subjects. Before the forensic psychiatric examination, diagnosed substance abuse disorders were rare, although the onset of drinking among subjects was well before the Finnish average age, 15.5 years,[46] and drug use soon followed. Early onset of substance use is associated with cumulative and more frequent childhood adversities[47] (ie, traumatisation), which were common among the subjects. Also, substance use is often a self-medication among traumatised individuals.[48 49] Self-help by using substances instead of mental health services can be attracting, since access is easy and control feels to be in their own hands, nor does the development of substance dependence, especially on illicit drugs, increase the willingness or ability to form a confidential psychiatric treatment relationship. In addition, there are insufficient substance abuse services for adolescents in Finland.[50]

Trauma-related disorders were, however, extremely rare among our subjects. At the same time, it is worth noticing that, compared with the general population, early childhood behavioural symptoms were manifold.[51] These can be an indication of early traumatisation, since instead of specific traumatic symptoms, young children more likely display behavioural problems, affect regulation problems and dissociation.[52] Traumatic experiences undermine basic trust in other people and, therefore, also to the service system.[49 53] The comparison of the five mental health service use categories indicated that the quality of childhood adversities might affect the way mental health services are used. Our findings are in line with an earlier study with a large sample of traumatised adolescents,[54] and further studies are needed.

In some cases, treatment delay and dropout of a child can reflect parents' trauma history. Violence, mental illness and substance abuse of an adult have the strongest association with negative childhood experiences, and those pass on trauma further to the next generation.[55] The intergenerational impact of trauma emerges, among others, as poorer parenting practices of the parents.[56 57] Poor parenting is also associated with dropout from services.[42] Since commitment of the parents is the necessary base for treatment of their child, trust-promoting, sensitive interactional skills are required,[58] remembering that the perception of benefits of early treatment predicts remaining in the treatment.[59]

Strengths and limitations

As a major strength, we consider that the study was based on the data of the Finnish forensic psychiatric examination, which is one of the most extensive examinations of an individual and is considered reliable in Finland.[25 26] Although the data are retrospectively collected, the structured examination, together with multi-informant data collection methods, produce results in accurate examinations of offenders' development across their life span. Typification of service users and factors behind the barriers to treatment adherence of the adolescent yields

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information, which can be useful in a clinical context. On the other hand, this study has some limitations. Typification is a method to show differences in the data. However, it does not produce causality reasoning or statistical description. Instead, typification shows and crystallises qualitative and socially constructed differences in the researched phenomena. Constructed types do not necessarily appear as pure in real life; instead, they occur as an interlapping continuum. The sample was small, although saturation was reached. The data reported in the forensic psychiatric examination statements were not evenly accurate. Information on the duration and content of treatment periods was heterogeneously reported. Parents and other relatives of the subjects had provided the anamnestic data on the subjects' lifelong development, so there may be missing and incorrect timing of details. The subjects themselves may have exaggerated or downplayed some facts, depending on their expectations of the forensic psychiatric examination outcomes.

In light of our findings, concerns about the effectiveness of the mental health treatment of children and adolescents with behavioural symptoms are justified.[13] A comprehensive treatment includes mental health treatment with a trust-promoting approach and evidence-based interventions (focused on behavioural symptoms and traumatisation), but also early interventions focused on learning difficulties, bullying and substance use. When assessing children and adolescents with interruptions in service use, it is important to create an overall picture of both anamnestic and current developmental and environmental risks, along with substance use.

CONCLUSIONS

Young offenders appeared in this study as children with plenty of perinatal and developmental risks, and risks related to their family situation and peer relations. They had, in particular, behavioural but also emotional symptoms from an early age; but during childhood and adolescence, involvement in mental health services appeared for most as relatively short, repetitive or lacking. Our results can help to identify children and adolescents with a risk of criminal development, to develop mental health services and to plan further research.

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Contributors EH contributed to creating themes, coding, analysis of data and to the writing of the article. TA-S was involved in creating the themes, coding and in writing the article. PS contributed to the planning of the study and provided feedback on the manuscript. RL was involved in creating the themes, coding, typification and in writing the article. AA-R contributed to planning the study, handling the data, creating the themes, coding and provided feedback on the manuscript. EH is the guarantor.

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Patient consent for publication Not required.

Ethics approval The study was accepted by the research ethical committee of the Finnish Institute for Health and Welfare (14.1.2020). The topic of the research is very sensitive, and it was most important to protect the privacy of the subjects. We used anonymised material, processed in encrypted files. Therefore, we could not use, for example, data analysis software available online in coding.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as supplemental information. Due to the strict confidentiality orders concerning the data, presenting data samples is not possible. Additional information about the availability of the data can be obtained from Findata.

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