

Gender differences among adolescents with substance abuse problems at Maria clinics in Sweden

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Abstract

Aim: The article describes similarities and differences regarding various risk factors between girls and boys with substance abuse problems who begin outpatient treatment at the Maria clinics in Sweden. Potential hypotheses and some implications are also discussed. **Methods:** This cross-sectional study was based on interview data from 2169 adolescents obtained over three years from outpatient clinics in 11 Swedish cities. **Results:** Girls appear to consistently have more difficult family and childhood environments than boys, and are more likely to have problems related to school, more serious substance abuse problems, and more severe mental health problems. Criminal activity is significantly higher among boys. **Conclusions:** The study shows that girls entering treatment generally have significantly more risk factors than boys and thus more extensive problems in several aspects of life, which in turn increases the risk of developing serious drug and alcohol problems in adulthood. The study supports the gender-paradoxical relationship in which a smaller proportion of girls than boys enter treatment for substance abuse, even though girls tend to have more problematic life situations.

Keywords

adolescents, gender differences, outpatient treatment, substance abuse, UngDOK

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Adolescent alcohol use and binge drinking have generally decreased in the Nordic countries over the past decade, while the level of drug use – mainly cannabis – remains unchanged (European Monitoring Centre on Drugs and Drug Addiction [EMCDDA], 2016). From a European perspective, the Nordic countries rank among the very lowest in terms of drug and alcohol use, with the exception of adolescents in Denmark, whose alcohol consumption is amongst the highest in Europe and whose drug use is slightly higher than that of adolescents in the other Nordic countries. Data from sources such as the European School Survey Project on Alcohol and Other Drugs (ESPAD) and the Swedish Council for Information on Alcohol and Other Drugs (*Centralförbundet för alkohol- och narkotikaupplysning*, CAN) indicate that the traditional gender gap in alcohol and substance use has narrowed in the past two decades in nationally representative cohorts, especially for alcohol use (Amaro, Blake, Schwartz, & Flinchbaugh, 2001; Centralförbundet för alkohol- och narkotikaupplysning [CAN], 2016; EMCDDA, 2016). Still, a recent Swedish survey of alcohol and drug use among students found that boys in Year 2 of upper secondary school showed a higher degree (28%) of risky alcohol consumption than girls (23%). With regard to drugs in 2016, about 15% of boys and 10% of girls in Sweden said that they had used drugs in the past year (CAN, 2016).

Young people's drug and alcohol use may be associated with various medical, psychological, and social consequences. Extensive alcohol consumption can lead to intoxication, increased risk of unprotected or unwanted sex, accidents, violence and crime, self-harm, and suicide (Patton et al., 2014). Early age at onset of drug use in adolescence may also disrupt the maturing process into adulthood and interfere with the completion of education, as well as increasing the risk of family and relationship problems, social exclusion, mental illness, criminality, and more serious substance abuse problems later in life (Stone, Becker, Huber, & Catalano,

2012). Such problems can lead to contact with the healthcare system. This article describes adolescents who make contact with outpatient clinics in Sweden for substance abuse problems. Particularly highlighted and discussed are the similarities and differences between girls and boys in terms of various risk factors.

A common pattern in drug and alcohol research is an overrepresentation of men and boys in substance abuse care, despite the small gender differences in drug use usually seen in normal populations (Amaro et al., 2001; Whaley, Hayes, & Smith, 2016). It was previously believed that males had more pronounced drug and alcohol problems than females. Recently, however, this belief has been increasingly re-examined, and alternative interpretations have been proposed, such as selection factors in which the judicial system plays a major role in referring individuals to addiction treatment (Landsverk & Reid, 2013; Mitchell, Kutin, Daley, Best, & Bruun, 2016; Toray, Coughlin, Vuchinich, & Patricelli, 1991), or that the relationship reflects prioritisation of men even in this area in society (Landsverk & Reid, 2013). Meanwhile, women and girls in treatment generally appear to have more extensive and complex problems in several life areas (James, Smyth, & Apantaku-Olajide, 2013). As girls and boys with drug and alcohol problems may have different needs and therefore require different types of intervention or support, it is important to explore potential gender differences (Del Boca, 2016).

For treatment interventions aimed at adolescents who already have or are at risk of developing various types of psychosocial problems, such as drug and alcohol problems, the theoretical perspective of *risk and protective factors* is well established. Based on previous research, a number of risk and protective factors have been identified that can increase or reduce the risk of adverse developments and continued problems (Hawkins, Catalano, & Miller, 1992; Stone et al., 2012). These factors are grouped on four levels: individuals and their friends, family, school, and community. The basic premise of

substance abuse treatment is to reduce risk factors while strengthening protective factors. If these conditions can be influenced during the treatment period, there is potential for a positive trajectory (Fleming, Catalano, Haggerty, & Abbott, 2010; Shekhtmeyster, Sharkey, & You, 2011). There is also a notable cumulative effect: the more risk factors that are present, the greater the likelihood of developing substance abuse problems (Hawkins et al., 1992). According to some research, risk and protective factors are basically the same for girls and boys, and they function identically regardless of gender (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002; Bränström, Sjöström, & Andréasson, 2007; El-Khoury, Sundell, & Strandberg, 2005), while other studies have indicated gender differences for several factors (Amaro et al., 2001; Stone et al., 2012).

Gender differences among adolescents in treatment for substance abuse problems

The following knowledge review is based on a compilation of previous studies that highlight gender differences among adolescents in treatment for drug and alcohol problems.

An early Swedish study found that the social situation among adolescents being treated at a substance abuse clinic was generally highly problematic, and that roughly equal proportions of girls and boys had dropped out of school and were unemployed (Söderholm Carpelan, 1992). There were also similarities with respect to housing, though more girls lived on their own (see also Shillington & Clapp, 2003). Another Swedish study also found minor differences, and most individuals of both sexes had experienced extensive problems in school (Andersson, 1993). A few US studies have shown that more boys than girls have trouble in school (Hsieh & Hollister, 2004; Shillington & Clapp, 2003). An Australian study, however, found that more girls than boys had dropped out

of school and were unemployed (Mitchell et al., 2016).

With regard to adolescents in treatment, several studies show that girls generally grew up in a more troubled family and childhood environment than boys (Andersson, 1993; Dakof, 2000; Hsieh & Hollister, 2004; Kloos, Weller, Chan, & Weller, 2009; Mitchell et al., 2016; Skeer et al., 2011). For example, girls' parents were more likely to have substance abuse problems (Pedersen, Vind, & Baekbøl, 2009; Stevens, Estrada, Murphy, McKnight, & Tims, 2004; Thomas, Deas, & Grindlinger, 2003; Toray et al., 1991). In a Swedish study, girls reported to a greater degree that they had experienced victimisation and mental health problems in their childhood environment, whereas boys more commonly cited violence during childhood (Richert, 2007). A Danish study of adolescents in treatment for substance abuse problems also found that girls consistently reported more exposure to traumatic events than did boys (Pedersen et al., 2009).

As previously mentioned, the incidence of substance abuse is generally higher among boys than girls, and boys are usually overrepresented in substance abuse treatment (Andersson, 1993; Dembo & Muck 2009; Hsieh & Hollister, 2004; James et al., 2013; Opland, Winters, & Stinchfield, 1995; Richert, 2007; Shillington & Clapp, 2003; Stone et al., 2012). With regard to drug choice, researchers have found that boys are more likely to smoke cannabis, while girls use "harder" drugs, such as amphetamines and opiates, more often and more extensively (Brunelle, Tremblay, Blanchette-Martin, Gendron, & Tessier, 2014; Dean, McBride, McDonald, Connolly, & McDermott, 2010; Dembo & Muck, 2009; Kloos et al., 2009; Opland et al., 1995; Pedersen et al., 2009; Shane, Diamond, Mensinger, Shera, & Wintersteen, 2006; Shillington & Clapp, 2003; Söderholm Carpelan, 1992; Thomas et al., 2003). Alcohol abuse appears to be more evenly divided between the sexes (Andersson, 1993; Opland et al., 1995; Rounds-Bryant, Kristiansen, Fairbank, & Hubbard, 1998). In a Danish study,

the age at onset of alcohol and cannabis use was 12 and 13 years, respectively, for both sexes (Pedersen et al., 2009; see also Opland et al., 1995). An Australian study found no major gender differences either for choice of drug or usage patterns (Mitchell et al., 2016).

Boys have been found to be generally more likely to commit criminal acts (Andersson, 1993; Hodgins, Lövenhag, Rehn, & Nilsson, 2014; Hsieh & Hollister, 2004; Mitchell et al., 2016; Pedersen et al., 2009; Richert, 2007; Shillington & Clapp, 2003; Stevens et al., 2004; Toray et al., 1991). In a study from a Swedish clinic, about two thirds of the boys and about one third of the girls had committed delinquent acts (Söderholm Carpelan, 1992). However, it was found that girls in treatment for substance abuse problems had been subjected to various forms of violent victimisation to a much greater extent (Anderberg & Dahlberg, 2016; Mitchell et al., 2016; Rounds-Bryant et al., 1998; Shane et al., 2006; Titus, Dennis, White, Scott, & Funk, 2003). Other studies show that girls are more often victims of sexual abuse, while boys more commonly experience physical violence (Grella & Joshi, 2003; Hawke, Jainchill, & De Leon, 2003; Hsieh & Hollister, 2004). A Swedish study showed that nearly half of the girls in the sample had been sexually abused, while the corresponding figure for boys was 9% (Hodgins et al., 2014).

Girls experience traumatic events and victimisation more frequently than do boys, which in turn typically manifests as an increase in mental health problems. Consequently, girls generally report more pervasive mental health problems than do boys (Brunelle et al., 2014; Dakof, 2000; Dembo & Muck, 2009; Hsieh & Hollister, 2004; James et al., 2013; Kloos et al., 2009; Mitchell et al., 2016; Opland et al., 1995; Stevens et al., 2004; Stevens, Murphy, & McKnight, 2003; Thomas et al., 2003; Toray et al., 1991). With regard to various mental health problems, girls report a higher incidence of depression, anxiety, self-harm, suicidal ideation, and suicide attempts (Hodgins et al., 2014; Jacobsson, Richter, Tengström, & Borg, 2011;

Pedersen et al., 2009; Richert, 2007; Toray et al., 1991), and have riskier sexual behaviour (Stevens et al., 2003). Boys report greater difficulties controlling violent behaviour (Hodgins et al., 2014; James et al., 2013).

In summary, this literature review of previous studies identifies several differences between girls and boys in treatment with respect to social conditions, family and childhood environment, patterns of abuse, criminality and violent victimisation, and mental health, though some similarities also emerge. Some studies are dated, and many only address a relatively small and specific sample with severe problems.

The purpose of this article is to describe and analyse similarities and differences between girls and boys with substance abuse problems who begin outpatient treatment at Swedish Maria clinics. The risk factors are related to their social situation, family and childhood environment, alcohol and drug use, criminality, victimisation, and mental health. Potential explanations and some implications for practical application and continued studies are also discussed.

Method

Setting and participants

This cross-sectional study draws on interview data obtained over three years (2013, 2014, and 2015) from outpatient clinics in 11 Swedish cities (Eskilstuna, Göteborg, Helsingborg, Hässleholm, Kristianstad, Kungsbacka, Linköping, Lund, Malmö, Stockholm, and Växjö) and stored in the IKMDOK database.¹ These specialised Maria clinics are based on collaboration between municipalities and county councils, and provide care for adolescents or young adults who have, or are at risk of developing, various types of substance abuse problems. The clinics offer a wide range of services, from advice and counselling of adolescents and their families to specific treatment programmes or medical interventions. The

average treatment period is four to six months, and the staff may include social workers, nurses, psychologists, and doctors.

The UngDOK (a Swedish abbreviation for adolescents and documentation) interviews were transferred to a database via the treatment units participating in the documentations system, with information reported for a total of 2471 adolescents over the three-year period. A total of 302 individuals were excluded: 208 because the information was based exclusively on material on file and 94 because the interviews were incompletely or incorrectly coded. Ultimately, 2169 adolescents who had begun some kind of treatment at the participating clinics during the relevant period remained and formed the data set.

Material

UngDOK is a structured interview that was developed specifically for adolescents with various types of drug and alcohol problems. The primary purpose of UngDOK is to identify the problems, needs, and the relevant situation of adolescents in order to arrive at the appropriate assessment, treatment plan, and implementation of treatment. The information gathered can also serve as a basis for follow-up and evaluation of the interventions and outcomes at the local clinics. In a recent reliability and validation study, the quality of the UngDOK interview method was found to be satisfactory (Dahlberg, Anderberg, & Wennberg, 2017).

The interview conducted at the time of admission contains a total of 75 questions covering the following ten aspects of life: housing and financial support, occupation, treatment history, criminality, childhood, exposure to violence, family and relationships, physical health, mental health, and alcohol and drug use. The interviews also cover administrative data, sociodemographic data, information concerning ongoing treatment contacts, and some concluding open questions. The 38 selected variables in this study describe individual characteristics within the following life domains: social situation, family and childhood

environment, drug and alcohol use, criminality and violent victimisation, and mental health. The study only uses anonymised data, and permission for storage and processing of data for research purposes has been obtained from the research ethics committee at the National Board of Health and Welfare.

Analysis

Initially, the study group was categorised by gender, and the variables included in the study were analysed for gender differences. The statistical tests were chi-squared and *t*-tests, and the data were processed and analysed using IBM SPSS Statistics 22.0 software. In both analyses, occurring significance was reported if the *p*-value was less than .05. Based on the theoretical perspective of risk and protective factors specifically related to future substance abuse problems (Hawkins et al., 1992; Stone et al., 2012), an analysis of the individuals' cumulative burden of risk factors was also conducted. The factors were created by individual or merged dichotomised variables found in the UngDOK clinical interview. This analysis included 1977 adolescents for whom information about these factors was available. The ten risk factors that both support earlier research and are included in the interview are: unemployment, problems in school, prior placement in foster home/institution, problems in the childhood environment (financial, substance abuse, mental health, and violence), early age at onset of drug and alcohol use (drunkenness at age 12 or younger; onset of primary drug use at age 13 or younger), association with criminal or drug-abusing peers, subjection to violence (physical, psychological, or sexual), depression, difficulty controlling violent behaviour, and history of traumatic events affecting mental health. By examining the distribution of the material, the median value was five risk factors, and three categories were created: a low-risk group (0–2 factors), a moderate risk group (3–5 factors), and a high-risk group (6–10 factors). This type of analysis has been carried out

in earlier studies and may also be of clinical value (Stockwell et al., 2004).

Results

The group consisted of 27% girls and 73% boys with an average age of 17.7 years for girls (range = 13–26 years, $SD = 2.5$) and 17.5 years for boys (range = 12–25 years, $SD = 2.3$). Three quarters of the adolescents lived with their parents, girls to a significantly lesser extent than boys, 71% and 79%, respectively. An almost equal proportion of girls and boys attended compulsory school, 21% and 19%, respectively, while a considerably lower proportion of girls (44%) than boys (54%) were enrolled in upper secondary school or college. A significantly larger proportion of girls (37%) took the initiative to begin treatment themselves or were referred by the healthcare service compared to boys (24%). With boys (66%), the family or social services were more likely to initiate contact with the clinics than was the case with girls (51%).

Below is a presentation of the results for the five life domains that were studied and analysed. The first domain concerns various aspects of the adolescents' social situation (see Table 1).

The social situation shows both similarities and differences between the sexes. Equal numbers of girls and boys had experienced an unstable housing situation over the past three months, such as homelessness or housing arranged by social services. Likewise, the proportion of girls and boys who were not studying, working, or in training is also similar. In all, 63% of the study group reported existing or past problems at school that affected their attendance, performance, and/or satisfaction. Here, girls (72%) are overrepresented compared with boys (59%). With respect to reading and writing difficulties, the frequencies are 17% for both sexes. Large differences were found in leisure activities: girls (69%) were more likely than boys (55%) to lack any type of regular or organised recreational activity.

Table 1. Social situation for girls and boys, total study group, percentage and p -value.

| | Girls $N = 593$ | Boys $N = 1576$ | Total $N = 2169$ | p |
|----------------------------------|--------------------|--------------------|---------------------|-----|
| Unstable housing situation | 11% | 11% | 11% | ns |
| Lack of occupation | 17% | 15% | 16% | ns |
| Problems at school | 72% | 59% | 63% | * |
| Difficulties reading and writing | 17% | 17% | 17% | ns |
| No regular leisure activities | 69% | 55% | 59% | * |

* $p < 0.05$.

Table 2. Family and childhood environment for girls and boys, total study group, percentage and p -value.

| Problems in childhood environment | Girls $N = 593$ | Boys $N = 1576$ | Total $N = 2169$ | p |
|-------------------------------------------|--------------------|--------------------|---------------------|-----|
| Financial problems | 32% | 24% | 26% | * |
| Substance abuse problems | 43% | 27% | 31% | * |
| Mental health problems | 47% | 26% | 32% | * |
| Violence/assault | 35% | 19% | 23% | * |
| Placement in foster care/residential home | 19% | 16% | 17% | ns |
| No parental support | 16% | 10% | 12% | * |

* $p < 0.05$.

A number of the adolescents who turn to the Maria clinics have had a problematic childhood environment (see Table 2). The gender differences are significant, for a considerably larger proportion of girls have experienced financial

Table 3. Drug and alcohol use for girls and boys, total study group, percentage and *p*-value.

| | Girls N = 593 | Boys N = 1576 | Total N = 2169 | <i>p</i> |
|-------------------------------------|------------------|------------------|-------------------|-----------|
| AUDIT-C ¹ | 57% | 43% | 47% | * |
| Primary drug | | | | |
| Alcohol | 23% | 11% | 14% | * |
| Cannabis | 65% | 82% | 77% | * |
| Other substances | 12% | 8% | 9% | * |
| Regular use ² | 50% | 45% | 46% | * |
| Age at onset (years) ³ | 14.79 | 15.18 | 15.07 | <i>ns</i> |
| Polydrug use | 31% | 26% | 27% | * |
| Prior substance abuse treatment | 28% | 27% | 27% | <i>ns</i> |
| Association with drug-abusing peers | 66% | 65% | 66% | <i>ns</i> |

¹AUDIT-C consists of three consumption questions in the initial screening instrument The Alcohol Use Disorders Identification Test to identify risky alcohol consumption. These figures represent the percentage of individuals assessed as having risky alcohol consumption on the basis of the limits of 4 for girls and 5 for boys in the AUDIT-C (Reinert & Allen, 2007).

²Regular use means that the primary drug is used two-three days a week or more.

³In this study, age at onset is based on a clinical judgement of when the problematic use of the primary drug is initiated, regardless of the type of drug.

**p* < 0.05.

problems, substance abuse, mental health problems, and violence during their childhood compared with boys. The differences amount to between 8 and 21 percentage points. Girls (19%) have also more frequently been previously placed in foster or institutional care than boys (16%), but this difference is not significant. Girls also reported to a greater extent than boys that they lacked emotional or practical support from their parents, 16% versus 10%, respectively.

Table 3 shows both similarities and differences between the sexes with regard to adolescent drug and alcohol use patterns. A higher proportion of girls, 57%, demonstrated a risky

consumption of alcohol based on the gender-differentiated threshold values in AUDIT-C, while the corresponding proportion for boys is 43%. Gender differences are also pronounced for the primary drug, the drug that causes the adolescent the most problems at the start of treatment or motivates contact with a treatment facility. Alcohol as a primary drug is more than twice as common among girls compared with boys, at 23% versus 11%, respectively. The corresponding proportions for cannabis are 65% for girls and 82% for boys. A higher proportion of girls reported other substances (e.g., amphetamines, cocaine, and opiates) as the primary drug, 12% compared with 8% for boys. Further, regular use of the primary drug over the past three months is more common among girls. Age at onset of use of the primary drug is about 15 years for both sexes without any substantial differences. As to polydrug use, 31% of girls and 26% of boys report that they often combine two or more substances.

No significant gender differences are seen with regard to prior treatment interventions for drug and alcohol problems. The same applies for the last variable in this domain, in which an estimated two thirds of girls and boys socialise with friends who use drugs.

Criminality is considerably lower among girls, about half of whom reported that they had been arrested by the police, compared with over two thirds of boys (see Table 4). Among girls, 23% had been convicted of crimes, while the corresponding figure for boys is 39%. However, there are no clear differences between girls and boys with regard to association with criminal peers, about one third for each. Girls are somewhat more likely to have been victims of crime, though the difference is not significant. With regard to exposure to various types of violence and abuse, the proportion of girls is consistently higher or much higher: about half have experienced physical or psychological violence and almost one third sexual violence.

In general, the adolescents reported a high occurrence of various mental health symptoms or problems; the gender differences are

Table 4. Criminality and exposure to violence/abuse for girls and boys, total study group, percentage and *p*-value.

| | Girls N = 593 | Boys N = 1576 | Total N = 2169 | <i>p</i> |
|---------------------------------|------------------|------------------|-------------------|----------|
| Arrested by police | 49% | 68% | 63% | * |
| Convicted of crime | 23% | 39% | 35% | * |
| Association with criminal peers | 34% | 32% | 32% | ns |
| Victim of crime | 51% | 47% | 48% | ns |
| Exposed to violence/abuse: | | | | |
| Physical | 49% | 43% | 45% | * |
| Psychological | 56% | 29% | 37% | * |
| Sexual | 32% | 2% | 10% | * |

**p* < 0.05.

Table 5. Mental health for girls and boys, total study group, percentage and *p*-value.

| | Girls N = 593 | Boys N = 1576 | Total N = 2169 | <i>p</i> |
|-----------------------------------------------|------------------|------------------|-------------------|----------|
| Mental health problems, past 30 days | | | | |
| Depression | 49% | 30% | 35% | * |
| Anxiety | 64% | 38% | 45% | * |
| Concentration difficulties | 68% | 50% | 55% | * |
| Difficulties controlling violent behaviour | 30% | 19% | 22% | * |
| Eating disorder | 13% | 5% | 7% | * |
| Self-harming behaviour | 15% | 4% | 7% | * |
| Suicidal thoughts | 20% | 8% | 11% | * |
| Prescription drugs for mental health problems | 31% | 15% | 19% | * |
| Neuropsychiatric diagnosis | 19% | 21% | 20% | ns |
| Traumatic events in life | 46% | 26% | 31% | * |
| Prior psychiatric care | 54% | 35% | 40% | * |

**p* < 0.05.

consistently large or very large (see Table 5). Girls (49%) reported to a greater extent that they had been seriously depressed over the past month compared with boys (30%). Large differences are also seen in perceived distress or severe anxiety with 64% for girls versus 38% for boys. A larger proportion of girls also reported that they had had problems over the past month comprehending, concentrating, or remembering, 68% compared with 50% for boys. Of the girls, 30% self-reported information on difficulties controlling and managing anger, rage, or violence, while the corresponding figure for boys was 19%.

A large gender discrepancy can be seen with regard to eating disorders, where 13% of girls and 5% of boys reported such problems. A marked difference was also seen in information provided on self-harm: 15% of girls and 4% of boys. Girls stated to a much greater degree than boys that they had had serious suicidal thoughts over the past month, 20% versus 8%. Twice as many girls as boys reported that doctors had prescribed medication for a specific psychiatric problem over the past month: 31% versus 15% for boys.

About one fifth of the adolescents reported a neuropsychiatric diagnosis, with a similar

Table 6. Cumulative burden of risk factors for girls and boys, total study group, percentage and *p*-value

| | Girls N = 550 | Boys N = 1427 | Total N = 1977 | <i>p</i> |
|-----------------------------------|------------------|------------------|-------------------|-----------|
| Low-risk group (0–2 factors) | 16% | 37% | 31% | * |
| Moderate-risk group (3–5 factors) | 48% | 45% | 46% | <i>ns</i> |
| High-risk group (6–10 factors) | 36% | 19% | 24% | * |

**p* < 0.05.

distribution between girls and boys. Almost half of the girls and about one quarter of the boys reported that they had experienced a traumatic event, accident, or disaster that still affected them psychologically. A substantially larger proportion of girls than boys had previously undergone voluntary psychiatric care (54%).

Table 6 shows a summary of the total number of factors for each individual to illustrate the aggregate psychosocial burden or cumulative effect of risk factors. As can be seen, almost one third of adolescents have two or fewer risk factors, though the proportion of girls in the low-risk group is much lower than boys. In the moderate-risk group, with three to five risk factors, gender differences are small. Among adolescents who report six to ten risk factors, there are pronounced differences: the proportion of girls in the high-risk group is 36%, while the corresponding figure for boys is 19%.

Discussion

When Swedish adolescents enter outpatient treatment for drug and alcohol problems, a number of gender differences appear to be amplified compared with drug habits among students, where the differences are considerably

less obvious (CAN, 2016). The study supports the paradoxical relationship in which a smaller proportion of girls than boys enter treatment for substance abuse, even though girls tend to have a more difficult childhood environment and more extensive mental health problems (see James et al., 2013; Mitchell et al., 2016).

This study identifies both similarities and differences in living conditions between the sexes with regard to the various aspects of life that were analysed. Earlier Swedish studies have revealed more similarities than differences between girls and boys concerning the social situation (Andersson, 1993; Söderholm Carpelan, 1992). The results from this study show little gender difference for problematic housing situations and unemployment, though girls are more likely to experience various school-related problems (see Mitchell et al., 2016). Girls are also less likely to be involved in regular leisure activities.

Girls appear to consistently have more difficult family and childhood environments than boys, and are more likely to experience financial difficulties, substance abuse, mental health problems, and abuse or violence during childhood. This is also supported by a number of previous studies (Kloos et al., 2009; Pedersen et al., 2009; Toray et al., 1991). The current study also shows that girls to a smaller extent feel they have support from their parents.

There are some clear gender differences in drug and alcohol use, too. A larger proportion of boys reported cannabis as their primary drug compared with girls, while larger frequencies of girls identified alcohol and other drugs such as amphetamine and opiates as their primary drug. They also used the primary drug more frequently than boys did. Furthermore, girls reported more frequently than boys that they often used a combination of two or more drugs, which in summary indicates that girls generally have more serious substance abuse problems (Brunelle et al., 2014; Dean et al., 2010; Dembo & Muck, 2009; Kloos et al., 2009; Pedersen et al., 2009). On the other hand, no gender differences are seen with regard to age at onset of

substance use, history of prior treatment for substance abuse, or association with drug-abusing peers.

The greater propensity for boys to commit criminal acts is also confirmed by the significantly higher likelihood that they will be arrested by police and convicted of various types of crimes. These are well-established facts in previous research (Hodgins et al., 2014; Mitchell et al., 2016; Pedersen et al., 2009; Stevens et al., 2004). In contrast, girls are much more likely to have been subjected to psychological and sexual violence than boys (Mitchell et al., 2016; Rounds-Bryant et al., 1998; Shane et al., 2006; Titus et al., 2003). Contrary to previous research (Grella & Joshi, 2003; Hawke et al., 2003; Hsieh & Hollister, 2004), however, a larger proportion of girls in this study had experienced physical violence.

With regard to mental health, as in earlier studies, this study shows pronounced gender differences, with girls being much more likely to report various types of mental disorders, conditions, or symptoms (Brunelle et al., 2014; Dembo & Muck, 2009; Hodgins et al., 2014; James et al., 2013; Kloos et al., 2009; Mitchell et al., 2016; Pedersen et al., 2009; Stevens et al., 2003). Somewhat surprisingly, however, girls were found to be more likely to have difficulty controlling violent behaviour than boys, which runs contrary to earlier studies (see Hodgins et al., 2014; James et al., 2013). The study also shows that girls are more likely to have had prior treatment or treatment with medication for psychiatric problems. Only with respect to neuropsychiatric diagnosis is the gender distribution similar.

The study shows that girls entering treatment generally have substantially more risk factors than boys and thus more extensive problems in several aspects of life, which in turn increases the risk of developing serious drug and alcohol problems in adulthood. The study also illustrates clear gender differences concerning several specific risk factors. In general populations there are more similarities than differences between girls and boys with regard to

risk and protective factors (see Arthur et al., 2002; Bränström et al., 2007; El-Khoury et al., 2005).

To some extent, the results of this study risk perpetuating “cemented” gender stereotypes that are often attributed to females with substance abuse problems (Storbjörk, 2011). At the same time, it is hard to ignore certain differences between girls and boys entering treatment for drug and alcohol problems. How are we then to understand these differences?

One conceivable explanation may relate to who takes the initiative to contact the care system. This study shows that girls often enter treatment on their own initiative or through the healthcare system, whereas boys arrive through the efforts of their parents or social services. More or less coercive measures, such as Youth Contracts, from social services or law enforcement agencies may be used. Previous studies show that the judicial system is a major source of treatment referrals for both boys and young men, while the source of the initiative for girls varies more, with self-referrals and health services playing a much bigger role (Kloos et al., 2009; Landsverk & Reid, 2013). The psychosocial problems of girls may also be interpreted based on gender stereotypes, which may cause them to be referred to youth guidance centres and psychiatric clinics rather than to substance abuse treatment (Norden, 2016).

Another possible explanation is that, despite more extensive problems, girls do not seem to be referred to treatment until at a later stage and therefore do not receive adequate support in time. Could it be that even in this life area society prioritises men and boys? Or are the problems that girls experience less visible or less recognised? The situation may relate to a gender-bound socialisation process, where females appear to have learned to discipline themselves and internalise their problems more than males (Amaro et al., 2001; Whaley et al., 2016). Some of the findings in this study support this idea, because girls are considerably more likely than boys to report depression, anxiety, eating disorders, self-harm, and

suicidal thoughts. However, this is contradicted to some extent by the finding that girls are more likely to have difficulty controlling aggressive behaviour. This finding possibly reflects a propensity among females to become more like males when it comes to clearly expressing their feelings or acting out their anger (see, e.g., Amaro et al., 2001).

A third hypothesis that has been raised in earlier studies – and which is also supported in part by this study – is that girls entering treatment often follow a specific gender-related pattern. These pathways range from increased exposure to crucial underlying risk factors among girls and young women in society such as various types of harassment and violence victimisation, through severe mental health problems to extensive drug and alcohol use as a result of the traumatic experiences and emotional problems generated (Whaley et al., 2016; see also Danielson et al., 2009). In Sweden, young women are at far greater risk than men of being subjected to sexual harassment or abuse (Brå, 2017).

However, this type of cross-sectional study cannot establish such causal links but rather illustrates the interaction of various factors. Other limitations include the empirical basis for this study, which consists of self-reported information, as some studies indicate that boys with substance abuse problems tend to underreport sensitive issues compared with girls (Botzet, Winters, & Stinchfield, 2006; Simpson & Miller, 2002). If the cumulative burden of risk factors were done on other grounds and with other variables, the results could be different. A limitation of this approach may be that all risk factors are judged to be the same, although some factors are likely to be more important than others. The cumulative model used is tentative and needs further validation. Despite the limitations, several studies show good reliability in general with regard to adolescents' self-reported substance use (Burlinson & Kaminer, 2006; Winters, 2003). The study is based on extensive material from clinics in several cities of various size, which probably provides an

important picture of gender differences among adolescents with drug and alcohol problems who come into contact with outpatient care in Sweden.

The study highlights the importance of identifying meaningful similarities and differences between girls and boys with drug and alcohol problems, because such knowledge may be highly significant when tailoring both preventive initiatives and treatment interventions. The study also implies that it would likely be possible to prevent further development of substance abuse problems in many adolescents through early detection and attention. The study findings clearly indicate that it is possible to identify girls' drug use earlier because they are far more likely than boys to have prior contact with psychiatric services and are also more likely to have had problems in school. This provides opportunities for earlier detection and more relevant support at an earlier stage. Therefore, it should be possible to improve support by offering more girls outpatient care, which would also result in a more equal gender balance.

As girls in need of substance abuse treatment have a larger burden of psychosocial risk factors than boys, they are also more likely to require more comprehensive and multidimensional treatment interventions that extend over a longer period (Kloos et al., 2009; Stevens et al., 2003). It is especially important to consider the difficult childhood environment and reported serious psychological problems from which many adolescents suffer. Treatment should thus be provided in close cooperation between social services and psychiatric services, and encompass both substance abuse and mental health problems. Past traumatic experiences also need to be considered and addressed in treatment, especially among girls, who are more likely to have had such experiences (Anderberg & Dahlberg, 2016; Kloos et al., 2009; Toray et al., 1991; Torchalla, Nosen, Rostam, & Allen, 2012). In some cases outpatient care interventions may not necessarily meet the care needs of this group.

More research is required to increase understanding of how identified gender differences may relate to various treatment outcomes. An ongoing longitudinal study will further address this issue and explore whether gender-specific risk and protective factors can predict various outcomes.

Note

1. The research database is managed by the Institute for the Development of Knowledge and Methods in the Treatment of Drug Abuse (IKM), Linnaeus University, Växjö.

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