

Patterns of polydrug use among pregnant substance abusers

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Abstract

Aim: Studies of drug use during pregnancy have generally focused on individual substances or specific combinations of drugs. The aim of this article is to increase our knowledge about polydrug use and pregnancy in a Nordic context by describing the sociodemographic characteristics of a clinical population of pregnant women with severe substance use, examining the scope and type of polydrug use and analysing factors associated with concurrent use of many, as opposed to a few, drugs. **Method:** A cross-sectional study of pregnant women on admission to compulsory care for substance abuse in Sweden between 2000 and 2009 ($n = 119$ women, representing 128 pregnancies). Data were retrieved from administrative registers and client records. Univariate links between demographic, social, obstetrical, treatment history variables and polydrug use were examined. Binary logistic regression was used to analyse the association between explanatory variables and polydrug use. **Results:** The average number of drugs being used concurrently was 2.65, and injection drug use was recorded in 73% of the pregnancies. Opiates and amphetamines were the most common primary drugs, followed by alcohol. The likelihood of polydrug use increased with first trimester pregnancy, planned (as opposed to emergency) committals, as well as the combination of partner substance abuse and injection drug use. **Conclusions:** Polydrug use was widespread among pregnant substance abusers. Policies, interventions and research often focus on individual drugs separately, but for clinical populations in particular there is a need to address drug use broadly, including a systematic recording of smoking habits. This also entails awarding more attention to those not eligible for established interventions, such as opiate maintenance treatment, and giving more consideration to a variety of life circumstances, such as partner drug use.

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Keywords

compulsory care, polysubstance use, pregnancy, substance abuse

Consumption of tobacco, alcohol and other drugs in connection with pregnancy became a public health and policy issue in the early 1960s. A German measles epidemic and the tragic effects of the prescription drug thalidomide severely contested the prevailing notion of the foetus being protected or even invulnerable. After the idea of the “placental barrier” had been shattered, there was a substantial increase in clinical, public and political interest in protecting the foetus from a whole range of risks – not least those associated with alcohol, tobacco and illicit as well as licit drugs (Briggs, Freeman, & Yaffe, 2011; Lester, Andreozzi, & Appiah, 2004).

Although initiatives have been made in recent years to adopt a broader perspective on alcohol, drugs and tobacco at both policy and clinical levels (Prop. 2010/11:47; Wong et al., 2011; World Health Organization, 2014), the disconnectedness of strategies, legislation, public health interventions and general public discourse between alcohol, tobacco and drugs is still quite evident. Focus is usually placed on each drug separately, on moderate to risky use and on large population groups (e.g., all women of childbearing age). In terms of substance use and pregnancy, a major issue has been whether women should be advised to totally abstain from alcohol during pregnancy and lactation, or whether moderate consumption at some defined level may be condoned (Furtwängler & Visser, 2013; Leppo & Hecksher, 2011; O’Leary & Bower, 2012; Rehm & Patra, 2012). In contrast, smoking during pregnancy has been deemed as unequivocally harmful, and recommendations have been clearer about cessation (Hackshaw, Rodeck, & Boniface, 2011; Nilsson, Hofvendahl, Hofvendahl, Brandt, & Ekblom, 2006). With a few exceptions, such as the concern about “crack babies” in the US during the 1980s, use of drugs other than

alcohol or tobacco during pregnancy or lactation has rarely been discussed in public health or policy terms. Hence, the EU common strategy to help member states reduce alcohol-related harm specifically mentions “protecting children, adolescents and unborn children from harmful effects of alcohol consumption” as a main objective (European Commission, 2006). The corresponding EU strategy on illicit drugs also aims to reduce drug-related risks and harms but does not mention drug use during pregnancy or protecting children from harms (European Council, 2013). This may partly reflect the inconclusiveness of the knowledge base regarding the risks of drug use during pregnancy (Schempf, 2007; Schempf & Strobino, 2008), but most probably signifies a prevailing perception that illicit drug use during pregnancy is a marginal phenomenon. Studies of larger populations have, nonetheless, shown that use of licit and illicit drugs during pregnancy is of some significance (Crome & Kumar, 2007; Hayatbakhsh et al., 2011; Lamy & Thibaut, 2010; SAMHSA, 2014; Shankaran et al., 2007).

In dealing with marginal groups such as pregnant substance abusers the focus will inadvertently shift from discussing “safe” levels of consumption towards examining the magnitude of negative outcomes and ways to manage and alleviate these outcomes. The importance of a polydrug approach has been highlighted before, not least in the Maternal Lifestyle Study (Bauer et al., 2002). Researchers found that women using cocaine during pregnancy were also likely to use other licit and illicit drugs – thereby emphasising the polydrug nature of “what used to be thought of as a cocaine problem” (Lester et al., 2001, p. 316). High rates of additional opioid and other drug use were also found among pregnant women in a Canadian methadone maintenance programme (Delano,

Gareri, & Koren, 2013), and polydrug use was widespread among pregnant women entering federally funded treatment centres in the United States (Terplan, Smith, & Glavin, 2010).

Several Nordic studies have recognised polydrug use among pregnant substance abusers, although not necessarily as the main focus of attention. In Norway, reports on polydrug use have been included in studies on pregnant women in opioid maintenance treatment (OMT: Lund et al., 2013; Lund et al., 2012), in follow-up studies of children born to substance-abusing mothers (Nygaard, Moe, Slinning, & Walhovd, 2015; Nygaard, Slinning, Moe, & Walhovd, 2015, 2016) and in studies of pregnant substance abusers in residential settings, including involuntary treatment (Haabrekke, Slinning, Walhovd, Wentzel-Larsen, & Moe, 2014; Myra, Ravndal, Torsteinsson, & Wiig, 2016). We also find data on polysubstance use in some Finnish studies of pregnant or postpartum women in residential care (Pajulo, 2001; Pajulo et al., 2012). A Danish study by Imer, Teasdale, Nielsen, Vedal, and Olofsson (2012) has actually highlighted the scope and type of substances used by a group of women attending treatment for substance abuse. Swedish studies of this kind are, however, rare. In a report concerning a smaller sample of pregnant women in compulsory care, polydrug use was, as for compulsory care clients at large, found to be commonplace (Reitan & Weding, 2012).

The aim of this article is to increase our knowledge about polydrug use among pregnant substance abusers in a Nordic context. More specifically, the article will (a) describe the sociodemographic characteristics of a clinical population of pregnant women with severe substance abuse, (b) examine the scope of polydrug use in terms of number and types of drugs used by these women, and (c) analyse factors associated with concurrent use of many, as opposed to a few, drugs in this group.

Polydrug use is understood as illicit, non-prescribed or illegitimate use (i.e., misuse) of drugs for the purpose of intoxication, and this use is concurrent and not necessarily

simultaneous (Earleywine & Newcomb, 1997). As compulsory care legislation requires ongoing abuse of at least one drug, we use the term “substance abuse” when referring to the client’s primary drug or her status as a “substance abuser”, according to the legal definition. However, polydrug “use” refers to concurrent use of drugs for the purpose of intoxication. This use may be more or less legitimate – according to legislation or medical recommendations.

Methods

Setting and sampling

Regardless of which substance we are dealing with in connection with policy measures or scientific studies, we are bound to encounter problems of definition. Finding reliable measures of substance use is generally difficult, not least in groups where consumption may be associated with social disapproval, such as pregnant women or ethnic minorities. Assessing substance *abuse* or substance-use *disorders* is even more challenging. First, problematic use during pregnancy must be defined, i.e., whether this means any use or use at a given level. Second, persons with the most severe problems tend to fall out of larger surveys (Zhao, Stockwell, & Macdonald, 2009). Studying treatment-seeking populations also poses a risk of selection bias. However, clinical populations are likely to offer the best access to populations with more severe problems, particularly as far as pregnant women are concerned. Despite the obvious barriers to care for pregnant women with substance use problems, it is likely that the woman will seek some form of care or be sought by health or social services at some stage during the pregnancy (Jessup, Humphreys, Brindis, & Lee, 2003; Roberts & Pies, 2011). Our study was therefore based on a group of women with acknowledged severe substance abuse, namely pregnant women in compulsory care.

In Sweden, substance-use disorders without the presence of psychoses or other severe

mental disorders may be grounds for commitment to compulsory care in accordance with social welfare legislation. According to the Care for Substance Abusers (Special Provisions) Act, the municipal social welfare board may apply for involuntary commitment if a person is exposing his/her physical or mental health to serious harm, is at obvious risk of destroying his/her life, or is at risk of seriously harming him-/herself or significant others. Applications are tried in an administrative court, and approximately 1000 persons are annually committed to care, of whom around one third are women. The maximum period of commitment is six months, and clients are initially placed in one of the 11 closed facilities run by the National Board of Institutional Care. However, clients typically move on to open wards or outpatient programmes provided by other caregivers after a few months, albeit still under court order (Reitan, 2016b). The municipal welfare board may order a person to be hospitalised instantly. Such emergency placements may last up to one week, by which time the social welfare board must apply for regular compulsory care or else the client is discharged. Around 80% of the clients are in fact admitted acutely (National Board of Institutional Care, 2016b).

Client records and administrative registry data concerning all women admitted to compulsory care between 2000 and 2009 were used (a) to identify women who were pregnant at the time of admission, and (b) to collect data on drug use, treatment history and sociodemographic background. The study group consisted of 119 women, of whom nine had been pregnant upon admission on two separate occasions, thereby representing a total of 128 pregnancies. Ethical approval was granted by the Regional Ethical Committee in Stockholm (reference number 2014/899-31/5).

Data

Data were retrieved from three main sources within the National Board of Institutional Care.

First, a digital administrative registry in which all placements and details of each placement are recorded. The registry is meant for internal documentation and follow-up, and not primarily for research or treatment evaluation. Information is available partly as fixed variables, such as dates of admission and discharge, legal statutes, referring municipality, reason for placement (main drugs used, according to the social secretary making the first inquiry about admission), use of involuntary measures (seclusion, body search, destruction of property, urine tests, etc.), leaves of absence and deflections. In addition, daily journal entries are available in free-text format. Second, paper dossiers consisting of administrative documents from the municipal social services, including assessments and reports presented to the courts, as well as court rulings. In 58 cases the dossiers also included data from an ASI-based (Addiction Severity Index) semi-structured client interview, and in another 24 cases staff documentation on applicable parts of the interview was available. Also, interview data from a previous, relatively recent, placement in compulsory care were sometimes available. The interview includes a number of questions about drugs used in the past and present, primary drug, age of debut, frequency of use, injection drug use (IDU) and so forth. Third, medical records (on paper) with information about test results (especially drug tests), medication, psychological assessments, physical examinations, referrals to other caregivers, etc.

The extent and comprehensiveness of the paper-based client dossiers varied a great deal partly because of the duration of placement. For the purpose of this study we sought to clarify which (how many) drugs were being used at the time directly preceding placement in care and also which drug was primary. Frequency of drug use was not recorded. Primacy was awarded to self-reported data and/or the most recent indication. If this information was not available through self-reported client interviews, staff documentation on the interview was used. Other sources were either used to

cross-check or to fill in when interview data was totally missing. Medical records included results from urine tests and medical examinations, and the client dossiers included social service reports on, for example, history of substance use and misuse as well as court rulings with information from court proceedings. The varying comprehensiveness meant some data were missing, but above all reduced the possibilities of cross-checking information. In cases of inconsistencies or difficulties regarding interpretation, these were discussed and resolved by two persons performing the coding. The information from the different sources was, however, generally quite consistent.

Based on this variety of sources, mostly in the shape of free text and non-standardised medical records, information on treatment history, social situation and family background, use of substances, stage of gestation at entrance to compulsory care, and mental and physical health status were compiled in a single data file with each pregnancy as the unit of observation.

Analysis

Data analysis was performed using SPSS version 24. Summary statistics of client characteristics were obtained from the compiled data file. Age, stage of gestation at entrance to compulsory care, level of education and age of initiation for primary drug were categorised in two to three categories. For each pregnancy up to five (groups of) drugs being used were recorded and then categorised as single-drug use (concurrent use of 1–2 drugs) and polydrug use (concurrent use of 3–5 drugs).

Univariate links between demographic, social, obstetrical and treatment history variables, and number of drugs used (single versus polydrug use) were examined using Pearson's chi-squared test for categorical variables. Binary logistic regression was used to analyse the association between explanatory variables and number of concurrent drugs. All variables with a p -value < 0.25 in the univariate analysis were included in the model unless the number of

cases in any cell was less than five. In line with the guideline of Hosmer and Lemeshow (2000), the number of cases for each independent variable was not less than ten.

Results

Sociodemographic characteristics and smoking status

The median age was 27 years, varying between 18 and 45. At the time of admission, 28% were pregnant in the first, 38% in the second and 34% in the third trimesters. In 42% of the cases the woman already had one or more children under 18 years old; the number of children varied between one and five (average 1.85). In most cases (83%) at least one of the children was in some form of child protection care. There were references to the presence of a steady (male) partner, who may or may not have been the father of the expected child, in 85% of the cases. In half of these instances the woman was cohabiting with the partner, and in two-thirds of the cases there were indications that the partner was also abusing substances. There were indications of smoking in 59% of the pregnancies.

Number of drugs used

The average number of drugs being used was 2.65 (the maximum number recorded was five). There were only 15 cases where the woman was using only one drug, of which half concerned alcohol.

Types of drugs used

The most common drugs or drug groups were amphetamine, benzodiazepines and opiates, used by 60%, 59%, and 52%, respectively. Cannabis was used by 41% and alcohol by 33%. Other drugs (e.g., barbiturates, LSD and ecstasy) were used by 20%. The least common drugs were methadone or buprenorphine (12%) and cocaine (9%). The types of drugs used did not vary much with stage of gestation at the

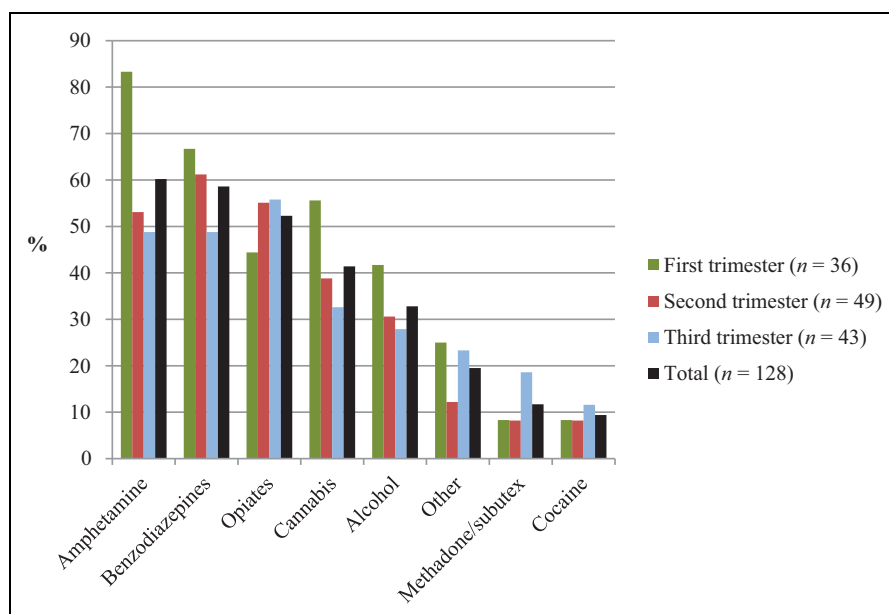


Figure 1. Types of drugs used among pregnant substance abusers by stage of gestation (trimester) at the time of admission to compulsory care.

time of admission to care, except for opiates and methadone, which were increasingly common in later trimesters and amphetamine being most common in the first trimester. It was not possible to distinguish between legitimate and illegitimate use of methadone or buprenorphine. The woman would typically have been enrolled in a programme, dropped out or failed to comply with the terms and at the time of admission she may have been using methadone in a non-prescribed manner along with other drugs (Figure 1).

Primary drug of abuse

The most common primary drugs of abuse were opiates (38%) and amphetamine (33%), followed by alcohol (19%). For alcohol the frequency rate was higher among women pregnant in the first trimester at the time of placement in care, while opiates as primary drugs were clearly more common among women in their second and third trimesters (Figure 2).

Injection drug use

Many of the women had some experience of IDU and current IDU was 73%. Information was missing or inapt in ten cases.

Characteristics of women according to number of drugs used

The vast majority of women were currently using more than one drug. In 41% of the cases the woman was using 1–2 drugs, and in 59% of the cases 3–5 drugs. Client characteristics by number of drugs are shown in Table 1. Stage of gestation (trimester) at admission, IDU, partner substance abuse and whether the committal was acute or planned were all significantly associated with number of drugs. For gestational age, a multiple category variable, we also performed a post-hoc Tukey's honest significant difference (HSD) test, which showed that there was a significant difference between being pregnant in the first trimester compared to the third trimester (results not shown).

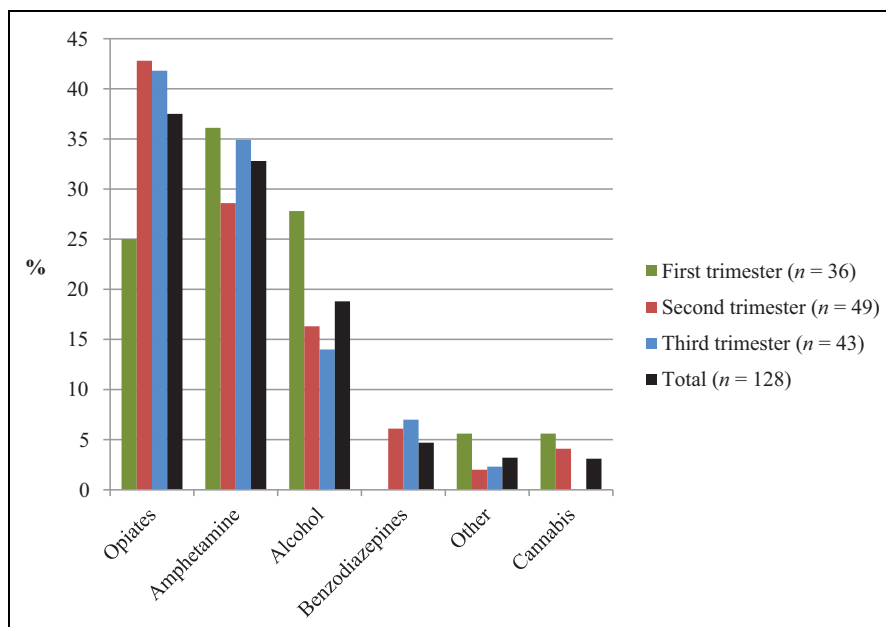


Figure 2. Primary drug used among pregnant substance abusers by stage of gestation (trimester) at the time of admission to compulsory care.

Factors associated with the number of drugs used

Binary logistic regression was used to distinguish factors related to the number of drugs used, with 1–2 substances as the reference category. The variables included in the model were those that showed a p -value < 0.25 in Table 1, i.e., gestational age at time of admission, IDU, emergency committals, age group and partner substance abuse. Having a partner who abuses substances is common among substance-abusing women, and the high occurrence of IDU is expected given the selection of the study group. Research has suggested that these circumstances also interact with each other; intimate partnerships and social networks are essential for initiation to IDU and are key sites of drug risk behaviours, especially among young people (Rhodes & Quirk, 1998). Therefore, the interaction between these two variables was included in the model (Table 2).

For use of 3–5 drugs, compared to 1–2 drugs, being pregnant in the first trimester, emergency committals and the interaction between partner substance abuse and IDU were all significant. The combination of partner substance abuse and IDU meant that the odds of using many drugs increased by over 2.5 times. Contrary to what one might expect, among women who were admitted acutely the odds of using many substances were only a third of that for women who were subject to planned committals. Women who were committed in the first trimester were over three times as likely to be using many drugs compared to women in their third trimester. Being in the younger age group (18–29 years) was not significantly related to the use of many drugs.

Discussion

Our first aim was to describe the study group in sociodemographic terms, including smoking

Table 1. Characteristics of pregnant substance abusers, by number of drugs concurrently used at time of admission to compulsory care ($n = 128$).

	1–2 drugs ($n = 52$) N (%)	3–5 drugs ($n = 76$) N (%)	p -value ^a
Age			0.035*
18–29 years	29 (56)	56 (74)	
30+ years	23 (44)	20 (26)	
Stage of gestation at admission			0.025*
First trimester	8 (15)	28 (37)	
Second trimester	22 (42)	27 (36)	
Third trimester	22 (42)	21 (28)	
Primary drug of abuse			0.354
Alcohol	12 (23)	12 (16)	
Opiates ^b	23 (44)	25 (33)	
Amphetamine	13 (25)	29 (38)	
Other	4 (8)	10 (13)	
Debut of primary drug of abuse^c			
15 years or older	18 (58)	25 (53)	0.182
Drugs by injection	35 (67)	58 (76)	0.040*
Smoking ^d	32 (62)	43 (57)	0.801
Children under 18 ^e	26 (51)	28 (39)	0.183
Education^f			0.302
Incomplete primary	6 (19)	12 (25)	
Primary	11 (34)	24 (49)	
Secondary	10 (31)	11 (22)	
Partner substance abuse^g	29 (57)	56 (80)	0.008*
Emergency committal	47 (90)	55 (72)	0.009*
Previous compulsory care	25 (48)	33 (43)	0.603

^a p -value for Pearson's chi-squared test for categorical variables. P -values < 0.05 are marked with an asterisk (*). A post-hoc Tukey's honest significant difference (HSD) test was performed for stage of gestation at admission (the only multi-category variable with a significant difference at the variable level), in order to assess any inter-category differences. The test showed that there was a significant difference between being pregnant in the first trimester compared to the third trimester (results not shown). ^bExcluding methadone/buprenorphine. ^cData were missing in 67 cases. ^dThere were indications of smoking or use of smokeless tobacco in 75 cases, and an explicit mention of non-smoking status in two cases. In the remaining 51 cases data were missing. ^eData were missing in five cases. ^fData were missing in 54 cases. ^gInformation was missing for 26 cases.

status. The average age and age span is related to biological factors, reproductive patterns in society and to how the target groups are defined by legislation or administrative structures. The average age of 27 years (span 18–45) is comparable to that found in other Nordic studies; somewhat higher than the mean of 25 years (span 16–38) in a Finnish study of 34 women (Pajulo et al., 2012) and the mean of 26 years (span 17–44) in a study of eight women in compulsory care in Norway (Myra et al., 2016) –

but lower than the mean of 32 years (span 23–44) in a Norwegian study of 37 women in OMT (Lund et al., 2012). Among other sociodemographic characteristics, it is worth noting the high prevalence of partner substance abuse (around two-thirds). This has been observed in many other studies (Powis, Gossop, Bury, Payne, & Griffiths, 2000; Tuten & Jones, 2003) and relates well to 85% partner substance abuse in the study from Finland (Pajulo et al., 2012) and the fact that half of the partners of

Table 2. Binary model of associations between concurrent use of many drugs as opposed to use of few drugs among pregnant substance abusers at the time of admission to compulsory care ($n = 128$).

	3–5 drugs OR	95% CI	p-value
<i>Gestational stage at admission</i>			
First trimester	3.206	1.121, 9.165	0.030*
Second trimester	1.576	0.646, 3.846	0.317
Third trimester ^a			
Young age (18–29 years)	0.591	0.265, 1.320	0.200
Emergency committal	0.324	0.107, 0.984	0.047*
Interaction partner substance abuse and drugs by injection	2.588	1.171, 5.720	0.019*

OR = odds ratio; CI = confidence interval.

^aReference category.

*p-value < 0.05.

pregnant women in treatment in Norway were also in OMT at the time (Lund et al., 2012). Most of the women with children in our study (83%) had children placed in child protection services. This was also the case for all of the women with children in the Finnish study (Pajulo et al., 2012). Three of the eight women included in a study of pregnant women in compulsory care in Norway already had children; two had lost custody due to their own drug abuse. Six of the partners in that study were also abusing substances (Myra et al., 2016).

Our findings also show the very high smoking rates among pregnant substance abusers, especially in comparison to pregnant women at large (Reitan & Callinan, 2016). The smoking rate in this study was 59%, but it is likely to have been substantially higher; daily smoking rates among female clients and younger clients in compulsory care are around 90% (National Board of Institutional Care, 2016a). In a Danish study of pregnant women the smoking rate was 84% (Imer et al., 2012), and all of the women in the Finnish study were defined as “excessive smokers” (Pajulo et al., 2012). These exceptionally high levels need to be addressed clinically, politically and scientifically. At the public health level anti-smoking policies have been powerful and successful in many Western countries, and policies have also often targeted pregnant women (Oakley, 1989). Still, tobacco

is often ignored in treatment programmes (Baca & Yahne, 2009) or is dependent on staff attitudes (Cookson et al., 2014). Information about smoking and tobacco use was surprisingly absent in client records in this study, and it is only in recent years that questions about smoking have been included in admission interviews in compulsory care (National Board of Institutional Care, 2016a).

Our second aim was to examine the scope and type of polydrug use in our study group, thereby attempting to penetrate the “poly-ness” of polydrug use. Simultaneous or concurrent use of several psychoactive drugs is common among clinical populations (Pakula, Macdonald, & Stockwell, 2009; Staiger, Richardson, Long, Carr, & Marlatt, 2013). In 2014, 56% of all female clients in compulsory care in Sweden had used different drugs on the same day during the past 30 days before admission, and among those aged 18–29 years (both sexes) the rates varied between 73% and 81% (National Board of Institutional Care, 2016a). Most of the pregnant women in this study also had a vast and longstanding experience with a whole range of drugs. In this study a maximum of five drugs was recorded, and 41% of the women used 1–2 drugs and 59% used three or more. A comparable Danish study recorded up to six drugs used during pregnancy for a group of 161 women in treatment, revealing exactly the same

distribution between categories; 42% used 1–2 drugs and 58% used three or more (Irner et al., 2012).

This is an important observation given that the combination of different substances may have particularly detrimental effects (Høiseth, Andås, Bachs, & Mørland, 2014). At the policy level there is often a narrow division between alcohol, drugs (also between licit and illicit drugs) and tobacco. In 2006, the EU developed a strategy to help member states reduce alcohol-related harm. One of the main aims is to protect children, adolescents and unborn children from harmful effects of alcohol consumption, especially Fetal Alcohol Spectrum Disorder (FASD) (European Commission, 2006). The current EU action plan on illicit drugs also aims to reduce the health and social risks and harms caused by drugs, but it does not mention substance use in connection with pregnancy specifically (European Council, 2013). In recent years, attempts have been made to synthesise these approaches, such as when the World Health Organization published the first guidelines for the identification and management of substance use and substance-use disorders in pregnancy broadly (World Health Organization, 2014). However, guidelines are generally substance-specific and therefore do not capture “the reality of co-existing alcohol and drug problems” needed to increase treatment effectiveness (Colpaert, Vanderplasschen, Van Hal, Broekaert, & Schuyten, 2008, p. 574). This distinction between types of drugs is also reflected in research where studies on drug use in connection with pregnancy, for example, tend to focus on single drugs or specific drug combinations (Arria et al., 2006; Brown & Graves, 2013; Dryden, Young, Hepburn, & Mactier, 2009; Engeland et al., 2008; Neerhof, Macgregor, Retzky, & Sullivan, 1989) and not multiple drug use *per se*. Apart from the obvious clinical challenges related to polydrug use, ceasing to control for polydrug use in studies also increases the risk of misinterpreting direct negative effects of specific drugs (Konijnenberg, 2015).

When it comes to the types of drugs used, the findings are bound to reflect prevailing drug cultures and availability of different drugs in each society. Although her study was performed during the 1990s, it is perhaps not surprising that our findings were very similar to those in Byqvist’s (2006) study of around 5500 severe substance abusers in Sweden. Comparing women aged 25 to 34 years, central stimulants (amphetamine) and opiates were the predominant drugs for 34% and 31%, respectively. However, only 4% of the women in this age group stated alcohol as their primary drug compared to one in five in our study. In the Finnish study of pregnant women, 20% were also defined as having primarily “alcohol problems” (Pajulo et al., 2012), while the primary drugs in the Danish study of pregnant women in treatment were alcohol and cannabis (Irner et al., 2012). Such comparisons are somewhat tricky, though, as they probably also reflect differences in the treatment context and how the women were recruited. From a public health perspective it is reasonable to focus on alcohol (and tobacco) in policies and recommendations aimed at pregnant women. However, it is fair to say that alcohol is not the primary or only problem of women in these kinds of clinical populations. There is, similarly, a tendency to concentrate on opiates and opiate maintenance treatment (OMT) when pregnancy and substance abuse are on the agenda. For pregnant opiate abusers it is the recommended form of treatment, aimed at preventing withdrawal and facilitating other, psychosocial, interventions (Jones et al., 2012). However, although opiates are also dominant in this study, it is important not to lose focus on other drugs or the combination of substances. Around half of the women in this study (61 of 128) were *not* currently using opiates. There is a risk of an attention bias towards drugs with a clear link between cause and effect and a diagnostic definition (FASD), or where there is a distinct medical treatment option available (such as OMT). In both instances it is easy to lose sight of the entirety of drugs used and the general life situation

including poor housing conditions, low income, poor nutrition, exposure to violence, lack of social support, mental health problems and so forth (Irner et al., 2012; Powis et al., 2000; Velez et al., 2006).

The third aim of this article was to analyse factors associated with concurrent use of many, as opposed to a few, drugs. The findings suggest that it is relevant to go beyond identifying polydrug use as such and to also consider the extent and type of polydrug use. The fact that women who were pregnant in the first trimester were over three times more likely to be multiple drug users is perhaps best understood as a reflection of life circumstances. First, with irregular menstrual cycles and a lack of regularity in all life areas, these women often do not realise they are pregnant until they are well into their second trimester. Second, many women have problems relating to the pregnancy for a long time. Third, when this knowledge does sink in (Myra et al., 2016; Söderström & Skolbekken, 2012) – often after the first ultrasound screening – they will often attempt to reduce their drug use or adapt to their new circumstances in other ways. This may, in turn, reduce contacts with drug-using networks, and as the pregnancy becomes more “obtrusive”, women may also be excluded from previous supply networks hesitant to provide drugs to a pregnant woman (Roberts & Pies, 2011). The interaction of a substance-abusing partner and IDU also substantially increased odds of using many drugs which fits in well with findings in other studies. The importance of partners and social networks for the initiation of substance abuse and the risk of relapse after treatment has been recognised both clinically and scientifically (Ellis, Bernichon, Yu, Roberts, & Herrell, 2004; Powis et al., 2000). Nonetheless, somewhat surprisingly, there are few scientific studies of the prevalence and importance of partner substance abuse among women in treatment (McCollum, Nelson, Lewis, & Trepper, 2005). Our results emphasise the need for a focus on relations and networks – both as potential hazards and as potential resources – especially

for pregnant substance abusers. The association between emergency committals and multiple drug use was significant, but not in the direction we might have expected. Among women who were committed acutely, the odds of multiple drug use were only a third, compared to non-emergency committals. It should be kept in mind that most admissions to compulsory care are in fact emergency committals, so the use of planned committals is perhaps quite coincidental. However, it may be that social services are more inclined to plan commitments of women they already know are severe drug users and where a possible pregnancy has come to their attention. The process in these cases will often depend on when and how the pregnancy is verified as well as if, within the time limits for abortion, it is clear that the woman will go through with the pregnancy (Reitan, 2016a; Söderström & Skolbekken, 2012).

Limitations

This study was restricted to substance abusers committed to compulsory care who were also pregnant at the time. Although pregnancy may influence the decision to place a woman in compulsory care, legislation and the care system are oblivious to this circumstance. The study group is, then, not representative of all drug-using pregnant women. The study is therefore also based on secondary data, i.e., client records and registry data with all their flaws and inadequacies. It was, for example, not possible to study dose and frequency of drug use or smoking (Irner et al., 2012). Moreover, data consisted of a retrospective mix of professional assessments and self-reports, often presented in a haphazard manner. Although two persons performed the coding, there is an obvious risk of misjudgements. The study does cover the entirety of women pregnant upon admission in compulsory care during a whole decade, but due to the nature of the context the sample size is still relatively small, which leaves less room for analyses of subgroups within the population.

Conclusion

This study is unique in analysing the scope and nature of polydrug use among pregnant substance abusers in Sweden and highlights the need for a broader approach to problematic drug use. Polydrug use is a complex phenomenon and we need to develop our understanding of its scope and patterns. This includes taking into account the whole array of licit and illicit drug use and also documenting and observing smoking habits systematically in both clinical and research contexts. Policy recommendations concerning use of specific drugs may be useful in a public health context, but are likely to be less relevant in clinical settings such as this one where it is extremely difficult to extract the circumstances related to use of individual drugs. Another consequence of a broader approach to drug use in clinical populations such as this one is the need for more attention to be paid to those who are not eligible for, or who disqualify themselves from, established interventions such as OMT. For example, almost half of the women in this study were not using opiates. A broad approach is also vital in terms of addressing the entire social situation of pregnant substance abusers, not least the impact of partners who commonly also have drug use problems.

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