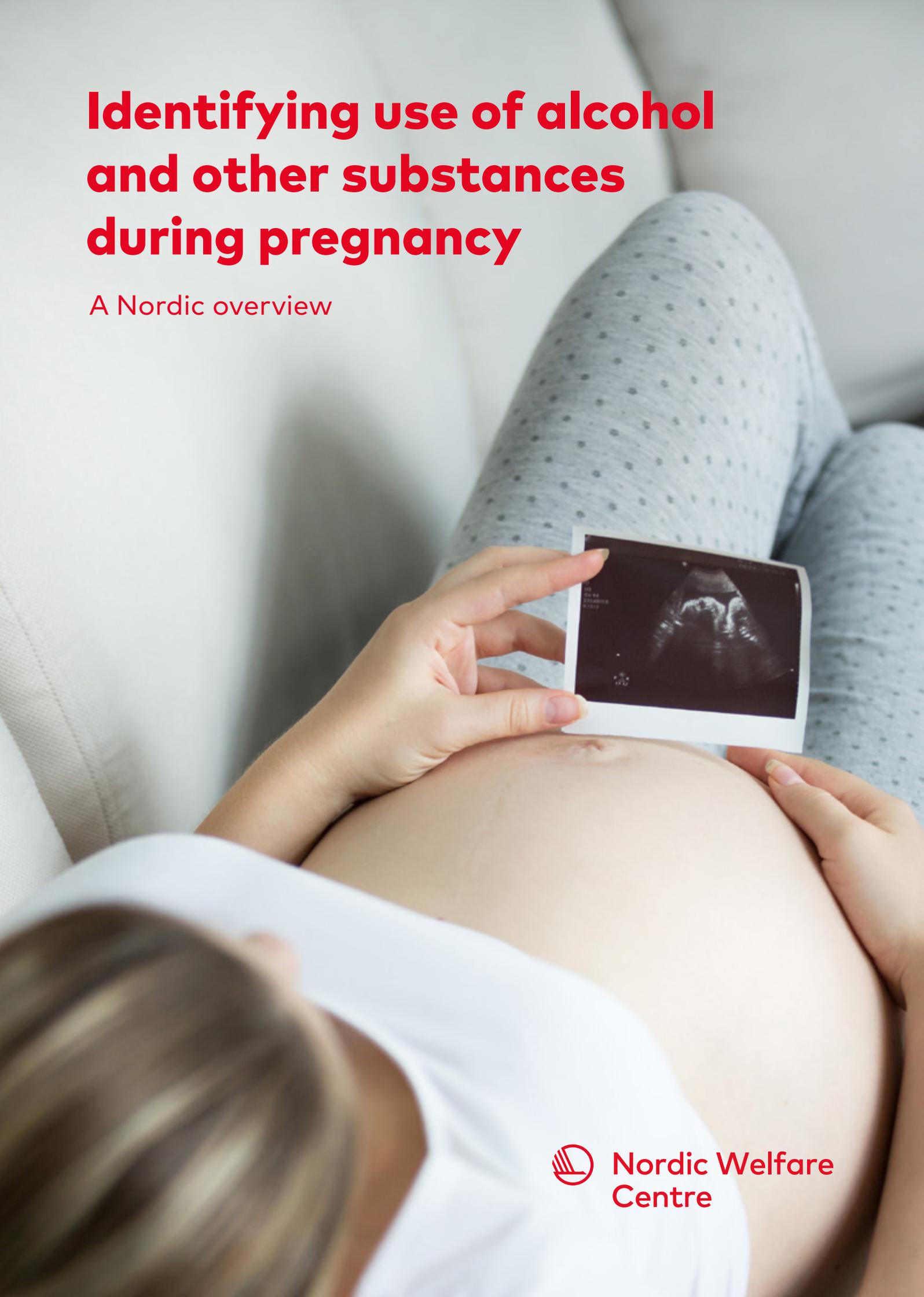


Identifying use of alcohol and other substances during pregnancy

A Nordic overview



Nordic Welfare
Centre

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Preface

The Nordic Welfare Centre has a long history of working with questions of alcohol consumption and its different aspects and contexts. While alcohol is a socially accepted substance consumed in all parts of society, alcohol consumption during pregnancy is a risk behaviour and can cause severe damage to the foetus.

Only zero consumption is risk-free, and given that four out of ten pregnancies are unplanned, there is a risk that the foetus is exposed to alcohol even before the woman knows she is pregnant. Alcohol consumption therefore relates to all women of childbearing age and younger.

At the suggestion of the Norwegian Directorate of Health, the Nordic Welfare Centre launched the project [Use of alcohol and other substances during pregnancy – in a Nordic perspective](#) in March 2019 to direct attention towards the issue. The project has mainly addressed the use of alcohol but also discusses maternal use of tobacco and other substances during pregnancy and the harms thus caused to the foetus.

The project has been conducted in close collaboration with a doctoral student in this field, based at the Folkhälsan Research Center in Helsinki.

The first outcome of the project was a two-day Nordic expert meeting on FASD in October 2019, hosted by the Nordic Welfare Centre. The participants came from all five Nordic countries, primarily researchers, clinicians, other healthcare workers, and experts from non-governmental organisations.

The expert meeting resulted in four major outcomes, which will be the focus for continuous Nordic collaboration on FASD. This work will be initiated by the experts who participated in the Nordic expert meeting. The four outcomes are:

1. Online platform for sharing knowledge on FASD in the Nordic countries
 - a. The platform has been built, and information from the different Nordic countries is being uploaded
2. Nordic research collaboration
 - a. The first meeting will take place in Copenhagen in March 2020

3. Nordic workshop at the European FASD conference in 2020
 - a. A Nordic workshop is being arranged
4. Report with a focus on interventions for people affected by FASD
 - a. The need for this report will be discussed during the Copenhagen meeting in March 2020

The second outcome of the project is this report, an overview of substance use (primarily alcohol use) during pregnancy. The report will highlight the following, among others: the harms that substance use can cause to the foetus; the role of antenatal care in the identification of substance use; stigma as a barrier to preventing prenatal alcohol exposure; and prevalence estimates of FAS and FASD. The report also includes a profile from each Nordic country about their antenatal care system, the national guidelines regarding the use of alcohol and/or other substances during pregnancy, and how use of alcohol is identified among pregnant women at the antenatal care using specific (screening) instruments.

The Nordic Welfare Centre would like to thank all the Nordic experts who participated in the expert meeting in October 2019. Thanks are similarly due for all the work that has been and will be done as an outcome of the expert meeting.

The Nordic Welfare Centre would also like to send a special thank you to those who have helped with any relevant material and have proofread the country profiles in this report.



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Introduction

Use of tobacco, other substances, and alcohol by the expectant mother can have a great impact on the unborn child's health, growth, and general development. To protect the unborn child against preventable risk factors, the health authorities in the Nordic countries recommend that women avoid using tobacco, other substances, and alcohol during pregnancy.

Most women stop or reduce their use of tobacco, other substances and/or alcohol when they realise they are pregnant. However, four out of ten pregnancies are unplanned, and the consumption of alcohol and other substances has increased among women in childbearing age, imposing a risk of foetal exposure before a woman knows she is pregnant.

The consequences are different for the unborn child depending on when during the pregnancy the mother smokes/uses tobacco, takes other substances, and/or drinks alcohol. Other factors are the size and duration of the consumption and the risk behaviour. All risk behaviours carry the risk of the child being born preterm and being small for gestational age.

From the perspective of the unborn child, alcohol is one of the most dangerous of all substances and can be the reason for conditions labelled under the umbrella term foetal alcohol spectrum disorders (FASD). Alcohol is an organic compound that easily passes through the placenta and the umbilical cord into the foetus, which then receives the same blood alcohol content as the mother. Research has not been able to establish a safe level of alcohol consumption during pregnancy, so any amount of alcohol at any stage of the pregnancy may harm the foetus. Alcohol consumption at a low level of risk for the mother develops into a high level of risk for the foetus. Besides the increased risk of being small for gestational age and born preterm, children with prenatal alcohol exposure can suffer from other and more severe conditions such as birth defects and neurodevelopmental disabilities as a result of the mother's alcohol use.

The negative consequences of prenatal exposure to alcohol and/or other substances can be lifelong, and the exposed child may require support from a range of services, including health care, social care, and the education system. The increased service demands and

productivity losses lead to staggering societal costs. Children with prenatal exposure to alcohol and/or other substances may also suffer from other caregiving adversities, such as neglect, parental substance misuse, and mental health issues. Many of these children have been placed outside the home, which can increase the risk of other adverse adult outcomes.

It can be difficult to measure exactly how many women use alcohol during pregnancy and how many children are affected by their mother's risk behaviour during pregnancy, as it cannot be denied that some consequences may also be caused and/or exacerbated by other factors.

Because only zero consumption is risk-free and because four out of ten pregnancies are unplanned, alcohol consumption during pregnancy is a highly relevant subject and relates to more or less any women.

Aim

This report gives an overview of the use of tobacco, other substances, and alcohol among pregnant women in the Nordic countries and describes the consequences of prenatal exposure for the foetus. The focus is on the pregnancy period and primarily on the use of alcohol and the consequences for the foetus of prenatal exposure.

The report describes the situation in all Nordic countries, reviewing the national guidelines of alcohol use during pregnancy and the (screening) instruments used at the antenatal care to identify alcohol use among pregnant women. Furthermore, the aim is to describe the services available for pregnant women with alcohol dependence.



Background

To secure a healthy pregnancy for the mother and child, it is important to have a healthy diet, to exercise regularly, and to abstain from using tobacco, other substances, and/or alcohol. The use of these substances can cause a number of adverse birth outcomes for the foetus, and there is no such thing as a safe established limit of use during pregnancy. The safest option is therefore total abstinence.

In the Nordic countries, pregnant women are covered by the publicly funded antenatal care system, which has an important role in supporting healthy pregnancies and in identifying maternal risk behaviour related to the use of tobacco, other substances, and/or alcohol during pregnancy. The sooner such use is identified, the better the chances are to intervene and to reduce the risks for the foetus. Also, it is not unusual for some subgroups to have more than one risk behaviour.

The risks related to prenatal exposure to tobacco and other substances need emphasising, as the exposure for example can increase the risk of being born prematurely and being small for gestational age. Alcohol is one of the most dangerous substances from the perspective of the unborn child and can cause more severe birth defects with challenges later in life. Prenatal exposure to alcohol is therefore the main focus throughout this report.

Prenatal exposure to tobacco smoking

Maternal tobacco smoking during pregnancy is a severe risk factor for the foetus in that smoking impairs placental functions. Prenatal exposure to tobacco smoking is associated with an increased risk of preterm birth and poor intrauterine growth, and it is a significant risk factor for low birth weight, which increases the risk of other complications. Smoking during pregnancy can affect the immune system of the foetus, increasing the risk for infections after birth. Exposure to tobacco smoking during pregnancy has also been associated with an increased likelihood of having other health issues in the childhood and behavioural problems such as hyperactivity (Hofhuis et al., 2003; Huang et al., 2018).

Use of snuff (snus), electronic cigarettes, or any other products with nicotine is not safe during pregnancy. These products seem to have similar negative effects on the foetus and the child as does tobacco smoking (Whittington et al., 2018; Rygh et al., 2019).

Prenatal exposure to other substances

Prenatal exposure to other substances such as drugs (for example cannabis, amphetamine, cocaine, opiates) can increase the risk of preterm birth and stillbirth. Research has mostly studied the effects of one drug and not polysubstance use but in general, prenatal exposure to drugs can reduce intrauterine foetal growth and is associated with low birth weight. Additionally, prenatal exposure to drugs can impair brain development of the foetus, with potentially long-lasting consequences for the structure and functioning of the brain. The newborn baby may also experience neonatal abstinence syndrome (NAS), which refers to the withdrawal symptoms caused by prenatal exposure to drugs. Some drugs, such as buprenorphine and methadone, are more likely to cause NAS than other drugs (Kocherlakota, 2014; Behnke et al., 2013).

Prenatal exposure to drugs can be associated with poor cognitive performance, including poor attention span, problems with externalising behaviours and/or impulse control, and delayed language development. These may be linked to some behavioural tendencies later in adulthood. Drugs can also affect the foetus indirectly through poor maternal nutrition and other poor health behaviours during pregnancy, and through increased risk of maternal mental health issues, violence, and poor access to healthcare services and infections. Longitudinal studies on the effects of prenatal exposure to drugs are scarce, and long-term outcomes can often be moderated or exacerbated by several other risk factors, such as poor maternal lifestyle habits and adverse childhood environment (Kocherlakota, 2014; Behnke et al., 2013; Oei, 2018).

Prenatal exposure to alcohol

A safe level of alcohol consumption during pregnancy has not been established; any amount and type of alcohol may harm the foetus throughout the pregnancy. Alcohol passes easily into the foetus's bloodstream from the bloodstream of the mother. The foetus does not have the ability to process alcohol, and consequently, alcohol

can remain in the foetus's bloodstream longer than in the bloodstream of the pregnant woman. This causes the foetus irreversible harm. Alcohol exposure can reduce the intrauterine growth of the foetus and increase the risk of miscarriage, preterm birth, and stillbirth. Alcohol can permanently impair the development of the foetus at any stage during pregnancy. It can damage the developing brain, the central nervous system, and other organs of the foetus. Alcohol can also cause malformations (Bailey & Sokol, 2011; Behnke et al., 2013).

Foetal alcohol spectrum disorders (FASD) is a non-clinical umbrella term to describe the spectrum of structural abnormalities, growth retardation, and neurodevelopment disabilities that can occur as a result of prenatal alcohol exposure. The most severe end of the spectrum has been defined as foetal alcohol syndrome (FAS). A FAS diagnosis requires the presence of growth deficiency (such as low birth weight for gestational age), evidence of a characteristic pattern of craniofacial abnormalities (i.e., smooth philtrum, thin upper lip, and small palpebral fissures), evidence of central nervous system (CNS) dysfunction, and confirmed in utero exposure to alcohol. FASD also includes the diagnosis of partial FAS (pFAS), alcohol-related birth defects (ARBD), and alcohol-related neurodevelopmental disorder (ARND) (Riley et al., 2011; Hoyme et al., 2016).

Children exposed to alcohol during pregnancy are a heterogeneous group. Alcohol can affect individuals in different ways, and the effects of prenatal alcohol exposure can vary from mild to severe, but the effects are permanent. The physical symptoms of prenatal alcohol exposure can include slow physical growth during pregnancy and after birth, difficulties with vision and hearing, and heart defects. The exposure can also cause intellectual disabilities, poor cognitive performance, problems with attention and impulse control, and hyperactivity. The list goes on to include delayed development and challenges in speech and socioemotional skills, and poor problem-solving, judgement, and reasoning skills. These impairments can increase the susceptibility to challenges in other developmental domains, and challenges with adult life, including difficulties with independent living and employment (Spohr et al., 2007; Streissguth, 2007; Riley et al., 2011).

Prenatal exposure to alcohol affects not only the exposed individuals but also the families and caregivers, as exposed individuals may require assistance from different services throughout their lives. Consequently, prenatal exposure to alcohol is also a significant

economic and social burden: the exposed individuals may have an increased need of medical and social services, leading to significant costs to the society. In a Swedish report, the annual costs related to FAS were estimated at 76 000 euros for a child and some 110 000 euros for an adult (Popova et al., 2012; Ericson et al., 2015).

Even these costs may be underestimated, as FASD can be difficult to diagnose in the absence of many apparent consequences of prenatal alcohol exposure. Furthermore, in some cases, an individual may be diagnosed with, for example, attention deficit hyperactivity disorder (ADHD), although the difficulties with behaviour and attention, learning problems, or other related difficulties are potentially associated with prenatal alcohol exposure.

Role of antenatal care in identifying alcohol use during pregnancy

In the Nordic countries, nearly all pregnant women attend antenatal care. Antenatal care is therefore an important setting for health promotion regarding information to pregnant women about the consequences of the use of alcohol and other substances during pregnancy. Asking pregnant women about alcohol use can result in reduced use and can also be an opportunity to discuss the harms related to the use of alcohol during pregnancy. The earlier alcohol use is identified, the better the chances are to help pregnant women to stop or reduce their use and lower the harms to the foetus. From a preventative and economic perspective, early identification of use of alcohol or other substances among pregnant women is therefore important. Furthermore, pregnancy can also be a motivating time for expectant mothers to change general lifestyle habits, including the pattern of alcohol use. However, it is crucial that healthcare professionals working with pregnant women who use alcohol understand the complexity of the social, mental, and physical health issues these women may experience (WHO, 2014).

The World Health Organization recommends that pregnant women be screened for use of alcohol in all healthcare settings. Several validated screening instruments are available, including the Alcohol Use Disorder Identification Test (AUDIT); the Alcohol Use Disorder Identification Test – Concise (AUDIT-C); Tolerance, Annoyed, Cut down, Eye-opener (T-ACE), and the Tolerance, Worried, Eye-opener, Amnesia, K-cut down screening test (TWEAK) (WHO, 2014) .

All screening instruments have advantages and disadvantages depending on how and where they are used. Not all the screening instruments have been made specifically for pregnant women but can be used among them. Many of the Nordic countries use AUDIT, TWEAK, or a combination of the two when screening pregnant women for the use of alcohol. However, other screening instruments are also in use.

If alcohol (and/or other substance) use during pregnancy is identified, the WHO recommends that healthcare professionals be prepared to intervene (WHO, 2014).

Stigma: a barrier to preventing prenatal alcohol exposure

In the Nordic countries stigma is attached to drinking during pregnancy because of the relatively high level of knowledge about the harms it can do. The stigma can be positive if it motivates women not to drink but it can have negative consequences if it makes them hide their drinking.

However, it is important to understand that stigma often leads to failure to acknowledge the reasons behind alcohol use, nor does stigma take into account that women who drink alcohol during pregnancy do not intend to cause harm to their child (Oni et al., 2020).

Women who drink alcohol when they are pregnant often fall into one or more of these categories:

1. They suffer from alcohol dependence and cannot stop using alcohol on their own
2. They are not aware that they are pregnant
3. They lack knowledge about the risks of alcohol use during pregnancy or they do not believe the risk information

It should be stressed that it is important to ask all pregnant women about their alcohol use and to provide information about the harms caused by prenatal alcohol exposure. The aim should not be to identify or treat only those with dependence (Bhuvaneshwar et al., 2007).

Identifying use of alcohol (and other substances) among pregnant women can be challenging for several reasons. Pregnant women who are dependent may fail to attend follow-up antenatal care, because their pregnancy is recognised later. The fear of stigma and

being blamed for alcohol use may also affect the women's willingness or courage to seek help. This is why pregnant women may not report their alcohol use. They may also resent the preconceptions among healthcare workers, or be wary of child welfare services (Oni et al., 2020).

The healthcare workers play an important role in the identification of alcohol use among pregnant women. Their approach, attitudes, skills, and time spent with the pregnant woman are therefore vitally important. The way in which healthcare workers ask pregnant women about alcohol use, and their interaction and trustworthy relationship can significantly affect how pregnant women share details of their alcohol use. The screening instruments may well help to start the conversation about alcohol use during pregnancy, but healthcare workers should have training, and feel competent and comfortable to start the conversation about alcohol use during pregnancy, and use a screening instrument. In addition, if alcohol use during pregnancy is identified, appropriate services and counselling should be available (Bhuvaneswar et al., 2007; Oni et al., 2020).

Prevalence estimates of alcohol use and smoking during pregnancy, and of FASD and FAS in the Nordic countries

The following table is an overview of the prevalence estimates of women in the general population who have consumed alcohol and have smoked during pregnancy. Also listed are the prevalence estimates of FASD and FAS in the Nordic countries. These estimates will also be presented in the individual country profiles. No data is available for the use of other substances during pregnancy.

The prevalence of FASD and FAS can be higher in specific sub-populations, for example among children in care (orphanage, foster care) due to potential adversities, such as parental substance abuse, in the caregiving environment. This can also be the case among adopted children from outside the Nordic countries (Robert et al., 2009; Popova et al., 2019). At the same time, the prevalence estimates of FASD/FAS may be underestimated overall, as people affected by prenatal alcohol exposure are often undiagnosed.

Country	Prevalence estimates of women who have consumed alcohol during pregnancy	Prevalence estimates of women who have smoked at the beginning of pregnancy	Prevalence estimates of FASD (per 1000 population)	Prevalence estimates of FAS (per 10 000 population)
Finland	15.7% ¹ 14.0% ²	14.2% ³	12.4/1000 ⁷	23.3/10 000 ¹
Sweden	9.4% ¹ 7.2% ²	4.2% ⁸	7.4/1000 ⁷	13.9/10 000 ¹
Norway	22.6% ¹ 4.1% ²	3.0% ⁴	17.8/1000 ⁷	33.6/10 000 ¹
Denmark	16.7% ⁶	10.1% ³	36.0/1000 ⁷	68.0/10 000 ¹
Iceland	8.9% ¹	5.0% ⁵	7.0/1000 ⁷	13.1/10 000 ¹
Greenland	NA	NA	NA	NA

(¹Popova et al., 2017; ²Mårdby et al., 2017; ³Heino & Gissler, 2018;

⁴Folkehelseinstituttet, 2019; ⁵Erlingsdottir et al., 2014;

⁶Kesmodel et al., 2016; ⁷Lange et al., 2017; ⁸Graviditetsregistret, 2018)

Note that the data by ¹Popova et al. (2017) and ⁷Lange et al. (2017) should be interpreted with caution as the data is based on small, older studies that may not be representative of the countries' situation today.



Identifying alcohol use among pregnant women in the Nordic countries

For each Nordic country, we will briefly describe the antenatal care system, the national guidelines regarding the use of alcohol and/or other substances during pregnancy, and how the use of alcohol is identified among pregnant women at antenatal care by specific (screening) instruments. We will also describe what services are provided if alcohol use is identified.

The country profiles were written with the help of such experts as midwives, obstetricians, and paediatricians from each of the Nordic countries. The experts helped with the country-specific materials and information, and proofread their own country profiles. Other materials which were used to compile the national profiles included national guidelines from health authorities, working papers, research reports, and statistical reports.

Finland

A recent systematic review and meta-analysis indicates that 15.7% of pregnant women use alcohol. Similar estimates have been found in a multinational European study, where 14% of the Finnish participants reported using alcohol after pregnancy recognition. The prevalence of smoking at the beginning of pregnancy among women in Finland is approximately 14.2%, which is the highest of the Nordic countries (Mårdby et al., 2017; Popova et al., 2017¹; Heino & Gissler, 2018).

Population-based prevalence estimates of FASD and FAS are not available for Finland. However, in a global study, Lange et al. (2017)¹ estimated that the prevalence of FASD in Finland could be approximately 12.4/1000 people (95% CI 8–17.9/1000), whereas Popova et al. (2017)¹ assessed the prevalence of FAS at 23.3/10 000 (95% CI 14.3–34.8).

¹ Note that the data by Popova et al. (2017) and Lange et al. (2017) should be interpreted with caution as the data is based on small, older studies that may not be representative of the countries' situation today.

Finnish antenatal care

Publicly funded antenatal care is offered for pregnant women at the municipal health centres free of charge. Municipalities are required to arrange the services in accordance with the laws and regulations. The Ministry of Social Affairs and Health has the key responsibility for guiding the development of antenatal care (THL & Kansallinen äitiyshuollon asiantuntijaryhmä, 2013; STM, 2018).

The aim of antenatal care is to protect the health and well-being of pregnant women and the foetus, and to identify pregnancy complications as early as possible. Antenatal care also aims to promote a safe childhood environment and supports parents in providing secure, child-focused rearing and care (THL & Kansallinen äitiyshuollon asiantuntijaryhmä, 2013; THL, 2018a).

Pregnant women on medication or with a chronic disease (for example, diabetes mellitus) are sent to a hospital antenatal outpatient clinic already when the pregnancy is being planned or, at the latest, when the woman becomes aware of the pregnancy. The patients are charged for these appointments (Tiitinen, 2019).

In a normal pregnancy, the pregnant women generally have 8–12 routine appointments at the health centre mainly with a public health nurse. The first appointment with the public health nurse is scheduled at pregnancy weeks 8–10. The routine appointments include an extensive health check for the whole family by a doctor and a public health nurse at pregnancy weeks 13–18. Another recommended health check-up delivered by a doctor usually takes place at the end of the pregnancy (THL, 2018b; THL, 2018c).

At the first appointment with the public health nurse, the lifestyle habits of the pregnant woman are assessed – including the use of tobacco, alcohol, and other substances – and the necessary services during pregnancy are planned. It is recommended that the woman's partner also attend the first antenatal care appointment. The use of tobacco, other substances, and alcohol should also be discussed with the partner in conjunction with the comprehensive health check at the latest (Tiitinen, 2019; THL, 2018c).

National guidelines

The national guidelines advise against the use of tobacco, other substances, and alcohol during pregnancy. The screening instrument AUDIT is recommended in the identification of alcohol use among

pregnant women and their partners. Alcohol use prior to pregnancy can also be discussed to help to identify the use during pregnancy. Healthcare workers can also use other materials, including medical records to identify use of alcohol. Intervention methods, such as motivational interviewing or brief interventions (*lyhytneuvonta / mini-interventio*) can be used to achieve changes in alcohol use during pregnancy. The negative effects of alcohol use during pregnancy should be discussed in conjunction with delivering the results of the AUDIT test (THL & Kansallinen äitiyshuollon asiantuntijaryhmä, 2013; Käypä hoito, 2015).

The use of other substances, too, is surveyed on a questionnaire with the expectant mother and the partner. Possible smoking is screened with Fagerström's nicotine dependence test; cessation services and/or nicotine replacement therapy are recommended (Käypä hoito, 2018; THL & Kansallinen äitiyshuollon asiantuntijaryhmä, 2013).

Special outpatient clinics

Pregnant women with dependence or use of alcohol and/or other substances can be referred to special antenatal outpatient clinics (such as the so-called HAL clinics) for pregnancy follow-up and other consultations evaluating the woman's psychosocial conditions. Referral to the clinic varies between regions, but can be done if a pregnant woman uses alcohol and/or other substances during pregnancy or if her AUDIT score exceeds a specified level (e.g., >8 / 40 points). Referral is similarly possible, if the woman has a history of drug use, misuses medications, or if the public health nurse or any other healthcare professional is concerned about the pregnant woman's use of alcohol and/or other substances. Reasons for referral can also relate to a partner's risky use of alcohol or other substances. HAL clinics (*poliklinikka huume-, alkoholi- tai lääkeongelmallisille*) are special outpatient clinics where pregnant women with alcohol and/or other substance use get follow-up in a multidisciplinary service setting with, for example, an obstetrician, paediatrician, midwife, social worker, and a psychologist. HAL clinics are currently available in all university hospitals and central hospitals. Depending on the region, appointments at HAL clinics can be chargeable (THL & Kansallinen äitiyshuollon asiantuntijaryhmä, 2013; Arponen, 2019).

Besides HAL clinics, municipalities can have their own services for substance-using pregnant women. The Federation of Mother and Child Homes and Shelters (*Ensi- ja turvakotien liitto*) has a

programme called Holding Tight® treatment system (*Pidä kiinni® -hoitojärjestelmä*), where women with substance misuse can live in mother–child homes already during the pregnancy for rehabilitation of substance misuse. The treatment system also supports early interaction and parenthood. The system includes mother–child homes and open care units across Finland. Involuntary treatment is not applied in Finland, so all the services for pregnant women who use alcohol or other substances are voluntary-based (THL & Kansallinen äitiyshuollon asiantuntijaryhmä, 2013; The Federation of Mother and Child Homes and Shelters, 2018).

After the pregnancy, the child’s physical, mental, and social conditions as well as the well-being of the entire family are followed up at child health clinics until school age. These clinics should enquire about the mother’s and her partner’s substance use after the pregnancy. Children with prenatal substance exposure are followed up in a multidisciplinary service setting at social paediatric outpatient clinics until school age. Such clinics are available in Helsinki, Pori, Oulu, and Turku, while social paediatric doctors are based at all regional hospitals (THL & Kansallinen äitiyshuollon asiantuntijaryhmä, 2013; STM, 2018).



Sweden

Estimates of the prevalence of alcohol use among pregnant women in Sweden vary from 6% to 9.4% between studies. A higher prevalence has been found in a study which suggested that 12% of the pregnant women continued using alcohol during pregnancy. An estimated 4.2% of pregnant women in Sweden smoke tobacco at the beginning of pregnancy, whereas 1.1% use snus (Mårdby et al. 2017; Skagerström et al., 2013; Popova et al., 2017²; Graviditetsregistret, 2018).

National-level estimates of the prevalence of FASD and FAS are not available. In a recent global study, Lange et al. (2017)² estimated that 7.4/1000 people could be expected to have FASD in Sweden (95% CI 1.5–14.8/1000), whereas Popova et al. (2017)² concluded that the prevalence of FAS could be 13.9/10 000 people (95% CI 2.8–28.4).

Swedish antenatal care

Maternal health care (*mödrahälsovård*) is the basis of all reproductive health in Sweden. Antenatal care is more aligned towards medical care in abnormal pregnancies. All services in maternal health care and antenatal care clinics are publicly funded and come free of charge for the pregnant woman. Organisational forms can differ: maternal health care is mostly provided under public health care, but county hospitals can be the main providers in small towns. Maternal health can even be cared for by private providers, but the services are still free of charge. The work in maternal healthcare clinics is regulated by regional guidelines, which follow the national guidelines. The regional guidelines are set and adjusted for the local conditions, which can differ between the smaller and larger communities.

The main aim of maternal health care is to reduce morbidity and disabilities among pregnant women and the unborn child, and to prevent complications during pregnancy. The clinics also seek to support new parents and enhance their parenting skills. Information is offered about tobacco, alcohol, physical activity, nutrition, and other lifestyle issues (Skagerström et al., 2012; Svensk Förening för Obstetrik och Gynekologi, 2016).

² Note that the data by Popova et al. (2017) and Lange et al. (2017) should be interpreted with caution as the data is based on small, older studies that may not be representative of the countries' situation today.

In a normal pregnancy, midwives provide and are responsible for maternal health care in Sweden. An obstetrician can be seen if needed. Pregnant women are invited to their first follow-up appointment at pregnancy week 8–10 at the maternal care clinic to assess the need for services and check-ups during pregnancy. The first appointment also includes a discussion about lifestyle habits – not forgetting the use of alcohol and other substances – and medical history. Generally, pregnant women have at least eight appointments during the pregnancy (Högberg et al., 2015; Svensk Förening för Obstetrik och Gynekologi, 2016).

National guidelines

Use of alcohol or other substances during pregnancy is not recommended, which is also emphasised by the Swedish Association of Midwives (*Svenska Barnmorskeförbundet*) and the Swedish Society of Obstetrics and Gynecology (*Svensk förening för Obstetrik och Gynekologi*) (Socialstyrelsen, 2018; Livmedelsverket, 2020).

The consumption of alcohol during pregnancy and its risks to the foetus are discussed with all pregnant women during the first maternal healthcare appointment. The AUDIT test is made during the first contact with almost all pregnant women. The midwife presents the AUDIT form and discusses the results with the woman. Midwives are trained in motivational interviewing and can apply this method, encouraged by the Swedish Association of Midwives, in the work with pregnant women to achieve changes in the lifestyle habits concerning alcohol use. The AUDIT results are documented in the woman's pregnancy journal, and an AUDIT test can also be done to identify the partner's alcohol consumption. If alcohol use during pregnancy is identified, Timeline Follow Back can be used as an instrument to get a systematic picture of the expectant mother's alcohol use and to document the amount of alcohol the foetus has been exposed to. If the expecting mother reports large amounts of alcohol use or if she is worried herself, referral to specialist dependency care is offered (Svenska Barnmorskeförbundet, 2018; Socialstyrelsen, 2018).

The use of tobacco, snus, and other drugs can be assessed with open questions, and identified use is documented in the pregnancy journal. There is ongoing discussion regarding the introduction of the DUDIT protocol (Drug Use Disorders Identification Test) to screen for the use of drugs. DUDIT corresponds to the AUDIT instrument.

Specialised services

The primary maternal healthcare clinics do not treat alcohol use problems but rather identify, inform, and advise pregnant women about the consequences of consuming alcohol during pregnancy. Pregnant women with significant dependence on drugs or alcohol are further referred to specialised services as early as possible. Specialised maternal healthcare services, integrated with multiprofessional teams, have been established in the three largest cities to provide care to substance-dependent pregnant women: Ambulatoriet in Malmö, Mödra–barnhälsovårdsteamet Haga in Gothenburg, and Rosenlunds Mödravårdsteam together with Rosenlunds Barnhälsovårdsteam in Stockholm (Socialstyrelsen, 2007).



Denmark

Recent Danish data suggest that the average alcohol intake among pregnant women has decreased over the past 20 years, and the proportion of women reporting any alcohol intake after recognition of pregnancy has fallen from approximately 70% in the late 1990s to 16.7% in 2013. The vast majority report drinking less overall, while the proportion of women who binge drink in early pregnancy has dropped from 60% to 40%, mainly during the early weeks before recognition of pregnancy (Petersen et al., 2015; Kesmodel et al. 2016).

The prevalence of FASD in Denmark is estimated to be approximately 36/1000 people (95% CI 20.1–57.6/1000) (Lange et al., 2017)³. In 2015, the Danish Health Authority estimated the prevalence of FAS to be approximately 13 per birth cohort followed for at least 10 years, which is in line with recent estimates from the United States of 3 per 10 000 in the background population as opposed to high-risk groups (Petersen et al., 2015; CDC, 2015). The prevalence of FAS has recently been estimated to be 68/10 000 (95% CI 36.2–111.4) by Popova et al. (2017)³, but this estimate is based on old data on alcohol consumption, and its value is therefore limited. The prevalence estimates of women who have smoked at the beginning of pregnancy in Denmark is approximately 10.1% (Heino & Gissler, 2018).

Danish antenatal care

The health of pregnant women comes under the Danish Health Act, which ensures that expectant mothers have the same rights as other patients in the healthcare system. Danish healthcare is publicly funded, and all the necessary support and care that women need during pregnancy, birth, and the maternity period are provided by the region and the municipality they live in. The overall aim of antenatal care is to cover the health, psychological, and social aspects of pregnancy, birth, and kinship. The focus is on general health promotion, prevention, and risk detection. The measures

³ Note that the data by Popova et al. (2017) and Lange et al. (2017) should be interpreted with caution as the data is based on small, older studies that may not be representative of the countries' situation today.

should be differentiated and adapted to the individual needs of the pregnant woman and her family (Sundhedsstyrelsen, 2013)⁴.

The Danish Health Authority (*Sundhedsstyrelsen*) issues recommendations on what the healthcare system is expected to do in relation to pregnancy, birth, and the maternity period. The five Danish regions carry out most of the duties, but municipal authorities will be involved in cases of alcohol dependence, as the municipalities are responsible for the social work area and drug and alcohol treatment (Sundhedsstyrelsen, 2013).

General practitioners and midwives are the primary professionals dealing with an uncomplicated pregnancy and birth. In a complicated or high-risk pregnancy, an obstetrician will coordinate the examinations and treatment of the woman. If there are risk factors such as alcohol dependence, other specialists and the municipality can also be involved (Sundhedsstyrelsen, 2013).

The Danish Health Authority has specified four levels of antenatal care and cross-sectoral cooperation to ensure pregnant women the necessary care and support they require on the basis of obstetric, social, and psychological risk factors. A general practitioner will conduct an individual assessment to determine how much follow-up or support a pregnant woman needs. Level 1 represents basic antenatal care for all healthy women with an uncomplicated pregnancy. On this level, there are three appointments with the general practitioner (the first appointment is at weeks 6–10 of pregnancy), two ultrasound scans, four to seven consultations with a midwife, and if necessary, a home visit by a trained nurse specialised in children's and adolescent health. There can be regional differences in what in practice is available as basic antenatal care, but as a minimum all healthy women with an uncomplicated pregnancy shall have the basic antenatal care recommended by the Danish Health Authority (Sundhedsstyrelsen, 2013).

If a pregnant woman smokes, for example, she will be assigned onto level 2 and should be offered smoking cessation as a part of her antenatal care. However, smoking cessation programmes are currently offered by the municipalities and not by the regions in charge of the hospitals and the healthcare centres. Most municipalities do not have special smoking cessation programmes aimed at pregnant women. A pregnant woman who is dependent,

⁴ A new edition of *Anbefalinger for svangreomsorgen* (Pregnancy care guidelines) is being prepared and is expected to be published in the first half of 2020. The country profile here is based on information from the 2015 edition.

for example, on alcohol and/or other substances will be on level 4 and will be referred to a regional family outpatient clinic (*familieambulatorie*).

National guidelines

The Danish Health Authority advises pregnant women against smoking and intake of alcohol and other substances. Similarly, women who are trying to get pregnant are recommended to avoid alcohol (for safety reasons), smoking, and other substances (Sundhedsstyrelsen, 2019a).

To strengthen the prevention of alcohol-related damage to a foetus during pregnancy, the Danish Health Authority recommends that all healthcare staff (general practitioners, midwives, etc.) in contact with women who are pregnant or who are trying to get pregnant, should inform the women about the damage alcohol and other substances can do to a foetus. As written in the pamphlet 'Prevention of substance abuse damages among foetuses' (*Forebyggelse af rusmiddelskader hos fostre*) pregnant women should have the information as early as possible during the pregnancy – preferably during the first appointment with the general practitioner and follow-up appointments with the midwife (Sundhedsstyrelsen, 2019b).

The Danish Health Authority also recommends using a systematic interview guide to ask pregnant women and their partner about their use of alcohol, tobacco, and other substances. However, it is not specified if the interview guide should be built on any specific screening instrument. This guide should be used at the first appointment with the general practitioner. Depending on the answers given, the general practitioner will then decide which intervention and what level of antenatal care is needed. The midwife will also follow up on the general practitioner's recommendations throughout the pregnancy (Sundhedsstyrelsen, 2013).

It is recommended by the Danish Society of Obstetrics and Gynaecology that the screening for alcohol use among pregnant women should include questions about average alcohol consumption and episodic high consumption, and a screening tool to detecting problematic alcohol consumption. The Danish Health Authority lists the 'TWEAK screening guide' (*TWEAK screeningsguide vedrørende gravides brug af alkohol*) as an example on their webpage for the general practitioner to use when a pregnant woman first

visits the doctor. The general practitioner can also ask women to fill out the questionnaire 'About alcohol - questions to pregnant women' (*Om alkohol - spørgsmål til gravide*) (Dansk Selskab for Obstetrik og Gynækologi, 2016; Sundhedsstyrelsen, 2019b).

Family outpatient clinics

Since 2011, all Danish regions have had established family outpatient clinics, in connection with one or more of their maternity wards. These family outpatient clinics seek to strengthen the regional prevention and treatment of substance-related congenital physical, mental, and social harms and diseases in children. The clinics are intended to optimise the regional health service's contribution to the total effort to help pregnant women with a harmful alcohol and substance use. The clinics cooperate with the municipal authorities who are responsible for the social work area and for drug and alcohol treatment (Sundhedsstyrelsen, 2015).

The family outpatient clinics are all based on the same intervention model developed over many years of clinical practice at Hvidovre Hospital and Rigshospitalet in the capital area of Denmark. Family outpatient clinics are specialised units with the necessary expertise and support across sectors. The clinics deal with the prevention work and treatment of pregnant women who have (or have had) a misuse of alcohol and/or other substances. The family outpatient clinics' treatment can extend over a long period of time, from when a pregnancy is detected until the child reaches school age. Currently, the follow-up of children is performed in only three of the five regions (Sundhedsstyrelsen, 2009; Sundhedsstyrelsen, 2013).



Norway

The estimates of alcohol use among pregnant women in Norway vary between studies. According to Mårdby et al. (2017), 4.1% of the Norwegian participants (n=1283) reported consuming alcohol after confirmed pregnancy. In a global study, Popova et al. (2017)⁵ gave higher prevalence estimates, suggesting that 22.6% (95% CI 9.1–39.7) of pregnant women in Norway consumed alcohol during pregnancy. It has been estimated that 3.4% of pregnant women in Norway smoke tobacco at the beginning of pregnancy (Folkehelseinstituttet, 2019), and that 2.8% use snus in the first trimester and 1.8% in the third trimester (Rygh et al. 2019).

Lange et al. (2017)⁵ have calculated that the prevalence of FASD in Norway could be 17.8 per 1000 people (95% CI 4.1 and 35.2/1000), while the prevalence of FAS according to Popova et al. (2017)⁵ could be approximately 33.6/10 000 people (95% CI 7.7–67.6).

Norwegian antenatal care

All pregnant women are entitled to free maternity care at a maternity and child health care centre (*helsestasjon*). Maternity care is provided by a midwife or a general practitioner at these centres. It is up to the expectant mothers to decide who they want to make their antenatal appointments with. Generally, there are eight antenatal appointments during pregnancy. The first appointment is recommended to be scheduled as early as possible after pregnancy has been confirmed, usually taking place during pregnancy weeks 6–12. At the first appointment, different issues related to the pregnancy are discussed such as general lifestyle habits including the use of tobacco/snus and alcohol. The midwife or the general practitioner will also plan the care the pregnant woman is offered during the pregnancy and identify if additional care or support is needed (Helsedirektoratet, 2018a).

National guidelines

In general, the use of tobacco, alcohol, and/or other substances is not recommended during pregnancy because of the different consequences it can have for the foetus. If the woman needs support

⁵ Note that the data by Popova et al. (2017) and Lange et al. (2017) should be interpreted with caution as the data is based on small, older studies that may not be representative of the countries' situation today.

to change her drinking habits or abstain from alcohol, she can contact the midwife or the general practitioner, who will then refer her to counselling and follow-up to help her to abstain from alcohol throughout the pregnancy (Helsedirektoratet, 2018b; Helsedirektoratet, 2019a).

According to the national guidelines from the Norwegian Directorate of Health, midwives and or general practitioner should make every effort to ask pregnant women about their tobacco, alcohol, and other substance use at the first antenatal appointment. If any kind of use is detected, the midwife or general practitioner should offer support and further assistance to help the expectant mother to reduce or quit her use. The Norwegian Directorate of Health recommends that the screening of alcohol use be done with TWEAK or AUDIT (Helsedirektoratet, 2019b).

In practice, healthcare workers in antenatal care use a screening instrument which combines questions from TWEAK and AUDIT-C and which has been modified for pregnant women. The results of the screening are the starting point for a conversation about alcohol with the expectant mother (Helsedirektoratet, 2017).

An early intervention training programme (*Tidlig inn*) with a focus on, among others, alcohol and pregnancy is available to municipal employees; these are primarily healthcare workers and general practitioners who see pregnant women. Motivational interviewing is included in the training programme as a method of getting comfortable to talk about alcohol and pregnancy. The training programme is disseminated by the seven regional drug and alcohol competence centres (abbreviated as KoRus) (*Tidlig inn*).

If there is a suspicion about a substance use during pregnancy, the suspicion will be presented to the mother/parents. The mother/parents are offered counselling and follow-up in the specialised health care (*spesialisthelsetjenesten*) and extended follow-up in the municipal health care (*kommunehelsetjenesten*) (Helsedirektoratet, 2014).

Norwegian law of coercive treatment

Norway is the only country in Europe to have a law on coercive treatment (including involuntary treatment) for substance-abusing pregnant women. The use of coercion treatment was legalised in Norway in 1996 and favours the health of the unborn child over the expectant mother's right to freedom. Pregnant women can be taken

into inpatient treatment without their consent, if the substance abuse constitutes a reasonable threat to the foetus and if voluntary approaches are insufficient (Myra et al., 2017; Lovdata, 2011).

Regional Competence Centre for children with prenatal alcohol/drug exposure

Norway has one regional competence centre for children up to the age of 18 who have been exposed to substances during pregnancy (*Regional Kompetansetjeneste – medfødte ruskskader Helse Sør-Øst*). Based at Sørlandet Hospital in Arendal, it is the only competence centre in the Nordic countries to specialise in clinical assessments of children with prenatal alcohol/drug exposure. The competence centre aims to disseminate expertise on the diagnosis, examination, and follow-up of children with prenatal substance exposure, and offers diagnostic services for the affected children. The centre also aims to improve the service system for affected children and provides training for authorities and clinicians. Children are referred to the centre through specialist health services (RK-MR, 2018; Sørlandet Sykehus, 2020).



Iceland

National-level prevalence rates of the use of alcohol and other substances among pregnant women in Iceland remain unclear. In a global systematic review and meta-analysis, Popova et al. (2017)⁶ estimated that approximately 8.9% of the pregnant women consumed alcohol. Based on unpublished data, it has been estimated that 40–50 women are annually referred to a special antenatal clinic at the Landspítali National University Hospital of Iceland (*LNUH*) due to either recent (within a year) use of alcohol and/or other substances or use during pregnancy. Following this estimate, about 1.2% of the approximately 4000 annual births would be pregnancies where the foetus has been exposed to alcohol and/or other substances. Also, it is estimated that 5% of pregnant women in Iceland smoke at the beginning of pregnancy (Erlingsdóttir *et al.*, 2014).

National-level estimates of FASD and FAS are not available. According to recent global estimates, the prevalence in Iceland of FASD could be expected to be 7.0 per 1000 people (95% CI 4.5–10.1) and the prevalence of FAS 13.1 per 10 000 people (95% CI 8.0–19.7) (Lange et al., 2017; Popova et al., 2017)⁶.

Icelandic antenatal care

Antenatal care is provided at the primary healthcare centres and is free of charge for pregnant women who have had legal residence in Iceland for the last six months. Women experiencing high-risk pregnancies are referred to hospital antenatal outpatient clinics for specialised care. The purpose of antenatal care is to promote the health and well-being of pregnant women and the unborn child. Municipalities are responsible for arranging the publicly funded services according to laws and regulations. The Ministry of Health has the key responsibility for guiding the development of the clinics (Embætti landlæknis, 2010).

On average, pregnant women have 7–10 routine antenatal care appointments during pregnancy. The first appointments during early pregnancy are designed to promote health and identify potential risks during pregnancy. The very first appointment generally takes place before week 10 of the pregnancy, and the services are available

⁶ Note that the data by Popova et al. (2017) and Lange et al. (2017) should be interpreted with caution as the data is based on small, older studies that may not be representative of the countries' situation today.

throughout the pregnancy. Lifestyle habits, medications, and the use of substances are discussed at the first appointment and later as needed. Nearly all antenatal care is provided by midwives, with collaboration from doctors and other healthcare professionals if risk factors or complications exist (Embætti landlæknis, 2010; Sigurdardottir et al., 2017; Registers Iceland).

National guidelines

Pregnant women are advised not to consume any alcohol or any other substances during pregnancy. The risks associated with tobacco smoking during pregnancy should be discussed and it should be made clear that stopping smoking at any time during pregnancy is beneficial for the pregnant woman and the unborn child (Embætti landlæknis, 2010; Sigurdardottir et al., 2018).

According to national guidelines issued by the Directorate of Health, expectant mothers should be asked about their use of alcohol, tobacco, and other substances at the first antenatal care appointment. Antenatal care providers are encouraged to pay attention to any signs of alcohol or other substance use throughout the pregnancy. There are no recommendations about the routine use of a particular screening instrument in the national guidelines but according to LNUH guidelines, antenatal care providers are encouraged to use questions derived from the 4 Ps plus screening tool or the Substance Use Profile/Pregnancy Scale (Chasnoff et al., 2005; Yonkers et al., 2010).

Specialised services

If a pregnant woman is identified with alcohol or other substance use, she is encouraged to stop using the substances and is advised to seek help from the specialised addiction and substance abuse services. Inpatient care for individuals with substance use is provided by two institutions, The National Center of Addiction Medicine (SÁÁ) and the addiction and mental health services at LNUH (Fíknigeðdeild Landspítala). Pregnant women have priority access to these institutions. If inpatient care is insufficient or inappropriate, women have access to counselling interviews and day-patient care at LNUH. Furthermore, women who have had substance use problems within a year before getting pregnant are referred to a specific perinatal addiction and mental health team at the antenatal outpatient clinic at LNUH for further assessment. The team consists of

multidisciplinary professionals, involving specialised midwives, social workers, a psychologist and an obstetrician. Women can also be referred to outpatient services focusing on parent–infant interaction for a special follow-up during pregnancy or the first year after giving birth. Pregnant women who smoke tobacco have access to support and counselling with a midwife who provides antenatal care or at specialised services for smoking cessation (Sigurdardottir *et al.*, 2018).

According to the Child Protection Act No. 80/2002, health care providers "*are obliged to notify a child protection committee if there is reason to believe that the health or life of an unborn child is being endangered due to the unacceptable or dangerous lifestyle of an expectant mother, e.g. in the form of alcohol abuse or the consumption of drugs...*". If substance abuse is recognised during pregnancy, the municipal child protection services get involved. In most cases, an agreement on an intervention plan is drawn up with the woman/family for a follow-up during pregnancy and postpartum (Government of Iceland, 2002).

Unfortunately, Iceland lacks special clinics that follow up children with prenatal exposure to alcohol or other substances, but there are other resources available for families whose psychosocial conditions give cause for concern. The municipal service centres provide services and advice to vulnerable families, including early support home visits. Furthermore, if a woman/family has been referred to specific services focusing on parent–infant interaction during pregnancy, the follow-up can last up to a year postpartum.

If the child protection services have been involved during pregnancy, they will provide follow-up according to the intervention plan agreement on an individual basis.



Greenland

Greenland is a part of the Kingdom of Denmark, but has had self-government since 2009. It is home to about 56 000 people spread over a geographically vast area along the ice-free coastline of Greenland. Around 60% of the population live in the five largest cities, while the rest live in smaller cities and settlements (Grønlands statistik, 2020).

There are no available data on the prevalence estimates of alcohol and other substance use among pregnant women in Greenland or any available data on the prevalence estimates for FASD and FAS.

In a Greenlandic population study from 2018, a new indicator (the AUDIT test) was introduced to calculate for a possible alcohol problem on a population level. The AUDIT test can detect a possible alcohol problem based on the score on questions regarding alcohol consumption, drinking patterns, and alcohol-related problems. For women in the 2018 study, a score below 7 indicates non-risky alcohol use, a score between 7 and 15 indicated large alcohol consumption, a score between 16 and 19 indicated risky consumption of alcohol, and a score between 20 and 40 indicated alcohol dependence. The scores are slightly different for men (Larsen et al., 2019).

The calculations of the AUDIT test done in the population study showed that 58% of Greenlanders had non-risky alcohol use, 32% had large alcohol consumption, 5.9% had a risky consumption of alcohol, and 4.7% were alcohol-dependent. The share of those with a large alcohol consumption, a risky consumption of alcohol, and with alcohol dependence was collectively referred to as persons with a possible alcohol problem. In the 15–24 age group, 56% of the women had a possible alcohol problem, while the figure was 42% among women in the 25–34 age group. Although the calculations of the AUDIT test in the population study show that a large proportion of women in childbearing age have a possible alcohol problem, the figures do not report about alcohol use among pregnant women. The calculations can nevertheless imply that a large proportion of women in childbearing age might have a possible alcohol problem which can turn into a problem if the women are not aware of their pregnancies or become pregnant unplanned (Larsen et al., 2019).

Greenlandic antenatal care

Antenatal care is free of charge for all pregnant women in

Greenland, and all women are entitled to the same kind of antenatal care. In practice there can be individual differences depending on where in Greenland one lives – in a city with easy access to a hospital and the right expertise from a doctor and a midwife, or in a settlement (Peqqik.gl, a).

Pregnant women from settlements have to go to the nearest hospital to see a doctor (and, if possible, a midwife) two to three times during pregnancy. This can be a challenge depending on the distance to the nearest hospital and what type of transportation is available (air transport and/or boat). In the settlements the women will be followed up by the local healthcare assistant throughout the pregnancy (Rode et al., 2015).

All births in Greenland take place in one of the five birthplaces throughout the country. If the pregnancy has been uncomplicated, the birth can take place at the nearest birthplace to where the woman lives. With a complicated pregnancy or a potentially complicated birth, the birth will be scheduled to take place at the country hospital in the capital Nuuk, where the most expertise is available (Det Grønlandske Sundhedsvæsen).

On average, pregnant women have eight routine appointments with the midwife (or local healthcare assistant), but more appointments can be scheduled if needed. The midwife (or local healthcare assistant) is the primary healthcare professional throughout the pregnancy (Peqqik.gl, a).

The first appointment with a midwife is scheduled preferably before week 10 of pregnancy. There are no national recommendations about the use of a particular screening instrument but at the first appointment with the midwife there will be a general talk about what is needed to secure a healthy pregnancy. This includes a healthy diet, exercise, and abstaining from alcohol, tobacco, and hash. The midwife will also ask the expectant mother about previous pregnancies and birth experiences, about her and her partner's upbringing, and about the family's current life situation. This can help the midwife to recognise or detect whether extra interventions should be offered during the pregnancy to ensure the child a healthy start in life. In example by referring the family to 'Early Intervention' (*Tidlig indsats*) (Peqqik.gl, b; Peqqik.gl, c).

'The Greenlandic Council of Alcohol and Drugs' (*Alkohol- og Narkotikarådet*) advises women against intake of alcohol during pregnancy. Similarly, women who are trying to get pregnant or who are breastfeeding are recommended to avoid alcohol (Peqqik.gl, c).

MANU: a holistic educational programme for parents

MANU is a holistic educational programme for parents (men and women), foster and adoptive parents included. MANU is available throughout Greenland to support parents on their way to parenthood and to become the best parents that they can be. MANU is a politically-decided and a government-funded programme, which includes material for the pregnancy period and until the child is 3–4 years old. Furthermore, different MANU materials (brochures, short animated videos, etc.) have been produced specifically about alcohol and hash to inform the parents about the consequences that this kind of risk behaviour has for the foetus and the child. In the MANU material focusing on alcohol use during pregnancy, the child is often used as a motivator not to drink. For example, you feel like having a glass of wine; don't, think of your child (MANU).

MANU also contains specific questions about alcohol and hash use/misuse which the health personnel can use in the conversation with the pregnant woman. If a pregnant woman misuses alcohol, alcohol treatment is an option. The option of abortion will also be discussed as it can sometimes be the best solution for the woman/family and her/their life situation (MANU).

Treatment for alcohol dependence

If alcohol (and/or hash) dependence is known or detected after becoming pregnant treatment can be necessary. There are two options for treatment based on different methods. Allorfik offers treatment to individuals but also families through 'Early intervention' (*Tidlig indsats*) in centres located in the largest city of every municipality throughout Greenland. The treatment is based on motivational interviewing and cognitive behavioural therapy. Katsorsaavik is located in Nuuk and offers treatment to everyone in Greenland. The treatment is based on the Minnesota Model of addiction treatment and the CENAPS® Model of Relapse Prevention Therapy. The treatment is free of charge for all residents of Greenland (Peqqik, c; Allorfik, a; Allorfik, b).



Summing up and conclusions

Exposure to alcohol and/or other substances during pregnancy is a major risk to the development of the foetus. From the unborn child's perspective, only zero consumption is risk-free. The consequences of prenatal exposure to alcohol and/or other substances can be lifelong, and the exposure may harm several developmental domains of these children. Preventing the harm early on is also important from the society's perspective, as the negative consequences can lead to significant societal costs. The negative consequences of the use of alcohol and/or other substances during pregnancy should be a more integrated part of the school curriculum and discussed with everyone from an early stage. Moreover, it should be a general part of the training of healthcare professionals, because they have a crucial role in identifying potential use among pregnant women.

The majority of women attend antenatal care during pregnancy, and antenatal care therefore plays an important role in securing a healthy pregnancy and in identifying risk behaviour, such as the use of alcohol among pregnant women. Pregnancy can also motivate a woman to change her lifestyle habits and the use of alcohol.

Healthcare professionals have a central role in initiating conversation with a pregnant woman regarding her use of alcohol, and the consequences of the use for the foetus and the child in long term. It is important that the healthcare professionals feel comfortable and competent about starting a discussion about a prospective mother's use of alcohol. Furthermore, building a trusting relationship between the healthcare professional and the pregnant women should be emphasised. This might encourage the pregnant women to tell about their use of alcohol. However, there is a risk that the women remain quiet about their use for fear of stigma or child welfare services. If a use is identified, the healthcare professionals should be trained to intervene. Likewise, it is important that appropriate services are available for the women, preferably free of charge in order to secure pregnant women's engagement and in order to reduce the risks for the foetus. Healthcare professionals should also be informed about the available services, and the continuity of services for the pregnant women should be secured.

This report has briefly described the antenatal care system in each of the Nordic countries, how the use of alcohol, in particular, is identified, and by which screening instruments. Rather than reviewing or comparing which screening instruments are the most appropriate in identifying use of alcohol among pregnant women, the aim has been to describe the screening instruments available and used in the Nordic countries. The country profiles can help to learn from other countries' practices and to reflect on one's own practices in relation to other Nordic countries.

All the Nordic health authorities recommend total abstinence from alcohol and/or other substances during pregnancy. It is important to send a clear message that only zero consumption is risk-free in order to avoid spreading confusing information among pregnant women, healthcare professionals, and the general population.

The prevalence estimates of alcohol use among pregnant women presented in the report indicate that there might be differences between the countries. However, this report is not able to answer why such differences might exist or what could explain the differences, but future Nordic research collaboration could address the underlying reasons for the potential differences.

What is also needed are prevalence studies of FASD/FAS in the Nordic countries to help us to better understand how many are affected and to appreciate the size of the problem. However, if there is a lack of knowledge to diagnose FASD/FAS, it is difficult to conduct prevalence studies. Without prevalence studies, we cannot know how big the problem is, and without knowing the size of the problem it is difficult to influence the political level to get the right support and funding. Without the right support for the affected population group, it can lead to stigmatising of people with FASD/FAS. If no support is available, it is difficult to help the affected individuals and to ensure better interventions targeting alcohol use during pregnancy.

These questions require more attention to secure a healthy alcohol-free pregnancy and to support the affected individuals.

Prenatal exposure to alcohol is a blind spot and needs to be put under the spotlight.

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