

The Midwife's Dialogue about Alcohol
from a Life Cycle Perspective
with both Parents-to-be

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Abstract

Alcohol use during pregnancy can damage the fetus. Midwives at antenatal care (ANC) screen pregnant women for *risk drinking* in early pregnancy. There are however, no routines involving both parents-to-be in a dialogue about alcohol.

The aim of this thesis is to investigate alcohol use among pregnant women and their partners and to evaluate a method for midwives' dialogue about alcohol in a life cycle perspective with both parents-to-be.

Study I was a quasi-experiment within ANC. An intervention group (IG) received counseling with the midwife about alcohol use. The IG (238 couples) and a comparison group (271 couples) filled out questionnaires in early and in late pregnancy about alcohol use and support for an alcohol-free pregnancy. Study II was a cross-sectional study where 444 partners of pregnant women filled out a questionnaire at ANC about alcohol use, motives for decreased drinking and their perception about the midwives' counseling about alcohol.

Alcohol consumption was low among the pregnant women. One third (30 %) had decreased alcohol use before pregnancy and 90% stopped drinking after pregnancy confirmation. Of the partners, 24 % decreased alcohol use before pregnancy and 40 % decreased during pregnancy. Around 90 % of the women received support for an alcohol-free pregnancy, compared to 37 % of the partners. Twenty per cent of partners and 25 % of pregnant women reported alcoholism in their family. Partners who had alcoholism in the family drank more than partners without this experience. A majority, 95 %, of the partners in study II used alcohol, 29 % were binge drinking on a normal drinking day and 74 % were binge drinking occasionally. Most partners appreciated the counseling about alcohol and reported various motives for decreased alcohol consumption.

Many pregnant women and partners decreased alcohol consumption in transition to parenthood, which is a crucial time for changing alcohol-drinking patterns. Involving both parents-to-be in counseling about alcohol restrictions during pregnancy may be a useful health promotion strategy.

Keywords: alcohol consumption, AUDIT-C, drinking context, health promotion, intervention, life cycle perspective, partners, pregnancy, social support

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To my beloved family, without your support this wouldn't be possible!

List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.

- I Högberg, H., Spak, F., Larsson, M. (2015). Dialogue between Midwives and Parents-to-Be about Alcohol, from a Life Cycle Perspective—An Intervention Study. *Creative Education*, 6, 489-500. doi: 10.4236/ce.2015.65049
- II Högberg H., Skagerström J., Spak F., Nilsen P., Larsson M. (2016) Alcohol Consumption Among Partners of Pregnant Women in Sweden: A Cross-sectional Study. (submitted)

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Contents

| | |
|----------------------------------------------------------------------------------------------------------|----|
| Summary in Swedish..... | 11 |
| Definitions and explanations..... | 13 |
| Preface..... | 15 |
| Introduction..... | 17 |
| Alcohol use in Sweden, changes over time, risk drinking..... | 17 |
| AUDIT, AUDIT-C..... | 17 |
| Alcohol and pregnancy..... | 18 |
| Social support for alcohol free pregnancy and during parenthood..... | 19 |
| Towards a theory for the dialogue about alcohol with parents-to-be from a life cycle perspective..... | 20 |
| Rationale..... | 22 |
| Aims..... | 23 |
| Overall aim..... | 23 |
| Specific aims..... | 23 |
| Study I..... | 23 |
| Study II..... | 23 |
| Material and method..... | 24 |
| Antenatal care (ANC) organization in Sweden, registration in national registers..... | 25 |
| Study I..... | 26 |
| Design..... | 26 |
| Setting..... | 26 |
| Participants..... | 26 |
| The intervention..... | 28 |
| Instrument..... | 31 |
| Analysis of the Drop-outs..... | 32 |
| Data analysis..... | 32 |

| | |
|-----------------------------------------------------------------------------|----|
| Study 2 | 32 |
| Design | 32 |
| Setting | 32 |
| Participants and procedure | 33 |
| Instrument | 33 |
| Data analysis | 33 |
| Ethical aspects | 34 |
| Results | 35 |
| Study I | 35 |
| Study II | 36 |
| Discussion | 38 |
| The family perspective on alcohol and pregnancy | 38 |
| Partners' alcohol consumption | 39 |
| Support | 40 |
| Alcoholism, dependence or addiction in the family | 40 |
| Theoretical considerations | 41 |
| The dialogue about alcohol is complex | 41 |
| Health promotion and midwives perspective on alcohol and pregnancy | 42 |
| Methodological considerations | 44 |
| Conclusions | 46 |
| References | 49 |
| Acknowledgements | 55 |
| Appendix | 57 |

Abbreviations

| | |
|---------|---------------------------------------------------------------------------------------------------------------------|
| AUD | Alcohol Use Disorder |
| ANC | Antenatal care |
| AUDIT | Alcohol Use Disorders Identification Test |
| AUDIT-C | Alcohol Use Disorders Identification Test (containing the three questions about alcohol consumption in AUDIT) |
| CG | Comparison group |
| FAS | Fetal Alcohol Syndrome |
| FASD | Fetal Alcohol Spectrum Disorders |
| IG | Intervention group |
| MBR | Medical Birth Register |
| MHR | Maternal Health Record |
| MI | Motivational Interviewing |
| PMT | Protection Motivation Theory |
| SDT | Self-Determination Theory |
| SOC | Sense of Coherence (Antonovsky) |
| WHO | World Health Organization |

Summary in Swedish

Licentiatavhandlingen om ”Barnmorskans samtal om alkohol i livscykelperspektiv med båda de blivande föräldrarna” syftar till att utvärdera en metod för socialt och psykosocialt stöd för alkoholfri graviditet respektive ansvarsfull alkoholkonsumtion under föräldraskapet avseende båda de blivande föräldrarna, samt undersöka den praktiska tillämpbarheten av sådan metod.

Barnmorskans hälsosamtal inom mödrahälsovården (MHV) i graviditetsvecka 6-7 innehåller AUDIT-screening och ett alkoholsamtal om den gravida kvinnans alkoholvanor året före graviditeten och om eventuell alkoholkonsumtion efter graviditetsbeskedet. I interventionsstudien kompletterades denna rådgivning med ytterligare frågor och ett samtal med båda blivande föräldrarna om alkohol i ett livscykelperspektiv. Barnmorskan samtalande med båda i paret om egen förändrad alkoholkonsumtion året före graviditeten, om alkoholism/beroende/missbruk fanns i den egna ursprungsfamiljen, om vilka paret dricker alkohol tillsammans med samt om någon eller båda blivande föräldrarna ändrat alkoholkonsumtion efter graviditetsbeskedet.

Alla data samlades in vid ordinarie besök på barnmorskemottagningar i Sverige. I delstudie I deltog 238 par i interventionsgruppen och 273 par i jämförelsegruppen. Data samlades in med frågeformulär vid inskrivningssamtalet och i slutet på graviditeten. I delstudie II deltog 444 gravida kvinnors partner och data insamlades i anslutning till ett besök på barnmorskemottagningen efter graviditetsvecka 17.

De flesta gravida kvinnor avstod alkohol efter att graviditeten blivit känd. Interventionen visade inte någon effekt på alkoholkonsumtionen, varken hos den gravida kvinnan eller hennes partner. De gravida kvinnor som fortsatte dricka alkohol under graviditeten var lika ofta omfödorskör som förstfödorskör, vilket medför att barnmorskan ska samtala om alkohol i livscykelperspektiv i tidig graviditet med alla blivande föräldrapar, vid alla graviditeter.

Det var viktigt för de flesta gravida kvinnorna (92 %) att få stöd till alkoholfri graviditet. Fler gravida kvinnor i interventionsgruppen än i kontrollgruppen erbjöds alkoholfria alternativ och uppgav mödrahälsovården som viktigaste informationskälla avseende alkohol. Partners med alkoholism i familjen hade en högre alkoholkonsumtion än partners utan denna erfarenhet. Att

involvera partnern i samtal om alkohol under graviditet kan vara en användbar och hälsofrämjande strategi. (Delstudie 1).

En majoritet av alla partners minskade sin alkoholkonsumtion inför föräldraskapet, vilket verkar vara en viktig tid för att ändra alkoholvanor. De flesta partner uppskattade barnmorskans samtal om alkohol och graviditet. Partner med högre AUDIT-C poäng rapporterade mer stöd för minskat drickande och de minskade också sitt drickande mer än de med lägre konsumtion. Partner som fyllt i AUDIT tillsammans med den gravida kvinnan var mer nöjda med barnmorskans alkoholsamtal. (Delstudie 2).

Denna licentiat-avhandling visar att det är möjligt att upptäcka partner med hög alkoholkonsumtion under graviditeten och erbjuda insatser för stöd till minskad alkoholkonsumtion under graviditetstiden. Skriftlig information om alkoholkonsumtion inför och under föräldraskap riktad till partner behövs.

Definitions and explanations

Alcohol Use Disorder (AUD): Alcohol diseases according to DSM-V, previously (in DSM-IV) called alcohol abuse and alcohol dependence. In ICD-10 the corresponding concepts are, harmful use and dependence.

AUDIT: 10 questions about alcohol consumption, risky drinking and dependency.

AUDIT-C: a shorter form of the AUDIT questionnaire containing three questions about alcohol consumption.

Binge drinking: In the thesis binge drinking was defined as 6 or more glasses containing alcohol for both men and women. A “glass” is understood to contain 12 grams of pure alcohol.

Risk drinking: refers to > 14 glasses/week for men (each glass containing 12 gram pure alcohol), and > 9 glasses for women/week.

Hazardous drinking: A pattern of substance use that increases the risk of harmful consequences for the user. The term is used currently by WHO but is not a diagnostic term in ICD-10.

Alcohol-free pregnancy: is defined in this thesis as no alcohol consumption after the pregnant woman has become aware of her pregnant state.

Responsible drinking: refers to drinking in a conscious way that does not cause harm to oneself or to others.

Information about alcohol: refers, in this thesis, to midwives’ verbal and written information, including how alcohol reaches the fetus and how this affects the fetus during pregnancy.

Counseling regarding alcohol: is based on clinical guidelines for antenatal care and consists of the midwife’s verbal advice to the pregnant woman to abstain from alcohol throughout the entire pregnancy, encouraging discussion concerning specific needs of the client/patient related to abstaining from alcohol. The counseling intervention investigates the pregnant woman’s alcohol use; one year prior to the pregnancy, in the beginning of the pregnancy, before the pregnancy was known and the current consumption of alcohol. The counseling also includes an inquiry into any general worries the woman might have. As part of this intervention, when the pregnant woman is drinking after the pregnancy is known, and the AUDIT-score is more than nine, the midwife will then refer the pregnant woman to a specialist team. Midwives are educated for counseling about alcohol and many of them use Motivational Interviewing (MI).

Dialogue regarding alcohol: in this thesis is understood as the next step after midwives’ initial general counseling regarding alcohol, with both par-

ents-to-be, encouraging them to talk about alcohol consumption based on their AUDIT-scores. Furthermore, the couple is encouraged to reflect upon the ANC recommendations concerning alcohol consumption, their own experiences of alcohol during their lifetime, and what they think about alcohol and their role as a parent.

Harm to others: In recent years, research on alcohol-related problems has widened the scope from problems suffered by the drinker her or himself to problems suffered by others (spouses, children etc.) [1].

Alcohol from a life cycle perspective: alcohol experiences over life time, including pregnancy, as well as alcohol consumption and AUD related to children, parents and grandparents.

Preface

During my clinical midwifery work in antenatal care (ANC), I started to discuss alcohol from a life cycle perspective with all parents to be during all pregnancies. I was curious about how partnered parents-to-be were affected by each other's alcohol consumption habits/patterns and what role, if any, that the midwife could play. Should the midwife take a more active role and when; should she simply observe these interactions between couples. One question persisted in my mind: If we, as midwives, could provide information about alcohol using a life cycle perspective, we could encourage a dialogue between parents-to-be that could potentially lead to changes in alcohol consumption habits that would benefit their future children's well-being.

Introduction

Alcohol use in Sweden, changes over time, risk drinking

In 2010, delegations from all 193 Member States of World Health Organization (WHO) reached consensus at the World Health Assembly on a global strategy to confront the harmful use of alcohol. Alcohol affects psychosocial health and because most of the population in EU drinks alcohol, this is of major public health importance.

Alcohol affects overall health and is, therefore, important from a public health perspective globally. After tobacco and high blood pressure, alcohol is the third largest risk factor for men and seventh largest risk factor for women for mortality and premature death in developed countries [2].

In recent decades, Sweden's population's alcohol consumption has increased and become more gender equal and along with this, there has been a rise in alcohol use disorder (AUD). However, there is a three and a half time higher rate of alcohol-related mortality among men [3]. In 1996 Swedes consumed around 8 litres/person/year and in 2014, 9.9 litres/person/year [3]. This increase, together with an increasing age for the birth of the first child, increases the risk for alcohol use during pregnancy since alcohol drinking patterns may have been already firmly established in the parents-to-be [4]. The risk for AUD in the future increases when risk drinking occurs. Effects on children and other relatives are also discussed, as "harm to others" [1]. Risk drinking in Sweden is considered to be > 14 glasses/week for men (each glass containing 12 gram pure alcohol), and > 9 glasses for women/week.

AUDIT, AUDIT-C

The WHO has developed the Alcohol Use Disorders Identification Test (AUDIT), a method for measuring risk drinking [5]. AUDIT consists of ten questions about alcohol and is used to potentially detect AUD. This instrument is commonly used in many countries around the world and has been translated into many languages. The AUDIT scale sum is 0-40 points. The short version is AUDIT-C [6] with three questions about alcohol consumption which can indicate if risk drinking occurs (sum: 0-12 points). Other

methods are also used to collect additional information if risk drinking or AUD is discovered when screening with AUDIT [7].

Alcohol and pregnancy

Alcohol is a teratogen for the fetus during pregnancy. The Fetal Alcohol Syndrome (FAS) was described by Jones and Smith in the US in 1973 [8] and at the same time Olegård and colleagues diagnosed children in Sweden with FAS [9]. Fetal alcohol syndrome (FAS) is the most serious condition caused by alcohol during pregnancy; it may entail adverse effects on the fetus, both physical and psychological, occurring at different times throughout the gestation period/pregnancy [8].

Different researchers later described the diagnosis of Fetal Alcohol Spectrum Disorder (FASD). At the website for the national organization for FASD in Australia, it is written; “Alcohol can cause damage to the unborn child at any time during pregnancy and the level of harm is dependent on the amount and frequency of alcohol use which may be moderated by factors such as inter-generational alcohol use, parent age and health of the mother (nutrition, tobacco use) and environmental factors like stress (exposure to violence, poverty)”. In a recent review by Popova and colleagues, they argue that prevention efforts need to be put in place to reduce the occurrence of alcohol consumption during pregnancy. Furthermore, there is an urgent need to establish universal screening for prenatal alcohol exposure, using a standard screening protocol. The authors also reported that: “the most prevalent disease conditions were within the sections of congenital malformations, deformities, and chromosomal abnormalities, and mental and behavioral disorders”. The FAS report goes on to say; “The five comorbid conditions with the highest pooled prevalence (between 50% and 91%) included abnormal results of function studies of peripheral nervous system and special senses, conduct disorder, receptive language disorder, chronic serous otitis media, and expressive language disorder. The authors conclude: “The high prevalence of comorbid conditions in individuals with FASD highlights the importance of assessing prenatal alcohol exposure as a substantial clinical risk factor for comorbidity. The harmful effects of alcohol on a developing fetus represent many cases of preventable disability, and thus, alcohol use during pregnancy should be recognized as a public health problem globally.” [10].

Waterson and colleagues described considerable gaps in the research on men’s alcohol consumption before and during pregnancy, on the effect of alcohol on male sperm and how men’s alcohol habits may indirectly cause damage to the fetus [11]. Since this study was done, others have described effects that alcohol has had on the cells where sperm is produced and direct

effects on the actual sperm produced, which may possibly contribute to FAS or FASD [12-16]. A discussion about epigenetics is emerging since new knowledge about the DNA-code in the genes makes it possible to detect which genes regulate AUD. However, the father's role in the development of alcohol-related disorders among children is still unclear [17-19].

There is some evidence for heredity in increased risk for alcohol or substance use disorder if there is presence of such a disorder in the family. For example: if heredity for alcohol dependence exist in the family, there is > 40 % increased risk for developing alcohol dependence during lifetime if a person is drinking alcohol [20].

The Agency of Public Health in Sweden provides an information brochure about promoting an alcohol-free pregnancy but it does not address the male partner's alcohol use. Preconception and inter-conception knowledge about alcohol and pregnancy is important to enable changes in alcohol consumption and therefore avoid harmful effects on the fetus [21]. Swedish maternity care recommends all pregnant women to abstain from alcohol during pregnancy, as do many other countries around the world [22-25]. There are however conflicting research reports regarding the effects of light or moderate drinking during pregnancy [26-31]. More recent studies show effects of prenatal alcohol exposure later in life [21,32]. The evidence on whether there are safe levels of alcohol consumption during a pregnancy remains inconclusive. Niclasen [33] claims that future observational studies about pregnancy and alcohol should apply exploratory factor analysis and then control for extracted factors to allow for more factors to be controlled for without loss of statistical power.

Research focusing on the partner's alcohol use before and during pregnancy is scarce in relation to studies about pregnant women [34]. One recently published longitudinal study found that the quantity of alcohol consumption by the partner showed to be a predictive variable for maternal risk drinking during pregnancy [18]. Another study shows nine times higher risk for a child at first year in school to have FASD if there is an alcohol problem in the family [35].

Social support for alcohol free pregnancy and during parenthood

Some studies have investigated the association between social support and alcohol consumption during pregnancy among parents-to-be [36-40]. Social support during pregnancy has an influence on a woman's health, lifestyle, knowledge and pregnancy outcomes. Partner support is the most important

[41]. Abela [42] shows that the emotional support for reduced drinking facilitates pregnant women in abstaining from alcohol. We did not find any intervention study about alcohol during pregnancy that has included both of the parents-to-be.

Alm and colleagues [43], have shown that 95 % of Swedish couples experienced support in parenting from their partners. Likewise, 83 % of Norwegian and 89 % of Danish couples experienced such support. In a Swedish qualitative study, parents describe a broad spectrum of social, psychological and physical support needs. The authors conclude that “midwives facing the important challenge of offering appropriate support to parents-to-be may need additional professional development training that enables midwives to provide psychological and emotional support to both parents-to-be during pregnancy, so they, in turn, may better support each other in parenthood” [44].

Towards a theory for the dialogue about alcohol with parents-to-be from a life cycle perspective

Becoming a parent is a time of change and reorientation in life. For many, the pregnancy period is a natural continuation and a deepening of the relationship of the couple, providing the opportunity to reflect and mature, looking back at the cultural identity of both parents-to-be, and looking forward to joint parenthood [41]. It has been emphasized that pregnancy can cause stress, which some couples find difficult to handle. Parents-to-be who support one another emotionally and practically and receive psychosocial support from family and friends are better equipped for the maintenance of health. Interaction with others can improve patient health by improving the individual’s self-understanding [45].

An individual leads a better life if their existence is comprehensible, manageable and meaningful [46]. These acknowledged qualities result in what is referred to as a high sense of coherence (SOC), which is important for reducing stress. The impact of stressful events increases the odds of continued alcohol consumption during the time of mid-pregnancy [47]. Alcohol is therefore used as a coping strategy in different situations during pregnancy.

The complexity of the fatherhood transition process is examined in a literature review, which involves the concepts of self-image transformation, triadic relationship development, and social environment influence [48]. Three specific fatherhood stages were identified: prenatal, the labor and birth period and the postnatal period. The partner’s actual pregnancy was the most demanding period in terms of psychological reorganization of the self, and

the labor and birth period was experienced as the most intense emotional stage. The postnatal period was most influenced by environmental factors. The most challenging, both inter- and intra-personally was the postnatal period where men experienced coping with the new reality of being a father. The conclusion drawn by the authors/researchers is that: “Men’s transition to fatherhood is guided by the social context in which they live and work and by personal characteristics in interplay with the quality of the partner relationship. Men struggle to reconcile their personal and work-related needs with those of their new families” [48]. Vulnerable fathers may already during pregnancy need support for improved mental health [49,50].

The idea of changing one’s habits is a stepwise process, this is well known in relation to smoking cessation [51]. The same stepwise process is probably also useful in explaining and understanding the reduction of alcohol consumption as a preparation for parenthood.

The Integrated Model for Motivational and Behavioral Change (I-Change Model) [52] combines several socio-cognitive behavioral models and has been used in a study aimed to identify the correlates of partner support for pregnant women in abstaining from alcohol during pregnancy [39]. Evidence-based behavior change interventions to improve healthy habits need to be developed [53].

Vansteenkiste & Sheldon [54] have combined the use of motivational interviewing (MI) and self-determination theory (SDT) [55]. They concluded that SDT and MI at a meta-theoretical level appear to be very complementary accounts of self-motivated change and how these changes can be promoted. “By integrating MI and SDT we may move closer to Levin’s ideal of generating ‘good, practical theories’ – theories that can simultaneously help us to understand human nature, and, know what to do in order to maximize it” [54].

The need for complex theories is essential when the behavior change involves more than one person, as is the case when a father “should” change due to the partner’s pregnancy.

Increased knowledge about alcohol, pregnancy, and parenthood, as well as enhanced self-efficacy and self-determination may raise the consciousness of both parents-to-be and therefore affect their behaviors.

Rationale

Several studies have documented that high levels of alcohol consumption during pregnancy cause damage to the fetus. WHO recommends an alcohol-free pregnancy and has produced information and screening tools to be used during pregnancy. In many countries health workers inform pregnant women to abstain from alcohol, because there is no clear evidence of a risk-free level of alcohol consumption. Some researchers, however discuss that low to moderate drinking during pregnancy would not harm the fetus. Furthermore studies on expectant fathers' alcohol consumption (drinking) are scarce in relation to studies on pregnant women and alcohol habits.

In the literature, no intervention was found concerning a dialogue about alcohol with both parents-to-be from a life cycle perspective. In this licentiate thesis such a method is evaluated.

Aims

Overall aim

The overall aim of this thesis is to investigate alcohol use among pregnant women and their partners and to evaluate a method for midwives' to dialogue about alcohol from a life cycle perspective with both parents-to-be.

Specific aims

Study I

To investigate the use of alcohol during pregnancy among both parents-to-be and to develop and evaluate a method for the midwife's dialogue about alcohol from a life cycle perspective with parents-to-be during pregnancy.

Study II

To investigate alcohol consumption among partners who attend antenatal care (ANC) together with the pregnant women, if they have changed their alcohol consumption during their partner's pregnancy and if so, the reasons for this. Further aims were to investigate the partner's support from others for decreasing their drinking and their perceptions of the midwife's counseling about alcohol.

Material and method

Overview Study I and Study II

| | Study I | Study II |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aim | To investigate the use of alcohol during pregnancy among both parents-to-be and to develop and evaluate a method for the midwife's dialogue about alcohol from a life cycle perspective with parents-to-be during pregnancy. | To investigate alcohol consumption among partners who attend antenatal care (ANC) together with the pregnant women, if they have changed their alcohol consumption during their partner's pregnancy and if so, the reasons for this. Further aims were to investigate the partner's support from others for decreasing their drinking and their perception of the midwife's counseling about alcohol. |
| Design | Quasi experimental study with a comparison group | Cross sectional study |
| Data collection | Questionnaires pre- and post intervention | Questionnaire |
| Participants | 523 couples | 444 partners of pregnant women |
| Data-analysis | To examine the differences between the groups, we used Student's t-test for interval scaled data, Kruskal Wallis test for ordinal-scaled data, Chi Square and Fishers exact tests for nominal scaled data. Two binary logistic regression models were performed. | The Mann-Whitney test and the Kruskal Wallis test were used to investigate differences in AUDIT-C sum with respect to other variables. The responses to the open-ended question about motives for decreased drinking were analyzed by summative content analysis. |

Antenatal care (ANC) organization in Sweden, registration in national registers

In Sweden the basic program for ANC consists of six to seven visits with the midwife. More than 98 % of all pregnant women in Sweden attend antenatal care. At the time for Study I the first visit was for registration and scheduled in gestational week 12. Currently the first visit is scheduled in gestational week 6-7, and is a so called “health talk”. The “health talk” consists of a dialogue and information about lifestyle factors: food, folic acid, physical exercise, smoking, use of alcohol, medications and illegal drugs. The partner is always welcome to join the pregnant woman for the visit, and many partners do so for one or more visits. Since 2010, in most regions the woman is asked to fill out an AUDIT questionnaire.

The second ANC visit is normally in gestational week 12, when the individual registration takes place. In the Maternal Health Record (MHR), information is recorded about alcohol use three months before pregnancy (seldom/never, less than once a week, more than once a week), and the same information is provided at the time of registration, and again in gestational week 33. Information from MHR about alcohol, including the AUDIT score are not transferred to the Medical Birth Register (MBR) in contrast to information on smoking habits, which has been transferred since 1980^{ies}.

If a pregnant woman is still drinking alcohol at the time of the health talk and the AUDIT score is higher than 9 she will be referred to a special counseling team [4,27,56].

There is currently no question about and no recording of information about heredity of alcoholism /addiction or dependence in the MHR. The AUDIT-sum for the pregnant woman is noted in the MHR, but this is not the case for the partner’s AUDIT score if the partner has indeed filled out his own AUDIT. All alcohol information about the pregnant women is copied into a special quality assurance register but not to the MBR.

The partner’s alcohol consumption before and during pregnancy is not registered in the MHR, because the MHR only relates to the pregnant woman.

Study I

Design

A quasi-experimental study was performed within regular ANC activities.

Setting

The intervention group (IG) was recruited from three ANCs located in the suburbs of a municipality not far from Gothenburg having a population of diversity. The comparison group (CG) was recruited from two counties. One was in the south of Sweden, at ANC's in two suburbs quite like the IG. The other county was in the middle of Sweden and the ANC was located in a mid-sized town.

Participants

The participating parents-to-be were pregnant women and their partners coming for registration at six ANC's. The sample power was calculated assuming an intervention effect of 10 % with 80% power. Six hundred and eighty one couples were assessed for eligibility, 523 couples participated (76,8 %) with 265 couples in the IG and 307 couples in the CG. In the IG, 173 couples (65.3 %) returned both questionnaires and in the CG, 202 couples (65.8 %) returned both questionnaires. See Figure 1 for more data about recruitment.

The groups were relatively similar, with no significant differences. The mean age of the pregnant women was 30.6 years and that of the expectant fathers was 32.9 years.

Those who dropped out of the study only differed from those who remained in regards to age; and the drop-outs were slightly older (mean age 32.0) compared to those who remained in the study (mean age 31.2) $p = 0.02$. There were no differences between the drop-outs and those who remained in the study with respect to their education level, occupation, civil status, or if they had children or not.

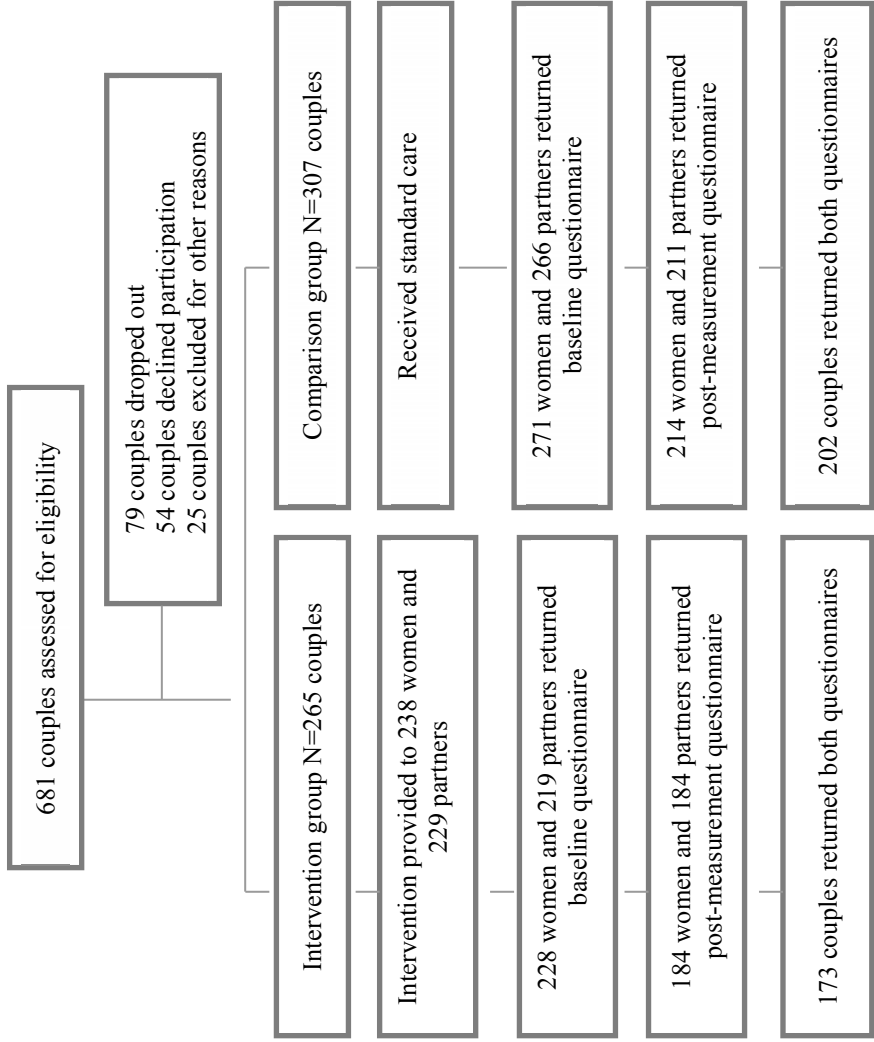


Figure 1. Flow chart of the participants

Procedure

The author contacted the maternal healthcare chief physicians in the chosen counties to approve the study of which they all did. All midwives working at ANCs were then approached with information about the study.

The IG received information about the study and a booklet about pregnancy and alcohol, which was mailed to their residence. They were requested to fill in a short questionnaire, which formed the basis for the dialogue, when they came to the ANC (Figure 2). In addition to the standard care, this group was exposed to the intervention; specifically, they were offered a dialogue with the midwife about alcohol from a life cycle perspective (Figure 3). A questionnaire was filled out after registration (baseline measurement). The same type of questionnaire was also filled out during week 33 of the pregnancy (post-measurement) (Figure 4).

The CG received information about the study in connection with the registration visit at the ANC – no information was sent home. The questionnaire was completed after the registration (baseline measurement) and another questionnaire in week 33 of the pregnancy (post-measurement) (Figure 4).

The intervention

The intervention originated from the data that both partners provided regarding; alcohol consumption in the year prior to pregnancy, any alcoholism in their family of origin or within the extended family, with whom they drank, alcohol consumption after the pregnancy became known, and if they had tried other drugs (Figure 2).






Basis for dialogue about alcohol and parenthood.

1. Has your drinking changed over the last year before pregnancy? (baseline measurement).
 Has your drinking changed during pregnancy? (post-measurement).
 More Less the same Teetotaler

2. Is there any alcoholism in your family or within your family?
 Yes No I do not know Who/whom:.....

3. Who do you drink with? (Several choices can be chosen)
 Workmates Partner Alone Friends Other family

Your drinking during the last year BEFORE pregnancy: (baseline measurement)
 Your drinking DURING pregnancy: (post-measurement)

| | | | | | |
|-------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| |  |  |  |  |  |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| One glass equals: | 45 cl beer | 33 cl strong beer | 15 cl wine | 8 cl strong wine | 4 cl spirit/ liquor |

4. How often do you have a drink containing alcohol?
 Never Monthly or less 2 to 4 times
a month 2 to 3 times
a week 4 or more times
a week

5. How many drinks containing alcohol do you have on a typical day when you are drinking?
 1 or 2 3 or 4 5 or 6 7 to 9 10 or more

6. How often have you had six or more drinks on one occasion?
 Never Less than monthly Monthly Weekly Daily or almost daily

7. Your alcohol consumption after pregnancy became known? (baseline measurement)
 Your alcohol consumption now (in pregnancy week 33)? (post-measurement)
 More As earlier Less No drinking at all

8. Have you tried/used other drugs?
 Yes No If yes, which drugs:.....

Figure 2. Basis for dialogue about alcohol with parents to be.

The complete intervention is described in Figure 3.

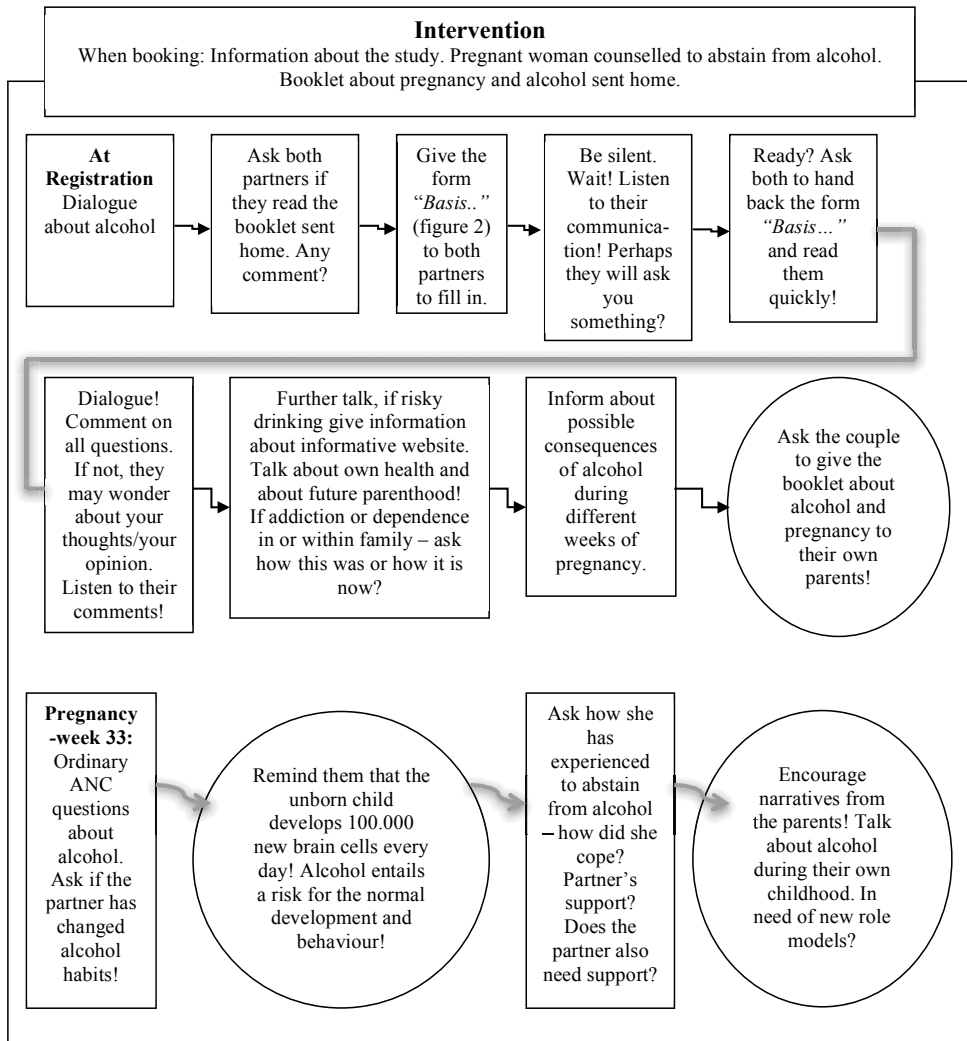


Figure 3. The intervention

Instrument

The researchers constructed the questionnaire based on the literature. The questionnaire was discussed with both researchers involved in alcohol and pregnancy research and with experienced midwives. The forms were tested in a pilot-study with 10 couples before the study officially started. One of the partners found the five parts in the questionnaire too extensive, but after reading the information letter, he had no objections. No changes in any parts of the questionnaire were made after the pilot-study (Figure 4).

Basis for dialogue about alcohol and parenthood (Figure 2) was used in the dialogue.

| Responders | Item |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Woman and partner (1)</i> | Three AUDIT-C questions about alcohol consumption [6] and one question about other drugs. One question about alcohol disorder in the family and three additional questions about alcohol consumption (Figure 2). |
| <i>Woman and partner (2)</i> | One open-ended question about how to manage a situation where alcohol would be consumed. Four questions about activities to refrain from alcohol (yes/no). One question about the difficulty in abstaining from alcohol (five-degree scale from very easy to very difficult). Ten questions about social support (five-degree scale from always to never). Six statements about support from partner with the response alternatives yes/no: Feels generally positive but does not affect my behavior / Gives me the feeling that we are preparing for parenthood and taking joint responsibility / Feels negative e.g., intrusive or annoying / No importance whatsoever because I would not drink anything / Facilitates for me to say no to alcohol. / I get no support for an alcohol-free pregnancy. |
| <i>Woman and partner (3)</i> | Sixteen questions about how alcohol was used prior to pregnancy and during pregnancy including reasons for, questions on concerns about one's own or a partner's alcohol consumption, and thoughts about partner's concern about drinking alcohol consumption (yes/no). Two questions allowed free-text comments. |
| <i>Woman (4)</i> | Four questions about whether drinking during pregnancy causes worries and if she had talked to someone about it (yes, no, don't know). |
| <i>Woman and partner (5)</i> | Three questions about reactions to partner's use of alcohol (totally agree, partly agree, do not agree). |

| | |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Woman and partner (6)</i> | One question on information about alcohol during pregnancy (yes/no). Post-measurement included three evaluation questions about new knowledge and influence on alcohol consumption (five degree scale from not at all to very much) and who provided the most important information (five degree scale, from most important to least important). |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Figure 4. The questionnaire

Analysis of the Drop-outs

We were only able to make analyses for those who dropped out during the study, not for participants who denied participation. No information is available about those individuals.

Data analysis

SPSS 20.0 for Windows was used for data analysis. To examine the differences between the two groups, we used Student's t-test for interval scaled data, Kruskal Wallis test for ordinal-scaled data, and Chi Square and Fishers exact tests for nominal scaled data. A difference was considered significant if $p < 0.05$. To examine the potential confounders for the group differences in the variable; *offers alcohol-free alternatives*, two binary logistic regression models were performed where we adjusted for age, education level, occupation, and previous children. The results are presented as Odds Ratios (OR) with 95% confidence intervals (CI).

Study 2

Design

This study was a cross-sectional study with the partners of pregnant women and is part of a larger study involving both pregnant women and their partners.

Setting

Thirty ANC clinics across Sweden were selected for the study based on distribution of pregnant women in 2008, and considered two dimensions, geographic location of the center and population size. The study was conducted from November 2009 to December 2010.

Participants and procedure

Partners were invited to participate in the study if they visited the ANC together with a pregnant woman who had reached the 18th week of pregnancy (after the routine ultrasound screening in pregnancy week 18). Each participating clinic collected data over a 4-week period. The partner was not invited if the pregnant woman declined to participate. The partners were asked to fill out the questionnaire in the waiting room (after the visit, where the midwife was not present). When the questionnaire was completed, it was sealed in an envelope together with the pregnant woman's questionnaire and put into a box. In total, 445 partners participated, but one questionnaire was excluded due to inconsistent responses. In total 444 questionnaires were analyzed.

Instrument

The partner questionnaire was in Swedish and consisted of 12 questions; socio demographics, alcohol consumption during last year measured with AUDIT-C, if they had changed alcohol use during the partners pregnancy and if so, what motives they presented for this change, answered in an open-ended question. Further, if they had received social support from other (partner, father, mother, friend, workmate) for changing alcohol consumption during pregnancy, if they had been asked to fill out any AUDIT at ANC, and if they had participated when their pregnant partner was asked to fill out AUDIT. Seven statements about the counseling on alcohol and pregnancy provided by the midwife, followed. The last question was about partner involvement: "Did you want to be more involved in the counseling about alcohol?"(yes/no). See Appendix.

Data analysis

SPSS 22.0 for Windows was used for data analysis. The Mann Whitney test and the Kruskal Wallis test were used to investigate differences in AUDIT-C sum with respect to other variables. A difference was considered significant if $p < 0.05$.

The responses to the open-ended question about motives for decreased drinking were analyzed by summative content analysis [57]. All statements were read and then two of the authors independently sorted the responses into categories. The categories were then discussed and closely examined by three of the authors and some minor adjustments in the labeling of the categories took place.

Ethical aspects

The Regional Ethical committees in Gothenburg (Dnr Gbg 308-02) and Lund (Dnr LU 468-02) approved Study I. Both pregnant women and partners were given oral and written information about the study, that the participation was voluntary and that they could end their participation at any time. Further, both pregnant woman and partner were informed that all information would be handled confidentially. No personal identification number was used in the study because of ethical reasons and to assure anonymity. To identify both coupled individuals, the name and birthday of the woman's partner were requested in the questionnaire. Oral consent was obtained from all participating women, and the partners who participated at registration. If the partner did not participate in the registration visit, the pregnant women took the questionnaire home to the partner, together with written information about the study and consent. The partner's consent was based upon the partner filling out and handing back the questionnaire.

The Regional Ethical committee in Linköping (Dnr M178-09) approved Study II. At the end of the consultation, the midwife gave an anonymous questionnaire to the woman and another anonymous questionnaire to the partner (if the pregnant woman chose to participate) together with written and verbal information about the purpose of the study. Each partner was informed that participation in the study was voluntary and would not affect the future care in any way. The participants provided their consent to participate by filling out and handing in the questionnaire.

Results

Study I

Alcohol consumption among the pregnant women was low. One third of pregnant women (30 %) decreased alcohol use the year before pregnancy. Most pregnant women (90%) stopped drinking alcohol after the pregnancy was known. Of the partners, 24 % decreased use of alcohol the year before pregnancy and 40 % decreased during pregnancy. Of the partners, six per cent abstained from alcohol during pregnancy. No difference in alcohol consumption was found between IG and CG.

More than one in four women and more than one in three men used alcohol to get drunk before pregnancy. Alcohol was used as a stress relief before pregnancy in about one in five women and in more than one in four men. In pregnancy week 33 there was one report from a pregnant woman who was binge drinking during pregnancy and of the partners, 27% in IG and 29% in CG continued binge drinking. In pregnancy week 33, 17% of the IG and 21% of the CG partners reported binge drinking as “normal consumption” during pregnancy. Two pregnant women and more than one in four partners also reported stress relief drinking during the pregnancy period. There were no differences between groups.

Most women (92%) stated that the partner’s support to give up alcohol was important. After the intervention, more IG women reported that the partner offered alcohol-free alternatives than the CG did, IG: 77 % and CG: 63 %, ($p=0.002$).

Four percent of pregnant women in the IG and 12 % of pregnant women in the CG had “ever” been worried about their own alcohol consumption. Less than 3 % of the partners had “ever” worried about the pregnant partner’s alcohol consumption. Of the partners 11 % in the IG and 12 % in the CG had “ever” been worried about their own alcohol consumption. Around 12 % of the pregnant women had “ever” worried about the partner’s alcohol consumption.

Around 90 % of the pregnant women experienced support for decreased drinking and an alcohol-free pregnancy, compared to 37 % of the partners.

At the end of the pregnancy 18 % of the partners reported a need to decrease alcohol consumption.

Most women in both groups (92%) stated that the partner's support to give up alcohol was important. About 80 % pregnant women and about 75 % fathers-to-be agreed to the statement "*a feeling that we are teaming up for parenthood and taking joint responsibility*".

Twenty per cent of the partners and 25 % of pregnant women reported alcoholism in their own family. Nine per cent reported a parent with alcoholism and 35 % of the couples reported alcoholism in at least one of their extended families. Partners with alcoholism within the family reported higher AUDIT-C score; (mean 7.72 vs. mean 6.68, $p<0.01$).

Among women, antenatal care became the most important source of information about alcohol, 68 % of pregnant women in IG and 52 % of pregnant women in CG, ($p=0.001$) reported this.

Study II

A majority of the partners used alcohol during the last year. Most partners, 95 %, used alcohol, 29 % were binge drinking on a normal drinking day, 74 % were binge drinking, but less than once a month, 19 % reported frequent binge drinking (at least once a month), and 7 % reported weekly binge drinking. We found no difference between first time parents (73 %) and those who already had children (27 %) with respect to binge drinking.

Of the partners 56.0 % ($n=240$) decreased drinking and 0.7 % partners increased drinking. Most of the partners who decreased drinking reported motives ($n=201$) for this change in an open-ended question. The analysis of these motives resulted in six categories; The pregnancy itself, support for and solidarity with "my" pregnant woman (49.3 %), alcohol should be consumed in fellowship (34.3 %), taking more responsibility, also for their own health (34.3 %), fewer opportunities to drink alcohol at parties (11.9 %), does not feel not right to be drinking now (11.4 %) and the coming child/parenthood (4.0 %). Some of the partners reported more than one reason.

A higher proportion of frequent binge drinkers (every month or more often) decreased their alcohol consumption compared to non-frequent binge drinkers ($p=0.025$). The partners with higher AUDIT-C scores reported more support for decreasing their consumption.

Partners who had filled out AUDIT together with the pregnant woman in early pregnancy reported to a higher extent that the counseling from the midwife had been engaging (n=156, 77.2 %) compared to those partners who had not filled out AUDIT (n=107, 61.8 %), $p= 0.008$.

Most partners appreciated the midwife's talk about alcohol and pregnancy, 82 % considered the midwife talked in a good way, 81 % that the midwife was professional /well skilled, 80 % reported remembering the dialogue, 70 % that the dialogue had been engaging, 44 % acquired new knowledge, and only one percent reported that the dialogue had been intrusive or that the dialogue about alcohol was too long.

Discussion

In this thesis, two perspectives of midwives' alcohol counseling at ANC in Sweden are presented. In paper I the method of midwives' dialogue about alcohol from a life cycle perspective with both parents-to-be is explored. In paper II the focus is on the partner's participation in alcohol information at ANC and the partners' own alcohol use during pregnancy. The findings show that most pregnant women abstain from alcohol and half of the partners change drinking patterns in the transition of becoming a parent.

The family perspective on alcohol and pregnancy

Both studies showed that pregnant women and partners change drinking in the transition to becoming a parent; the same pattern is reported in Norway [38]. Different studies have shown that some partners decrease drinking alcohol during pregnancy [11,38,58-60]. Many women decrease alcohol consumption or abstain from alcohol during pregnancy, but not all pregnant women [23,61,62].

We found no effects on alcohol consumption after the intervention in Study I. Today parents in Sweden are older when they have their first child and may have firmly established alcohol habits over many years. Furthermore, not all partners participated in the registration visit when the intervention took place (in IG 63 % of the partners, in CG 48 % of the partners).

Parents-to-be both in Study I and Study II may already have had good knowledge about alcohol, pregnancy and parenthood since many had decreased their alcohol consumption. However a few pregnant women continued to use alcohol. A lower proportion of pregnant women who expected their first child, compared to pregnant women who already had children, continued to drink alcohol. One possible explanation could be that pregnant women already parenting had experienced a healthy child in spite of their alcohol consumption in an earlier pregnancy. Some may have had less knowledge in general amongst their family and friends about the possible teratogen alcohol effects during pregnancy, than other couples. This implies that equal or even more attention should be paid to the parents who already have children. Supporting pregnant women not to drink alcohol during preg-

nancy is one way for the partner to protect the fetus from alcohol related consequences and another way could be to abstain from drinking together with the pregnant woman.

Partners' alcohol consumption

Six years had passed between data collection for Study I and for Study II. Partners in Study II reported lower AUDIT-C mean score (3.70) than was found in Study I. In Study I AUDIT-C mean score was 7.72 if the partner reported alcoholism in the family, and 6.68 if not ($p < 0.01$). This discrepancy may depend on a general time trend of decreased drinking during pregnancy or that the samples in the studies were different. A recent study in Sweden showed a mean AUDIT-C score of 3.16 in males [63]. In Study II partners with lower education reported higher AUDIT-C mean score (4.29) and this might be taken into account during the dialogue about alcohol. The partners' mean AUDIT-C score was lower than the cut-off score for hazardous drinking in men (some sources as Bush and Yip use 5.0 or more, and other sources as Lundin use 6.0 or more) [6,64,65].

One-fifth of the partners stated towards the end of the pregnancy, that they felt a need to reduce alcohol consumption. This may reflect that partners received less support than the pregnant women for changing their drinking habits during pregnancy. Only around 40 % of partners reported that they always got support for changed or decreased drinking from others. Of course not all partners need to change their drinking pattern, since they already may have a very low or modest alcohol consumption.

Furthermore, partners also reported to a lower degree that ANC gave them the most important information on alcohol and parenthood, in comparison with the pregnant women. Most pregnant women in Study I claimed that ANC gave them the most important information on alcohol and parenthood, as did also the pregnant women from the larger women's study related to Study II [66]. Two studies from the Netherlands also report support to both of the couple from ANC for an alcohol-free pregnancy [39,40]. The group of partners who reported support from others for changing alcohol consumption had a higher AUDIT-C score compared those who did not report any support from others. From a public health perspective, it is good that those who drink more also receive more support for decreasing alcohol consumption. The partner who filled out their own AUDIT together with the pregnant women reported to a higher extent that the counseling from the midwife had been engaging, which shows that the partner can be included and involved in midwives' counseling during pregnancy.

Support

After the intervention in Study I, more pregnant women in the IG stated that they were offered alcohol-free drinks compared with the CG. Thus, the dialogue with the midwife may have promoted an awareness that facilitated their partners to support the pregnant woman in an alcohol-free pregnancy. Most pregnant women in both Study I and Study II reported that they felt that the support from the partner for abstaining alcohol was important. After the intervention, more pregnant women in the IG stated that the ANC was the best source of information about alcohol, pregnancy, and parenthood, indicating that such a dialogue was both accepted and appreciated by the pregnant women. Van der Wulp [40] showed that if the midwife informed about the importance of an alcohol-free pregnancy, the partner then supported the pregnant woman to a higher degree.

Alcoholism, dependence or addiction in the family

Every third couple (35%) in Study I had some personal experience of AUD within their own family and about ten percent had at least one own parent with AUD. Partners with alcoholism within the family reported higher score AUDIT-C; (mean 7.72 vs. mean 6.68, $p < 0.01$). The issue of heredity for AUD is therefore relevant to discuss [13,20,35]. Alcohol consumption, also in a family perspective should be discussed during antenatal counseling to raise awareness about the relationship between risky drinking and AUD in the future. More than ten percent of women reported that they had been worried about the partner's alcohol consumption, but only three percent of the partners reported ever having been worried for the pregnant woman's drinking. One possible explanation may be that the women had low or moderate alcohol consumption or that men in general are less worried for women's drinking habits.

In Study I, 4-12% of the participants had been worried about their own alcohol consumption and one fifth of the partners reported in late pregnancy a need to cut down their own drinking before the child was born. Research shows that a genetic disposition for AUD can be brought forward to the next generation [20]. Harm from others' drinking was experienced by 28%-53% in six countries in northern Europe, more commonly among young people than among older people and more commonly among women than men [1].

In a report from 2015-2016 six global experts on alcohol state that "Alcohol's secondhand effects are extensive and affect most aspects of society. Alcohol is unique as a risk factor in the cost to society according to several estimates." [67].

Theoretical considerations

Some parents-to-be in Study I were using alcohol to reduce stress the year before pregnancy and most of those partners continued drinking during pregnancy. Another study has in a similar way showed that impact of stressful events increases the odds of continued alcohol consumption during mid-pregnancy [47]. Alcohol may be a coping strategy used in different situations during pregnancy. Antonovsky's ideas [46] show how one's existence needs to be comprehensible, manageable and meaningful. This results in a high sense of coherence (SOC) which is important for reducing stress. Some parents-to-be may need to consider other strategies for reducing stress before having their newborn child.

More than half of the partners (56 %) in Study II decreased drinking and most of them (83%) reported their motives for this. Some parents changed alcohol consumption the year before pregnancy, others decreased in early pregnancy and some continued drinking as before. This can be seen as an example of the stepwise process for behavior change as described by DiClemente & Prochaska [51]. Motivation is an important part of the process and motives as described by the partners, illustrate different aspects of this motivation.

Other important concepts in theories about behavior change are self-efficacy and self-determination. One third of the partners in Study II reported their own health, increased maturity and a new responsibility as motives for decreased alcohol consumption. We interpret such motives as signs of increased self-efficacy and self-determination.

There are few studies that explicitly link intervention strategies and theories of behavioral change in relation to alcohol counseling. We agree with others who claim that behavior change interventions to improve healthy habits need to be developed from a stronger scientific evidence base [53]. There is no theory for the dialogue about alcohol from a life cycle perspective and further studies are needed for developing theory.

The dialogue about alcohol is complex

The midwife's dialogue about alcohol from a life cycle perspective with parents-to-be is complex and we were only able to demonstrate a few effects of the intervention. Early pregnancy is an excellent time for intervention and gives a natural opportunity to reach also partners and to provide health promotion regarding alcohol from a lifecycle perspective. The dialogue in early pregnancy on alcohol may, from a life cycle perspective, comprise three or four generations, that of grandparents, one's own parents, the pregnant

woman and partner, the fetus or unborn child and their siblings. The parents-to-be reported getting support from their partner and others to reduce alcohol before parenthood, and a majority of the participants felt that they were “teaming up for parenthood and taking joint responsibility”. Parents-to-be see themselves as a team and want the health care provider to take the whole family into account [68]. Not all partners participated in the registration visits at the ANC, even though this has become more common over the last few decades in Sweden. It is possible for ANC to invite all partners more actively to participate in the visit when the midwife counsels on alcohol.

Health promotion and midwives’ perspective on alcohol and pregnancy

Study I showed that the parents appreciated the intervention presented in this thesis. Partners in study II were more satisfied with the counseling when they also had filled out their own AUDIT. Written information about pregnancy and alcohol is produced worldwide. The Agency of Public Health in Sweden provides information about an alcohol-free pregnancy. The brochure does not address the partner’s alcohol use, and there is no information about possible effects on male drinking during the 60 days before conception when sperms mature. Information about the effect of alcohol on sperm may become relevant advice in the future when knowledge has been more consolidated.

Midwives could initiate a dialogue about alcohol with the couple using the method in this thesis and the dialogue can be followed up later. Previous studies show that conversations about alcohol, intimate domestic violence [69] and other psychosocial difficulties [70,71] should be undertaken before the child is born. Future studies should follow-up on situations in the family to investigate if changed pattern of alcohol use remain stable after pregnancy. Reflections on parenthood and alcohol use could be continued within child health services, in preschool, in elementary school, in parent education.

A recent review on co-morbidities of FASD and FAS highlights the emergency of implementing universal screening for prenatal alcohol use. The authors of the review, further claim that the costs are underestimated given that FASD is largely under-diagnosed worldwide [10]. Some authors/researchers argue that the effectiveness of public health interventions with the aim to increase awareness about and reduce alcohol consumption among pregnant women cannot be assessed because of the paucity of studies and therefore highlight the need of public health interventions [72].

There is thus a need for increased knowledge about methodology, optimal structuring of counseling about alcohol within the ANC organization and more studies about benefit and cost effectiveness of alcohol counseling for parents-to-be during pregnancy.

Methodological considerations

Study I had a quasi-experimental design since we did not consider it feasible to conduct a Randomized Controlled Trial. We recruited a comparison group (CG) and no significant differences were found between the groups. Strengths of the study are the fairly large sample size and that it was a population-based study with consecutive recruitment. A weakness was the drop-out of around 35% of those initially assigned to one of the groups. We have no information about those who did not accept participation in the first place, but the drop-out analysis showed, that drop-outs did not differ from those who remained in the study with respect to previous children, education level, occupation or civil status. Those who dropped out were slightly older compared to those who remained in the study. We have no reason to believe that this affected the results in any significant way.

We did not find any research tools for investigating use of alcohol and attitudes towards alcohol during pregnancy among both parents-to-be when we designed Study I [24,73]. Moreover, we did not find any published article with interventions based on a dialogue with both parents-to-be during pregnancy, or even a tool that measured social and psychosocial support for an alcohol-free pregnancy. More studies are therefore needed to confirm the usefulness and the validity of the questionnaire (Study I).

The CG pregnant women (and partners) also responded to the questions that formed the basis for the intervention included in the base line questionnaire (Figure 1), and this may have been enough to create consciousness and thereby affect the outcome. The CG-couples may therefore also have had a dialogue about alcohol, but only with each other without the midwife's counseling.

Further, only Swedish-speaking parents-to-be were included in Study I and Study II; thus, generalized conclusions have to be restricted to this population.

The strength of Study II is the widespread geographic distribution of the participants. Earlier research has found that drinking among pregnant women in big cities is different compared with urban areas and country areas. A

weakness is that only the partners who participated in an actual visit were invited to the study.

A shortcoming is that the questionnaire in Study II did not contain any question about AUD in the family, which makes it impossible to compare results related to AUD between Study I and Study II.

Conclusions

This thesis indicates that the approach with AUDIT-C or AUDIT screening for both parents-to be is relevant and accepted. It further indicates that a dialogue about alcohol, pregnancy and parenthood from a life cycle perspective with both parents-to-be is feasible.

Most partners appreciated the midwife's counseling about alcohol and pregnancy and were more satisfied if they had filled out their own AUDIT in early pregnancy. Involving the partner in counseling about alcohol-restriction during pregnancy could be a useful health promotion strategy.

Most pregnant women and many partners decreased alcohol consumption in transition to parenthood, which is a crucial time for changing alcohol-drinking patterns. Partners reported various motives for decreasing alcohol consumption.

Pregnant women received more support for decreasing alcohol during pregnancy than partners did and after the intervention the pregnant women in IG were offered alcohol-free alternatives to a higher extent. Antenatal care became the most important source of information about alcohol in the IG compared to CG.

It is possible to recognize partners with high alcohol consumption, and to implement interventions for decreased alcohol use during pregnancy.

It is possible to reach most parents-to-be and give them the opportunity to talk about experience of AUD within the family.

Further research is needed about what additional skills midwives may need in order to implement a dialogue from a life cycle perspective with both parents to be.

As this method was well accepted it could also be used later in other settings, for example within child health care and in preschool. The method needs to be evaluated in other settings.

In order to facilitate future research the information about alcohol use, currently available in the MHR, should be transferred to the MBR.

References

1. Moan, I.S., Storvoll, E.E., Sundin, E., Lund, I.O., Bloomfield, K., Hope, A., . . . Kristjansson, S. (2015). Experienced Harm from Other People's Drinking: A Comparison of Northern European Countries. *Subst Abuse*, 9(Suppl 2), 45-57. doi:10.4137/SART.S23504
2. Murray, C. J., Vos, T., Lozano, R., Naghavi, M., Flaxman, A.D., Michaud, C., . . . Memish, Z.A. (2012). Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*, 380(9859), 2197-2223. doi:10.1016/S0140-6736(12)61689-4
3. CAN (2014) Drug Development in Sweden 2014. *The Swedish Council for Information on Alcohol and Other Drugs*. Report 144, (in Swedish). Stockholm <http://can.se/contentassets/3f30e3b70ebb461c928fdccd5a0c3606/drogutvecklingen-i-sverige-2014.pdf> (date February 7, 2016)
4. Holmqvist, M., & Nilsen, P. (2010). Approaches to assessment of alcohol intake during pregnancy in Swedish maternity care--a national-based investigation into midwives' alcohol-related education, knowledge and practice. *Midwifery*, 26(4), 430-434. doi:10.1016/j.midw.2008.10.009
5. Saunders, J.B., Aasland, O.C., Babor, T.F., De la Fuente, J.R., Grant, M. (1993). Development of the alcohol use disorders identification test. (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction* 88(6), 791-804.
6. Bush, K., Kivlahan, D.R., McDonell, M.B., Fihn, S.D., & Bradley, K.A. (1998). The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test. *Arch Intern Med*, 158(16), 1789-1795.
7. Goransson, M., Magnusson, A., & Heilig, M. (2006). Identifying hazardous alcohol consumption during pregnancy: implementing a research-based model in real life. *Acta Obstet Gynecol Scand*, 85(6), 657-662. doi:10.1080/00016340600589677
8. Jones, K.L., & Smith, D.W. (1973). Recognition of the Fetal Alcohol Syndrome in Early Infancy. *The Lancet*, 302, 999- 1001.
9. Olegard R., Sabel K.G., Aronsson M., Sandin B., Johansson P.R., Carlsson C., Kyllerman M., Iversen K., Hrbek A. (1979) Effects on the child of alcohol abuse during pregnancy. Retrospective and prospective studies. *Acta Paediatrica Scandinavica Supplement* 275, 112-121.
10. Popova, S., Lange, S., Shield, K., Mihic, A., Chudley, A.E., Mukherjee, R.A.S., Bekmuradov, D., Rehm J. (2016). Comorbidity of fetal alcohol spectrum disorder: a systematic review and meta-analysis. *THE LANCET*. doi:10.1016/S0140-6736(15)01345-8

11. Waterson, E.J., Evans, C., & Murray-Lyon, I.M. (1990). Is pregnancy a time of changing drinking and smoking patterns for fathers as well as mothers? An initial investigation. *Br J Addict*, *85*(3), 389-396.
12. Bielawski, D.M., Zaher, F.M., Svinarich, D.M., & Abel, E.L. (2002). Paternal alcohol exposure affects sperm cytosine methyltransferase messenger RNA levels. *Alcohol Clin Exp Res*, *26*(3), 347-351.
13. Knopik, V.S., Jacob, T., Haber, J.R., Swenson, L.P., & Howell, D.N. (2009). Paternal alcoholism and offspring ADHD problems: a children of twins design. *Twin Res Hum Genet*, *12*(1), 53-62. doi:10.1375/twin.12.1.53
14. La Vignera, S., Condorelli, R.A., Balercia, G., Vicari, E., & Calogero, A.E. (2013). Does alcohol have any effect on male reproductive function? A review of literature. *Asian J Androl*, *15*(2), 221-225. doi:10.1038/aja.2012.118
15. Lee, B.Y., Park, S.Y., Ryu, H.M., Shin, C.Y., Ko, K.N., Han, J.Y., . . . Cho, Y.H. (2015). Changes in the methylation status of DAT, SERT, and MeCP2 gene promoters in the blood cell in families exposed to alcohol during the periconceptional period. *Alcohol Clin Exp Res*, *39*(2), 239-250. doi:10.1111/acer.12635
16. Liang, F., Diao, L., Liu, J., Jiang, N., Zhang, J., Wang, H., . . . Ma, D. (2014). Paternal ethanol exposure and behavioral abnormalities in offspring: associated alterations in imprinted gene methylation. *Neuropharmacology*, *81*, 126-133. doi:10.1016/j.neuropharm.2014.01.025
17. Haycock, P.C. (2009). Fetal alcohol spectrum disorders: the epigenetic perspective. *Biol Reprod*, *81*(4), 607-617. doi:10.1095/biolreprod.108.074690
18. May, P.A., Baete, A., Russo, J., Elliott, A.J., Blankenship, J., Kalberg, W.O., . . . Hoyme, H.E. (2014). Prevalence and characteristics of fetal alcohol spectrum disorders. *Pediatrics*, *134*(5), 855-866. doi:10.1542/peds.2013-3319
19. Nilsen, A.B., Waldenstrom, U., Rasmussen, S., Hjelmstedt, A., & Schytt, E. (2013). Characteristics of first-time fathers of advanced age: a Norwegian population-based study. *BMC Pregnancy Childbirth*, *13*, 29. doi:10.1186/1471-2393-13-29
20. Sullivan, P.F., Daly, M.J., & O'Donovan, M. (2012). Genetic architectures of psychiatric disorders: the emerging picture and its implications. *Nat Rev Genet*, *13*(8), 537-551. doi:10.1038/nrg3240
21. Day, N.L., Helsel, A., Sonon, K., & Goldschmidt, L. (2013). The association between prenatal alcohol exposure and behavior at 22 years of age. *Alcohol Clin Exp Res*, *37*(7), 1171-1178. doi:10.1111/acer.12073
22. O'Keefe, L.M., Kearney, P.M., McCarthy, F.P., Khashan, A.S., Greene, R.A., North, R.A., . . . Kenny, L.C. (2015). Prevalence and predictors of alcohol use during pregnancy: findings from international multicentre cohort studies. *BMJ Open*, *5*(7), e006323. doi:10.1136/bmjopen-2014-006323
23. Osterman, R.L., Carle, A.C., Ammerman, R.T., & Gates, D. (2014). Single-session motivational intervention to decrease alcohol use during pregnancy. *J Subst Abuse Treat*, *47*(1), 10-19. doi:10.1016/j.jsat.2014.01.009
24. Skagerstrom, J., Chang, G., & Nilsen, P. (2011). Predictors of drinking during pregnancy: a systematic review. *J Womens Health (Larchmt)*, *20*(6), 901-913. doi:10.1089/jwh.2010.2216
25. Stene-Larsen, K., Torgersen, L., Strandberg-Larsen, K., Normann, P.T., & Vollrath, M.E. (2013). Impact of maternal negative affectivity on light alcohol use and binge drinking during pregnancy. *Acta Obstet Gynecol Scand*, *92*(12), 1388-1394. doi:10.1111/aogs.12259

26. Black, D., Cobben, J., Didden, R., Lindhout, D., Pereira, R., & van Wieringen, H. (2007). Low Levels of Prenatal Alcohol Exposure Can Cause Fetal Damage. *British Journal of Obstetrics and Gynaecology*, *114*, 778-779. doi:10.1111/j.1471-0528.2007.01352.x
27. Göransson, M. (2004). *Alcohol consumption during pregnancy : how do we separate myth from reality?* (MD. Thesis), Stockholm: University Karolinska Institutet. Retrieved from <http://diss.kib.ki.se/2004/91-7140-136-9>
28. Henderson, J., Gray, R., & Brocklehurst, P. (2007). Systematic review of effects of low-moderate prenatal alcohol exposure on pregnancy outcome. *BJOG*, *114*(3), 243-252. doi:10.1111/j.1471-0528.2006.01163.x
29. Patra, J., Bakker, R., Irving, H., Jaddoe, V.W., Malini, S., & Rehm, J. (2011). Dose-response relationship between alcohol consumption before and during pregnancy and the risks of low birthweight, preterm birth and small for gestational age (SGA)-a systematic review and meta-analyses. *BJOG*, *118*(12), 1411-1421. doi:10.1111/j.1471-0528.2011.03050.x
30. Sayal, K. (2007a). Alcohol Consumption in Pregnancy as a Risk Factor for Later Mental Health Problems. *Evidence Based Mental Health*, *10*, 98-100. doi:10.1136/ebmh.10.4.98-a
31. Sayal, K., Heron, J., Golding, J., & Emond, A. (2007b). Prenatal alcohol exposure and gender differences in childhood mental health problems: a longitudinal population-based study. *Pediatrics*, *119*(2), e426-434. doi:10.1542/peds.2006-1840
32. Coles, C.D., Goldstein, F.C., Lynch, M.E., Chen, X., Kable, J.A., Johnson, K.C., & Hu, X. (2011). Memory and Brain Volume in Adults Prenatally Exposed to Alcohol. *Brain and Cognition*, *75*, 67-77. doi:10.1016/j.bandc.2010.08.013
33. Niclasen, J. (2014). Drinking or not drinking in pregnancy: the multiplicity of confounding influences. *Alcohol Alcohol*, *49*(3), 349-355. doi:10.1093/alcalc/agt141
34. Czeizel, A.E., Czeizel, B., & Vereczkey, A. (2013). The participation of prospective fathers in preconception care. *Clin Med Insights Reprod Health*, *7*, 1-9. doi:10.4137/CMRH.S10930
35. Ceccanti, M., Fiorentino, D., Coriale, G., Kalberg, W.O., Buckley, D., Hoyme, H.E., May, P.A. (2014). Maternal risk factors for fetal alcohol spectrum disorders in a province in Italy. *Drug Alcohol Depend*, *145*, 201-208. doi: 10.1016/j.drugalcdep.2014.10.017
36. Chang, G., McNamara, T.K., Orav, E.J., Koby, D., Lavigne, A., Ludman, B., . . . Wilkins-Haug, L. (2005). Brief intervention for prenatal alcohol use: a randomized trial. *Obstet Gynecol*, *105*(5 Pt 1), 991-998. doi: 10.1097/01.AOG.0000157109.05453.84
37. Harrison, P.A., Godecker, A., & Sidebottom, A.C. (2011). Psychosocial Risk Screening during Pregnancy: Additional Risks Identified during a Second Interview. *Journal of Health Care for the Poor and Underserved*, *22*, 1344-1357. doi:10.1353/hpu.2011.0122
38. Mellingen, S., Torsheim, T., & Thuen, F. (2013). Changes in Alcohol Use and Relationship Satisfaction in Norwegian Couples during Pregnancy. *Substance Abuse Treatment Prevention and Policy*, *8*, 5. doi:10.1186/1747-597X-8-5
39. van der Wulp, N.Y., Hoving, C., de Vries, H. (2014). Partner's Influences and Other Correlates of Prenatal Alcohol Use. *Matern Child Health J*, *19*:908-916. doi:10.1007/s10995-014-1592-y

40. van der Wulp, N.Y., Hoving, C., & de Vries, H. (2015). Correlates of partner support to abstain from prenatal alcohol use: a cross-sectional survey among Dutch partners of pregnant women. *Health Soc Care Community*. doi:10.1111/hsc.12235
41. Dunkel-Schetter C., Sagrestano L.M., Feldman P., Killingsworth C. (1996) Social support and pregnancy. A comprehensive review focusing on ethnicity and culture. *Handbook of social support and the family* (Pierce G.R., Sarason B.R., Sarason I.G.), Plenum press, New York, pp. 375-412.
42. Abela, M. B. (2000). *Factors associated with alcohol consumption: from a developmental perspective*. (Doctoral Dissertation). (61(3-B))
43. Alm, B., Norvenius, S.G., Wennergren, G., Lagercrantz, H., Helweg-Larsen, K., & Irgens, L.M. (2000). Living conditions in early infancy in Denmark, Norway and Sweden 1992-95: results from the Nordic Epidemiological SIDS study. *Acta Paediatr*, 89(2), 208-214.
44. Widarsson, M., Kerstis, B., Sundquist, K., Engstrom, G., & Sarkadi, A. (2012). Support needs of expectant mothers and fathers: a qualitative study. *J Perinat Educ*, 21(1), 36-44. doi:10.1891/1058-1243.21.1.36
45. Ogden, J. (2000) *Health Psychology* (pp. 231-254). Buckingham: Open University Press.
46. Antonovsky A. (1985) *Health, Stress and Coping*. Jossey-Bass Publishers, San Francisco, London 1985.
47. Beijers, C., Burger, H., Verbeek, T., Bockting, C.L., & Ormel, J. (2014). Continued smoking and continued alcohol consumption during early pregnancy distinctively associated with personality. *Addict Behav*, 39(5), 980-986. doi: 10.1016/j.addbeh.2014.01.022
48. Genesoni, L., & Tallandini, M.A. (2009). Men's psychological transition to fatherhood: an analysis of the literature, 1989-2008. *Birth*, 36(4), 305-318. doi: 10.1111/j.1523-536X.2009.00358.x
49. Boyce, P., Condon, J., Barton, J., & Corkindale, C. (2007). First-Time Fathers' Study: psychological distress in expectant fathers during pregnancy. *Aust N Z J Psychiatry*, 41(9), 718-725. doi:10.1080/00048670701517959
50. Leach, L.S., Olesen, S.C., Butterworth, P., & Poyser, C. (2014). New fatherhood and psychological distress: a longitudinal study of Australian men. *Am J Epidemiol*, 180(6), 582-589. doi:10.1093/aje/kwu177
51. DiClemente, C.C., & Prochaska, J.O. (1982). Self-change and therapy change of smoking behavior: a comparison of processes of change in cessation and maintenance. *Addict Behav*, 7(2), 133-142.
52. de Vries, H., Mudde, A., Leijts, I., Charlton, A., Vartiainen, E., Buijs, G., . . . Kremers, S. (2003). The European Smoking Prevention Framework Approach (EFSA): an example of integral prevention. *Health Educ Res*, 18(5), 611-626.
53. Bully, P., Sanchez, A., Zabaleta-del-Olmo, E., Pombo, H., & Grandes, G. (2015). Evidence from interventions based on theoretical models for lifestyle modification (physical activity, diet, alcohol and tobacco use) in primary care settings: A systematic review. *Prev Med*, 76 Suppl, S76-93. doi:10.1016/j.ypmed.2014.12.020
54. Vansteenkiste, M., & Sheldon, K.M. (2006). There's nothing more practical than a good theory: integrating motivational interviewing and self-determination theory. *Br J Clin Psychol*, 45(Pt 1), 63-82. doi:10.1348/014466505X34192

55. Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am Psychol*, 55(1), 68-78.
56. Skagerström, J., Johansson, A.L., Holmqvist, M., Envall, E.K., & Nilsen, P. (2012). Towards Improved Alcohol Prevention in Swedish Antenatal Care? *Midwifery*, 28, 314-320. doi:10.1016/j.midw.2011.04.008
57. Hsieh, H.F., & Shannon, S.E. (2005). Three approaches to qualitative content analysis. *Qual Health Res*, 15(9), 1277-1288. doi:10.1177/1049732305276687
58. Hyssälä, L., Rautava, P., Sillanpää, M. (1992). Health Behaviour of Fathers of Young Families Expecting their First Baby. *Scandinavian Journal of Social Medicine*, 20(3), 165-172.
59. Chang, G., McNamara, T., Orav, E.J., & Wilkins-Haug, L. (2006). Identifying risk drinking in expectant fathers. *Birth*, 33(2), 110-116. doi:10.1111/j.0730-7659.2006.00093.x
60. Everett, K.D., Bullock, L., Longo, D.R., Gage, J., & Madsen, R. (2007). Men's tobacco and alcohol use during and after pregnancy. *Am J Mens Health*, 1(4), 317-325. doi:10.1177/1557988307299477
61. Comasco, E., Hallberg, G., Helander, A., Orelund, L., & Sundelin-Wahlsten, V. (2012). Alcohol consumption among pregnant women in a Swedish sample and its effects on the newborn outcomes. *Alcohol Clin Exp Res*, 36(10), 1779-1786. doi:10.1111/j.1530-0277.2012.01783.x
62. Schluter, P.J., Tautolo, El-S., Taylor, S., & Paterson, J. (2013). Alcohol consumption by parents of Pacific families residing in New Zealand: findings from the Pacific Islands Families Study. *Alcohol*, 47(3), 241-248. doi:10.1016/j.alcohol.2012.12.009
63. Åhlin, J., Hallgren, M., Ojehagen, A., Kallmen, H., & Forsell, Y. (2015). Adults with mild to moderate depression exhibit more alcohol related problems compared to the general adult population: a cross sectional study. *BMC Public Health*, 15, 542. doi:10.1186/s12889-015-1837-8
64. Lundin, A., Hallgren, M., Balliu, N., & Forsell, Y. (2015). The use of alcohol use disorders identification test (AUDIT) in detecting alcohol use disorder and risk drinking in the general population: validation of AUDIT using schedules for clinical assessment in neuropsychiatry. *Alcohol Clin Exp Res*, 39(1), 158-165. doi:10.1111/acer.12593
65. Yip, B.H., Chung, R.Y., Chung, V.C., Kim, J., Chan, I.W., Wong, M.C., . . . Griffiths, S.M. (2015). Is Alcohol Use Disorder Identification Test (AUDIT) or its shorter versions more useful to identify risky drinkers in a Chinese population? A diagnostic study. *PLoS One*, 10(3), e0117721. doi:10.1371/journal.pone.0117721
66. Skagerström, J., Alehagen, S., Häggström-Nordin, E., Årestedt, K., & Nilsen, P. (2013). Prevalence of alcohol use before and during pregnancy and predictors of drinking during pregnancy: a cross sectional study in Sweden. *BMC Public Health*, 13, 780. doi:10.1186/1471-2458-13-780
67. Alcohol and the society. Theme 2015/2016: second-hand effects of alcohol consumption. http://iogt.se/wp-content/uploads/Alcohol_and_society2015_en.pdf (date February 7, 2016)

68. Widarsson, M., Engstrom, G., Tyden, T., Lundberg, P., & Hammar, L.M. (2015). 'Paddling upstream': Fathers' involvement during pregnancy as described by expectant fathers and mothers. *J Clin Nurs*. doi:10.1111/jocn.12784
69. Edin, K.E., Högberg, U. (2002). Violence against pregnant women will remain hidden as long as no direct questions are asked. *Midwifery*, 18 (4), 268-278.
70. Dejin-Karlsson, E. (1999). *Psychosocial resources, life-style factors and fetal growth. With special reference to small-for-gestational age (SGA) infants.*, Lund University, Sweden.
71. Flynn, H.A., Walton, M.A., Chermack, S.T., Cunningham, R.M., & Marcus, S.M. (2007). Brief detection and co-occurrence of violence, depression and alcohol risk in prenatal care settings. *Arch Womens Ment Health*, 10(4), 155-161. doi:10.1007/s00737-007-0188-6
72. Crawford-Williams, F., Fielder, A., Mikocka-Walus, A., & Esterman, A. (2015). A critical review of public health interventions aimed at reducing alcohol consumption and/or increasing knowledge among pregnant women. *Drug Alcohol Rev*, 34(2), 154-161. doi: 10.1111/dar.12152
73. Burns, E., Gray, R., & Smith, L.A. (2010). Brief screening questionnaires to identify problem drinking during pregnancy: a systematic review. *Addiction*, 105(4), 601-614. doi:10.1111/j.1360-0443.2009.02842.x

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Appendix

Questionnaire for the partner, in Swedish. Study II

ENKÄT TILL PARTNER

Denna enkät delas ut till alla partners till gravida som besöker mödrahälsovården på utvalda mottagningar under en viss tid. Du svarar helt anonymt. Inga svar redovisas så att enskilda personer kan identifieras. Vi är tacksamma om du tar dig tid och besvarar frågorna så noggrant och ärligt som möjligt.

1. Hur gammal är du?

- 19 år eller yngre
 20-24 år
 25-29 år

- 30-34 år
 35-39 år
 40 år eller äldre

2. Vilken är din högsta utbildning? Om du studerar för närvarande kan du kryssa i den utbildning du går nu.

- Grundskola
 2-årigt gymnasium eller yrkesskola
 3-4-årigt gymnasium
 KY eller folkhögskola

- Universitet/högskola, kortare än 3 år
 Universitet/högskola, 3 år eller längre tid
 Annan utbildning: _____

3. Vad har du för sysselsättning?

- Jobbar
 Studerar, praktiserar
 Föräldra- eller tjänstledig

- Arbetslös
 Sjukskriven
 Annat: _____

4. Har du barn sedan tidigare? Ja Nej

Frågorna nedan handlar om hur många standardglas man dricker – frågorna hänvisar till bilden nedan.

1 standardglas motsvarar något av följande:



2 st 33 cl lättöl



50 cl folköl



33 cl starköl/
starkcider/alkoläsk



1 litet glas rött /
vitt vin (15 cl)



8 cl starkvin



4 cl sprit

5. Hur ofta har du druckit alkohol under det senaste året?

- Aldrig
 1 gång i månaden eller mer sällan
 2-4 gånger i månaden

- 2-3 gånger i veckan
 4 gånger i veckan eller oftare

6. Hur många standardglas har du druckit en typisk dag då du druckit alkohol det senaste året?

- 1 standardglas
 2 standardglas
 3-4 standardglas

- 5-6 standardglas
 7-9 standardglas
 10 eller fler standardglas

7. Hur ofta har du druckit du 6 standardglas eller mer vid ett och samma tillfälle det senaste året?

- Aldrig
 Mer sällan än 1 gång i månaden
 Varje månad

- 2-3 gånger i månaden
 Varje vecka
 Dagligen eller nästan dagligen

8. Upplever du att du får stöd av någon (t.ex. din partner, far, mor, vänner, arbetskamrater) till minskat drickande, nu under din partners graviditet? Ja Nej

9. Har du fyllt i formulär avseende alkoholkonsumtion hos barnmorskan? Ja Nej

10a. Har du förändrat din alkoholkonsumtion i samband med att din partner blev gravid?

- Ja, jag dricker mindre nu
 Ja, jag dricker mer nu
 Nej, jag dricker som innan

10b. Om ja, varför har du förändrat din alkoholkonsumtion? Skriv i rutan!

Alkoholkonsumtion under graviditet medför ökad risk för missfall, tillväxthämning, beteende- och utvecklingsstörningar som överaktivitet, uppmärksamhets- och koncentrationsstörningar. Ingen nivå av alkoholkonsumtion under graviditet har visat sig vara säker och även relativt små mängder alkohol kan skada fostret och ge bestående skador. I många länder, inklusive Sverige, rekommenderas därför alla gravida att avstå helt från alkohol.

Nästan alla gravida kommer till mödrahjälsvården och får rekommendationer om att avstå alkohol under graviditeten. Enkäten som din partner svarar på handlar bland annat om hur hon upplevt mödrahjälsvårdens arbete med alkoholfrågan. Om du varit med på ett eller flera samtal om alkohol får du gärna besvara de avslutande frågorna nedan!

Källa FHI - riskbruksprojektet

11. Vad är din uppfattning om samtal om alkohol ni har haft med barnmorskor under nuvarande graviditet?

| | Instämmer helt | Instämmer till stor del | Instämmer till viss del | Instämmer inte | Ingen uppfattning |
|----------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Jag kommer ihåg innehållet väl | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Jag har fått ny kunskap | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Barnmorskan samtalade på ett bra sätt | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Samtalet/samtalen har varit engagerande | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Samtalet/samtalen har varit påträngande | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Barnmorskan var professionell/kunnig | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Samtal om alkohol tog för lång tid i anspråk | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

12. Hade du velat vara mer delaktig i alkoholsamtal?

Nej

Ja, genom att: _____

Lägg din enkät i samma kuvert som din partners och stoppa ner i lådan!

STORT TACK FÖR DIN MEDVERKAN!

