

# Lack of consensus between general practitioners and official guidelines on alcohol abstinence during pregnancy

Ulrik Schiøler Kesmodel<sup>1,2</sup>, Pia Schiøler Kesmodel<sup>1,3</sup> & Lisa Lærke Iversen<sup>3</sup>

## ABSTRACT

**INTRODUCTION:** Many pregnant women in Denmark have been advised that some alcohol intake is acceptable. In the 1999-2007-period, the Danish National Board of Health advised pregnant women that some alcohol intake was acceptable. From 2007, alcohol abstinence has been recommended. We aimed to describe the attitudes towards and knowledge about alcohol in pregnancy among general practitioners (GPs) in Denmark in 2000 and in 2009.

**MATERIAL AND METHODS:** In 2000, we invited a representative sample of GPs in the catchment area of the Antenatal Care Centre in Aarhus to participate in the study. Participants were interviewed about their attitudes, beliefs, knowledge and information practice in relation to alcohol in pregnancy. Identical questions were sent to all GPs in the area in 2009.

**RESULTS:** In 2000, most GPs (71%) considered that some alcohol intake in pregnancy was acceptable, mostly on a weekly level. There was considerable inter-person variation in the participants' attitudes and recommendations to pregnant women. In 2009, significantly more GPs (51%) considered abstinence to be preferable, and significantly more GPs (53%) gave this advice to pregnant women than in 2000. Their knowledge about the official recommendations on alcohol was good. Older GPs were more likely to recommend abstinence.

**CONCLUSIONS:** The attitudes towards and knowledge about drinking in pregnancy among GPs have changed along with the change in official policy.

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**TRIAL REGISTRATION:** not relevant.

The majority of pregnant Danish women believe that information about alcohol in pregnancy can best be communicated by health personnel [1]. In a previous study, few remembered having talked to their general practitioner (GP) about the issue; and most had been advised that some alcohol intake was all right [1].

In Denmark, information about alcohol in pregnancy is to be provided by midwives and GPs [2]. From 1999 to 2007, based on an extensive review of the scientific literature, the recommendation of the Danish



“L’Absinthe” – painted by Edgar Degas in 1876. The painting forms part of the Musée d’Orsay’s permanent collection, Paris.

National Board of Health (DNBH) was: Avoid alcohol in pregnancy if possible; if you drink, drink no more than one drink per day; do not drink every day [3]. The review and a leaflet to pregnant women describing the recommendation and its background was sent to all GPs and midwives [3, 4]. In 2007, the recommendation was changed to complete alcohol abstinence [5]. No new or revised leaflets were issued by the DNBH.

Despite the existence of guidelines, adherence to these guidelines often varies much [6]. While information may influence health personnel awareness and knowledge [7], it will not necessarily influence their behaviour [8, 9]. With regard to the information provided by GPs in our previous study [1], we knew only what the pregnant women remembered, not what was actually said in the clinic. A recent study showed that only 48%

## ORIGINAL ARTICLE

1) Department of Obstetrics and Gynaecology, Aarhus University Hospital, Skejby, 2) School of Public Health, Department of Epidemiology, Aarhus University, and 3) Alcohol Treatment Centre, Social Services, Municipality of Aarhus

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of Danish midwives believe that pregnant women should abstain from alcohol [10].

In this study, we describe GPs' attitudes towards and knowledge about alcohol intake in pregnancy in 2000 and 2009 and how their answers related to the different official recommendations at these two points in time.

## MATERIAL AND METHODS

### Setting

All pregnant women in Denmark are offered free visits to their GP who is usually the first health professional to see them during pregnancy. During September 2000, 1.5 years after the introduction of a new recommendation on alcohol in pregnancy, we invited a random sample of GPs in the catchment area of the Antenatal Care Centre in Aarhus (285,000 inhabitants) to participate in a personal interview. The sample was representative of the area with respect to age, sex and postal code. Among the 96 GPs invited, 62 agreed to participate (65%). In 2009, 2.5 years after the latest change in the official recommendation, we invited all GPs in Aarhus to participate in a study with nearly identical questions. Among the 223 GPs invited to participate, 100 answered the questionnaire (45%).

### Data collection

In 2000, data collection consisted of a face-to-face interview. We asked about the GPs' attitudes towards alco-

hol intake in pregnancy and their knowledge about the official recommendation [10]. We also asked how the pregnant women were informed and what information they were given. Copies of the questionnaires may be obtained from the authors.

We phrased the questions as objectively as possible in order to suggest no specific answers to the participants. Questions were open-ended and were pre-tested to ensure that they were understandable. Relevant answer categories were available to the interviewers.

Interviews were performed by three specially trained interviewers at the interviewees' place of work. No information that could identify participants (e.g. name) was registered. All participants were financially compensated for work time lost.

In 2009, self-administered questionnaires were used because funding was not available for interviews. The questions and answer categories reported here were identical to those used in 2000, except where the new recommendation made it necessary to modify the answer categories. A letter of invitation encouraged all GPs to answer a web-based or hard copy version of the questionnaire.

Among the 100 respondents, 65 filled in the hard copy and 35 the web version. One included only basic information and was excluded. No differences were seen in the distribution of answers to any of the questions in the two types of questionnaires and the answers are therefore collapsed in all analyses.

### Statistics

We used the  $\chi^2$  test (with continuity correction in two-by-two tables) and Fischer's exact test for categorical data and the t-test and Mann-Whitney U-test for continuous data. SPSS, version 18.0, and Stata 9 (StataCorp LP, College Station, Texas) were used for data analysis.

We stratified all analyses by age (< 50;  $\geq$  50 years), sex, time since qualifying (< 25;  $\geq$  25 years), time working in general practice (< 15;  $\geq$  15 years), number of pregnant women seen annually ( $\leq$  25; > 25 years) and postal code (city centre; non-city centre).

### Ethics

The interviews in 2000 were approved by the regional ethics committee, the Danish Data Protection Agency and The Danish College of General Practitioners (DCGP). All participants gave written informed consent. The data collection in 2009 was covered by the municipality approval from the IT- department, Social services, Municipality of Aarhus, and approved by The DCGP.

*Trial registration:* not relevant.



TABLE 1

General practitioners' attitudes towards alcohol in pregnancy. Aarhus, Denmark, 2000 and 2009.

	2000, n (%)	2009, n (%)	p value
<i>How do you think that pregnant women should relate to alcohol?</i>			< 0.001
Abstain	18 (29)	50 (51)	
A drink once in a while/a drink on festive occasions is all right	26 (42)	47 (48)	
Yes, she should not drink more than			
1-3 drinks or times/month	0 (0)	0 (0)	
1-6 drinks or times/week	14 (23)	1 (1)	
$\geq$ 1 drink or times/day	4 (7)	0 (0)	
Other	0 (0)	1 (1)	
<i>Is binge drinking harmful?<sup>a</sup></i>			< 0.001
Yes	42 (68)	92 (94)	
Yes, but only during certain periods or if exceeding a certain limit	16 (26)	1 (1)	
No	1 (2)	0 (0)	
Do not know	3 (5)	5 (5)	
<i>What do you think is the maximum amount a pregnant woman should drink?<sup>b</sup></i>			< 0.001
0	5 (8)	37 (39)	
1-3 drinks/month	4 (7)	25 (27)	
1-6 drinks/week	43 (69)	28 (30)	
$\geq$ 1 drink/day	10 (16)	4 (4)	

a) One observation missing in 2009; b) Five observations missing in 2009.

## RESULTS

No substantial or significant differences were seen between participants and non-participants with respect to age, sex or place of work at both points in time (data not shown). In 2009, there were more women than in 2000 (49% versus 34%,  $p = 0.075$ ); furthermore, GPs were older (53.0 versus 49.4 years,  $p = 0.002$ ) and the median time since qualifying (26 versus 21 years,  $p = 0.005$ ) and the median time working in practice (16 versus 14 years,  $p = 0.046$ ) was longer.

### Attitudes towards drinking in pregnancy

In 2000, more than 70% of GPs considered that some alcohol intake in pregnancy was acceptable and most mentioned either a drink once in a while/on festive occasions or alcohol intake on a weekly basis as being acceptable (Table 1). When asked how much a pregnant woman should drink as a maximum, 69% set the limit at a weekly level (Table 1). When asked how they would define "a drink once in a while", 79% defined this as 1-6 times/week, so the GPs' answers were fairly consistent. In 2009, half of the GPs considered abstinence to be preferable (Table 1). All comparisons between 2000 and 2009 were statistically significant.

GPs seeing more than 25 pregnant women annually were more likely to consider abstinence as the preferred option compared with GPs seeing less than 25 (51% versus 33%,  $p = 0.032$ ), but otherwise there was no sign of effect modification in the stratified analyses.

### Knowledge

A large number of potential types of harm were mentioned by participants (Table 2). No substantial differences were observed over time.

### Recommendations about alcohol

In 2000, a large variety of answers was seen in response to the question about the official recommendation from the DNBH (Table 3). A total of 42 (68%) were able to mention at least one aspect of the recommendation, but 26% explicitly said that they did not know. Only three spontaneously mentioned all of the three statements that made up the recommendation. For comparison, 84% (52) knew the DNBC recommendation on alcohol for women in general (a maximum of 14 drinks/week). In 2009, 87% were able to state the new recommendation for pregnant women ( $p = 0.007$  compared with 2000) and 88% were able to state the recommendation for non-pregnant women. There was no sign of effect modification in the stratified analyses.

### Information to pregnant women about alcohol

In 2000, most GPs asked all pregnant women how much they drank, but only two thirds of the GPs always com-

mented on the reported intake level and 68% of the GPs advised all pregnant women about alcohol (Table 4), a figure that had risen to 91% in 2009 (Table 4).

In 2000, approximately 21% said that they recommended abstinence; a number which increased to 51% in 2009 (Table 3). Complete abstinence was more likely to be recommended by GPs  $\geq 50$  years (44% versus 35%,  $p = 0.011$ ), GPs who qualified  $\geq 25$  years before the data

TABLE 2

Most commonly mentioned types of potential harm caused by alcohol intake in pregnancy, as reported by general practitioners. Denmark, 2000 and 2009.

Types of harm	2000, n (%) <sup>a</sup>	2009, n (%) <sup>a</sup>
Brain damage	26 (42)	33 (33)
Low birth weight/growth retardation	24 (39)	26 (26)
Foetal alcohol syndrome	20 (32)	25 (25)
Malformations	16 (26)	20 (20)
Damage to the baby/foetus	14 (23)	24 (24)
Behavioural problems	7 (11)	5 (5)
Preterm delivery	5 (8)	16 (16)
Learning difficulties	4 (6)	8 (8)
Withdrawal symptoms	4 (6)	3 (3)
Mental retardation	4 (6)	2 (2)
Spontaneous abortion	3 (5)	5 (5)
Poor motor development	1 (2)	2 (2)

a) Percentages do not sum to 100 since a person may give several answers.

TABLE 3

General practitioners' knowledge about the official recommendation from the Danish National Board of Health about alcohol in pregnancy and what they recommend to pregnant women. Denmark, 2000 and 2009.

	Stated knowledge about official recommendation <sup>a</sup> , n (%)		What do you recommend? <sup>b</sup> , n (%)	
	2000	2009 <sup>c</sup>	2000	2009 <sup>c</sup>
They should abstain	30 (48)	81 (87)	13 (21)	49 (53)
A drink once in a while/a drink on festive occasions is all right	5 (8)	0 (0)	22 (36)	15 (16)
<i>She should not drink more than</i>				
1-6 drinks/week	3 (5)	0 (0)	20 (32)	3 (3)
1 drink/day <sup>d</sup>	5 (8)	0 (0)	5 (8)	0 (0)
Do not drink, but if you drink, drink no more than one drink/day and not every day	3 (5)	6 (6)	2 (3)	26 (28)
Do not know	16 <sup>e</sup> (26)	6 (6)	–	–
p value	< 0.001		< 0.001	

GP = general practitioner.

- Do you know if the National Board of Health has a special recommendation regarding how pregnant women should relate to alcohol [10].
- If discussing alcohol with a pregnant woman, what do you recommend? [10].
- Information missing for six GPs.
- One GP added "... and not every day".
- Including one GP who believed there was no recommendation, eight who did not know if there was a recommendation or not, and seven who knew that there was a recommendation but did not know what it said.

 TABLE 4

How do general practitioners obtain information about alcohol consumption from pregnant women; and how do they inform. Denmark, 2000 and 2009.

	2000, n (%)	2009, n (%)	p value
Ask everybody how much they drink <sup>a</sup>	50 (81)	85 (91)	0.087
Advise all pregnant women about alcohol <sup>a</sup>	42 (68)	85 (91)	< 0.001
<i>Comment on alcohol intake<sup>b</sup></i>			0.155
Always	37 (60)	67 (71)	
Sometimes	24 (39)	27 (29)	
Never	1 (2)	0 (0)	

a) Six observations missing in 2009.

b) Five observations missing in 2009.

collection (47% versus 35%,  $p = 0.011$ ) and GPs who had been working  $\geq 15$  years in practice (43% versus 37%,  $p = 0.023$ ).

Interestingly, in 2009 as many as 28% used the 1999-2007 recommendation (Table 4). Older GPs, GPs having qualified  $\geq 25$  years before the data collection and GPs having worked  $\geq 15$  years in practice were most likely to give this piece of advice.

When asked what they themselves would do if they were pregnant (for male GPs: one of their closest relatives) the answers were essentially the same (data not shown). No systematic differences were seen with regard to the GPs' attitudes (Table 1), what they said they recommended (Table 3) and what they themselves would do.

In 2000 and 2009, respectively, 46% and 52% suspected alcohol abuse in at least one pregnant woman ( $p = 0.597$ ). Among those who suspected abuse in 2000, 100% would talk to the woman about the problem and 36% would also refer her to specialist treatment. In 2009, 96% of those who suspected abuse would talk to the woman and 34% would refer her to specialist treatment.

Younger GPs < 50 years (59% versus 35%,  $p = 0.034$ ) and GPs seeing few pregnant women ( $\leq 25$ /year, 54% versus 33%,  $p = 0.054$ ) were more likely to suspect abuse.

#### Information to primary health-care providers about alcohol

Information from the DNBH, professional scientific literature, own education and leaflets were mentioned by > 90% as the most common sources of information about alcohol in pregnancy at both points in time (data not shown).

#### DISCUSSION

This study shows that GPs' attitudes towards and beliefs

and knowledge about drinking in pregnancy have changed along with the change in official policy. More GPs now consider alcohol abstinence in pregnancy to be preferable and more GPs know the official recommendation. Yet, only about half actually recommend abstinence. There was considerable inter-person variation in attitudes and actions; but for each participant, the answers were fairly consistent.

To our knowledge, this is the first study to describe the attitudes, knowledge and information practice among GPs in Denmark with respect to alcohol in pregnancy. In a previous study, we found that most pregnant women believed that information about alcohol in pregnancy could best be communicated to them by health personnel, but less than one third remembered having talked to a midwife or GP about the issue [1]. According to the GPs themselves, the majority said that they asked all pregnant women about their alcohol intake, most advised all pregnant women about alcohol in 2009 and three out of four commented on the intake level. This discrepancy may be explained by some pregnant women not remembering what was actually said, or the GPs may have changed practice.

Most pregnant women claimed that they had been advised that some alcohol intake was all right [1]. This is in accordance with the information from the GPs in this study, since only 21% in 2000 and 53% in 2009 said that they advised complete abstinence. In 2000, this was in line with the recommendation from the DNBH [11]. It also seems to be in line with a study performed among American gynaecologists, who did not consider a mean intake of 4-5 drinks/week to be harmful [12].

More than 90% of the GPs had been informed about alcohol in pregnancy in a professional context. This figure is comparable with the results achieved in a study of Dutch physicians [13]. Even so, few spontaneously mentioned all three items that made up the DNBH recommendation in 2000, while most knew the recommendation in 2009. At both points in time, the majority of GPs knew the simple recommendation for non-pregnant women, suggesting that remembering a simple recommendation may be easier than remembering a complex one.

The World Health Organization has formulated a list of 12 competencies needed for successful management of alcohol-related problems [14]. They include: 1) the ability to communicate accurate information in an appropriate context; 2) the ability to distinguish between low-risk, hazardous and harmful levels of alcohol consumption; 3) the ability to take an accurate drinking history; and 4) the ability to choose an appropriate management plan. With regard to items one and two, the problem seems to be the huge variation in the actual content of the information provided (Table 4). Is poten-

tially contradictory advice really better than no advice? With respect to item three, there is no gold standard [15]. Still, 9% did not attempt to take a drinking history from all pregnant women. With respect to item four, most of the participants seemed able to choose an appropriate management plan (brief intervention by talking to the woman, or referral to other experts). Guidelines may improve the process of (preventive) care [16], but adherence to guidelines often varies much [6]. Many papers have described the process of developing and implementing clinical guidelines [7, 9] and policy statements [17]. However, most studies have dealt with results related to specific interventions [18, 19] rather than the general level of awareness.

The sample was fairly small and the participation rate somewhat low. Still, no substantial or significant differences were seen between participants and non-participants, which reduces, although it does not eliminate, the risk of selection bias.

As for information bias, the interviewers could have influenced the answers provided in 2000. If so, we would expect participants to have reported attitudes and especially knowledge towards alcohol intake that was more closely related to the official recommendation, but this was not the case. The use of self-administered questionnaires made it possible for the participants to seek information before answering knowledge questions. Yet, answers to most knowledge questions did not change substantially over time.

In conclusion, the attitudes toward and knowledge about the official recommendation about alcohol drinking in pregnancy have changed along with the change in official policy. Still, while most GPs knew the official recommendation from the DNBH in 2009, only half seemed to believe that pregnant women should completely abstain from alcohol, and only half strictly adhered to the DNBH recommendation. Even so, the advice provided by all GPs in this study may not conflict with the scientific literature [20]. This would seem to suggest that standardizing the information provided by health personnel on broad issues of public health interest remains a challenge.

**CORRESPONDENCE:** *Ulrik Schiøler Kesmodel*, Department of Obstetrics and Gynaecology, Aarhus University Hospital, Skejby, 8200 Aarhus N, Denmark. E-mail: [ukes@soci.au.dk](mailto:ukes@soci.au.dk)

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