

Drinking and smoking in pregnancy: which questions do Swiss physicians ask?

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Summary

Background: Although drinking and smoking during pregnancy can have hazardous effects to exposed children, a certain number of pregnant women continues to consume alcohol and nicotine. It was investigated whether physicians and midwives in Switzerland ask pregnant women about their drinking and smoking habits.

Method: A self-report questionnaire was used to assess whether pregnant women were screened for alcohol and nicotine consumption by physicians or midwives. Data of 368 women were included in the analyses.

Results: 30.0% reported drinking alcohol at least once a month after pregnancy recognition, 2.2% reported binge drinking and 10.1% were

smokers. Only in 36.1% of the sample drinking during pregnancy was addressed. The subgroup, which drank alcohol, was not more likely to be asked about drinking habits than non-drinkers. In contrast, smoking was addressed in 66.3% of the total sample and it was addressed in nearly 90% of the smokers' subgroup.

Conclusion: A change in the screening practice in prenatal care with regard to alcohol drinking during pregnancy is recommended. Brief interventions can reduce drinking during pregnancy.

Key words: alcohol drinking; smoking; pregnancy; prenatal care; screening

Introduction

Drinking and smoking during pregnancy can result in negative short- and long-term effects in exposed children. In the most severe cases maternal drinking leads to the foetal alcohol syndrome (FAS) which is diagnosed when three criteria are met: (1) growth deficiency in both the prenatal and postnatal periods, (2) structural anomalies and/or functional deficits in the central nervous system associated with mental retardation and behavioural problems; and (3) a distinctive pattern of abnormal facial features [1, 17, 21]. Children who are affected by alcohol related CNS abnormalities and/or behavioural or cognitive abnormalities but without effects on growth and morphology are diagnosed with alcohol-related neurodevelopmental disorder (ARND). Studies estimated the prevalence of FAS to be 0.097% [2] while the rate of foetal alcohol spectrum disorders including the diagnosis of FAS and ARND was estimated 0.9% [3]. Researchers have claimed that prenatal alcohol exposure is one of the leading causes of mental disabilities in the western world [4].

Moderate levels of foetal alcohol exposure could not be reliably linked to morphological birth defects (ie facial malformations) [5]. However, there is evidence that even moderate levels of al-

cohol consumption have negative effects on mental development in infants and children [6, 22].

Maternal smoking during pregnancy is associated with lower birth weight, higher rates of preterm birth and perinatal death [7]. Furthermore, studies reported deficits in the neurodevelopment of children born to heavy smoking mothers [8]. Therefore, it is a vital challenge for modern societies to minimise foetal alcohol and nicotine exposure.

Studies investigating the screening practice for alcohol consumption and smoking in prenatal care in different countries have revealed diverting results. An early study from Ireland indicated a disparity in the recognition of the risks of smoking during pregnancy compared to the risks of drinking: whereas 57% of the health care providers made an effort to educate pregnant women about the hazardous effects of smoking, drinking was addressed only in 11% [29]. More recent studies from the United States [13] and Canada [14] indicate that more than 90% of the health care providers reported asking pregnant women about drinking and 98% about smoking [24].

The aim of the present study is to answer two questions: first, do physicians in Switzerland ask

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pregnant women about their drinking or smoking habits and second, do they ask the women selectively (ie based on information that a pregnant

woman is at particular risk for drinking or smoking).

Participants and procedure

The participants were 368 women (aged 19–43 years, $M = 32.4$, $SD = 4.3$) whose childbirth was announced in newspapers or on internet-sites of hospitals. The women were informed by telephone about the aims of the study and were asked to participate. Women who gave consent were sent a questionnaire. The participants were living in 15 different Cantons in the German and French speaking parts of Switzerland. Only German and French speaking women were included in the study. There were proportionally less foreign women and women of lower education in the sample compared to the population of childbearing mothers in Switzerland [25, 26].

Six weeks after childbirth smoking and alcohol use after pregnancy recognition were assessed retrospectively. Drinking was measured using a self-report questionnaire version of the Alcohol Use Disorder Identification Test

(AUDIT) [11], which was adapted for the use in pregnant women¹ and T-ACE [27] which is a specialised alcohol screening test for pregnant women. In the follow-up four months later, the question whether a physician (ie an obstetrician or a gynaecologist) or a midwife had addressed smoking and drinking in a consultation during pregnancy was assessed using a self-report questionnaire.

¹ Three aspects of AUDIT were modified: first, all items were changed to tap drinking and drinking related consequences in the time between pregnancy recognition and birth. Second, the question about the quantity of drinking (Item 2) was measured on a five-point scale ranging from “no alcohol use at all” to “five or more glasses” on one occasion. Third, binge drinking (Item 3) was defined as drinking four or more glasses on one occasion.

Results

After pregnancy recognition, 30.0% of the women drank alcohol once a month or more often, 1.9% of them drank on several days in a week and 2.2% reported binge drinking (ie drinking four or more glasses of alcohol on a single occasion). Furthermore, a subsample of 10.1% smoked cigarettes and 1.4% smoked cannabis.

Approximately one-third of the women reported that a physician or a midwife addressed

their drinking habits during pregnancy. In contrast, physicians and midwives addressed smoking nearly twice as often (table 2). Moreover, the probability that smoking was addressed was higher for women who did smoke during pregnancy: 89.2% of them were asked about their smoking habits. However, pregnant women who were at higher risk to drink alcohol as measured by AUDIT were not more likely to be asked about their drinking

Table 1

Sample characteristics by the level of prenatal substance exposure.

		No drinking ¹ and smoking n (%) ²	Smoking only n (%) ²	Drinking only ¹ n (%) ²	Drinking ¹ and smoking n (%) ²
Citizenship	Swiss ³	199 (64.4)	18 (5.8)	79 (25.6)	13 (4.2)
	Other	29 (59.2)	4 (8.2)	16 (32.7)	0 (0.0)
Language Region	German	172 (65.4)	18 (6.8)	65 (24.7)	8 (3.0)
	French	60 (58.8)	6 (5.9)	31 (30.4)	5 (4.9)
Parity	primi	90 (65.2)	12 (8.7)	30 (21.7)	6 (4.3)
	multi	135 (62.2)	10 (4.6)	66 (30.4)	6 (2.8)
Education ⁴	basic compulsory schooling	13 (65.0)	2 (10.0)	4 (20.0)	1 (5.0)
	finished apprenticeship	131 (64.9)	18 (8.9)	44 (21.8)	9 (4.5)
	high school degree	23 (62.2)	2 (5.4)	11 (29.7)	1 (2.7)
	degree from tertiary institution other than university	32 (65.3)	2 (4.1)	14 (28.6)	1 (2.0)
	university degree	33 (57.9)	0 (0.0)	23 (40.4)	1 (1.8)
Total		232 (63.6)	24 (6.6)	96 (26.3)	13 (3.6)
Age (years) ⁵		32.4	30.5	33.0	32.0

¹ Alcohol consumption was assessed as drinking alcohol at least once per month after pregnancy recognition

² ns varied because of missing values

³ In the population of childbearing mothers in Switzerland 73.5% are of Swiss citizenship [26]

⁴ Among the female population in the age of 25–39 years in Switzerland 13.5% have accomplished secondary education I (i.e., basic compulsory schooling), 59.4% secondary education II (i.e., finished apprenticeship or high school degree) and 27.1% tertiary education (degree from tertiary institution or university degree) [25].

⁵ On average, childbearing mothers in Switzerland are 31.0 years of age [10]

Table 2

Percentage of pregnant women who were asked about drinking and smoking within different subsamples of substance use habits after pregnancy recognition.

	Subsamples with different substance use habits					
	Total sample (n = 368)	Smoking (n = 37)	Risk drinking (AUDIT ¹ , n = 24)	Risk drinking (T-ACE ² , n = 57)	Drinking at least once per month ³ (n = 110)	Binge drinking ⁴ (n = 8)
	% within the (sub)sample					
Physician or midwife addressed:						
Drinking and smoking	35.6	48.6	33.3	40.4	36.4	50
Drinking only	0.5	0.0	0.0	0.0	0.9	0
Smoking only	30.7 ^a	40.5 ^a	41.7 ^a	33.3 ^a	37.3 ^a	12.5

¹ Risk drinking was measured with an adapted version of AUDIT using a cut-off of 4 points. Women above the cut-off still drank at moderate levels, which do not correspond to consumption levels common in cases of alcohol dependency (the mean consumption was 14 g/day absolute alcohol before pregnancy recognition and 4 g/day after pregnancy recognition)

² Risk drinking was assessed with T-ACE [27], using the three-drinks-cut-off in the first question

³ Alcohol consumption was assessed as drinking alcohol at least once per month after pregnancy recognition

⁴ Binge drinking was defined as drinking at least four standard glasses on one occasion after pregnancy recognition

^a McNemar-Test significant ($p < 0.01$; "addressed smoking" vs "addressed drinking")

habits than their counterparts who did not drink at all. To account for the bias toward higher education and Swiss citizenship in the sample, the analyses were rerun after a weighting procedure was applied giving more weight to women of lower education and foreign citizenship. The weighting procedure did not influence the results.

For the 133 women, who had been asked about their drinking habits during pregnancy, the topic was most often addressed by a gynaecologist (75.2%), less often by a midwife (39.1%) or an obstetrician (35.1%).

Discussion

Gynaecologists, obstetricians and midwives play an important role in the health education of pregnant women. They represent a credible source of health information and their advice has an impact on the health behaviour of pregnant women [12]. Therefore, it can be considered an eminent task for healthcare providers to talk about health behaviour during prenatal visits, in particular about drinking and smoking behaviour.

Cigarette smoking had been addressed in nearly two-thirds of all the women in the sample and in almost ninety percent of the smokers. However, only in 35.6% of the pregnant women, drinking had been addressed by a physician or a midwife. Moreover, physicians and midwives were not more likely to address drinking in the group of women who did drink compared to the women who did not drink at all. The percentage of pregnant women in Switzerland who were asked about alcohol drinking is low compared to other countries where the alcohol screening practice in prenatal care has been investigated (eg the United States [13] and Canada [14]). Possible reasons why physicians and midwives fail to address drinking behaviour include that they might believe that alcohol use and abuse is not prevalent among their patients or that they feel discomfort in discussing the topic [16].

A limitation of the study is that participants were questioned five months after giving birth

whether they were asked about drinking and smoking habits by a healthcare provider. The time lag between the prenatal visits and the time when the women responded to the questionnaire could have lead to memory distortions. Actual drinking and smoking after pregnancy recognition was also assessed retrospectively. However, there is evidence that retrospective assessment of drinking reduces the underestimation of the consumption [28].

No universally safe level of prenatal alcohol consumption has been established [17, 18], nevertheless a certain number of pregnant women continues to drink alcohol. Brief interventions can reduce drinking in pregnant women [19] and there is even evidence suggesting that the mere application of a screening test might change drinking habits of pregnant women [20]. Therefore, it is urgently recommended that physicians (ie gynaecologists and obstetricians) and midwives routinely screen women during prenatal visits for drinking and smoking habits and provide information on the consequences of foetal alcohol and nicotine exposure.

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