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Tobacco and alcohol use in pregnancy in France: The role of migrant status The nationally representative ELFE study

Maria Melchior [a,b,*], Aude Chollet [a,b], Nine Glangeaud-Freudenthal [c], Marie-Josèphe Saurel-Cubizolles [c], Marie-Noëlle Dufourg [d], Judith van der Waerden [a,b], Anne-Laure Sutter-Dallay [e,f,g]

[a] INSERM, UMR_S 1136, Pierre Louis Institute of Epidemiology and Public Health, Department of Social Epidemiology, F-75013 Paris, France
[b] Sorbonne Universités, UPMC Univ Paris 06, UMR-S 1136, Pierre Louis Institute of Epidemiology and Public Health, Department of Social Epidemiology, F-75013 Paris, France
[c] INSERM, Obstetrical, Perinatal and Pediatric Epidemiology Research Team, Center for Epidemiology and Biostatistics (U1153), Paris-Descartes University, Paris, France
[d] Ined INSERM joint unit Elfe, Paris, France
[e] Bordeaux Univ., U657, F-33000 Bordeaux, France
[f] INSERM, U657, F-33000 Bordeaux, France
[g] University Department of Adult Psychiatry, Charles Perrens Hospital, Bordeaux, France

HIGHLIGHTS

- In France, migrant pregnant women have low levels of tobacco and alcohol use but similar levels of binge drinking.
- Tobacco use and binge drinking follow a socioeconomic gradient in native women, not in migrants.
- Migrant women who are single-parents or experience psychological difficulties have high levels of substance use in pregnancy.
- In migrant women, tobacco and alcohol use in pregnant are more likely to co-occur than in native women.
- Health professionals should systematically inquire about tobacco and alcohol use throughout pregnancy to improve detection of women with addictive behaviors.

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ABSTRACT

Introduction: Tobacco and alcohol use in pregnancy are modifiable yet frequent risk factors of poor perinatal outcomes. We examined whether characteristics associated with substance use in pregnancy vary between native and migrant women, who often differ in terms of socio-demographic characteristics.
Methods: Data come from a nationally representative sample of children born in France in 2011 (ELFE study, n = 18,014). Maternal substance use in pregnancy (tobacco: ≥1 cigarette/day, alcohol: ≥1 time, binge drinking: ≥3 units of alcohol on one occasion) was assessed using survey methodology by a) trained interviewers and b) self-reports. Migration status was determined based on country of birth (native-born vs. migrant). The sample included 2330 migrant women, predominantly from North Africa (35.4% — primarily Algeria and Morocco), Sub-Saharan Africa (27.3% — primarily Senegal, Ivory Coast, the Congo and Cameroun), Europe (20.2% — primarily Portugal and Germany) and Asia (10.2% — primarily Turkey). Characteristics potentially associated with substance use included socio-demographics (maternal age, number of children, relationship status, educational attainment, employment status), health (psychological difficulties, incomplete prenatal care) and partner's characteristics (migration status, employment).
Results: Compared to the native-born, migrant women had lower levels of tobacco smoking (8.8 vs. 21.9%) and alcohol use (23.4 vs. 40.7%), but not binge drinking (2.9 vs. 3.3%). Unfavorable socioeconomic circumstances were associated with tobacco smoking in native-born women only. Single parenthood was associated with alcohol use only in migrant women. In migrant women, co-occurring use of another substance and psychological difficulties were more strongly associated with use of tobacco, alcohol or binge drinking than in native-born women.
Conclusions: Migrant women have less favorable socioeconomic characteristics than native women but are generally less likely to use tobacco and alcohol in pregnancy. However those who experience single-parenthood need special attention, as they are disproportionately likely to use psychoactive substances which put them and their children at risk of poor health outcomes.

* Corresponding author at: INSERM, UMR_S 1136, Hôpital Paul Brousse, 16 avenue Paul Vaillant Couturier, 94800 Villejuif, France.
E-mail address: maria.melchior@inserm.fr (M. Melchior).

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1. Introduction

Tobacco and alcohol use in pregnancy are important modifiable risk factors of poor perinatal outcomes (Andres & Day, 2000; Huizink, 2014; Lebel et al., 2012; Nykjaer et al., 2014; Saurel-Cubizolles, Prunet, & Blondel, 2013) and children's cognitive and behavioral difficulties (Alvik, Aalen, & Lindemann, 2013; Huizink & Mulder, 2006; Kelly et al., 2013; Keyes, Davey-Smith, & Susser, 2014). Despite the existence of primary and secondary prevention strategies (Baha & Le Faou, 2009; French National Institute for Prevention and Health Education (INPES) (INPES), 2013), levels of substance use in pregnant women in industrialized countries remain high (Zeitlin et al., 2012). Key associated factors include social and economic hardship (low maternal educational achievement, financial difficulties, unemployment, single motherhood) (Baron et al., 2013), psychological difficulties (symptoms of depression and anxiety) (Orr, Blazer, & Orr, 2012; Saurel-Cubizolles et al., 2013), as well as patterns of substance use among the women's partner/family/friends (Saurel-Cubizolles et al., 2013; Xu, Wen, Rissel, & Baur, 2013).

In many countries, migrant women experience high levels of socio-economic and mental health difficulties (Toulemon, 2004). Compared to the native-born, migrant women also have less regular prenatal care, a higher number of children, and higher rates of single-motherhood, all of which can contribute to poor pregnancy outcomes (Ekblad, Gissler, Korkeila, & Lehtonen, 2014; Saurel-Cubizolles et al., 2013). In contrast, migrant women generally have lower substance use levels than native women (Urquia, O'Campo, & Heaman, 2012).

In France, an estimated 17.0% of pregnant women are daily tobacco smokers, 22.8% drink alcohol (2.5% more than once a month, 3.2% ≥3 units of alcohol), and 1.2% use cannabis (Saurel-Cubizolles et al., 2013). Migrants living in France primarily come from Europe (37.0% in 2011 — mainly Southern Europe ex. Portugal and Eastern Europe ex. Romania or Poland), North African countries (Algeria, Morocco, Tunisia, 29.7%), Sub-Saharan Africa (13.3%) and Asia (14.4%) (INSEE, 2015), that is a majority comes from countries in which substance use levels are low — particularly in women (WHO, 2013). Substance use in migrant women may go undetected for several reasons: lack of regular prenatal care, cultural and language barriers to disclose unfavorable health behaviors, health professionals' reluctance to inquire (Moussa, Ostergren, Eek, & Kunst, 2010). Identifying risk factors associated with substance use in migrant women and comparing them to those most relevant among native women can help refine knowledge of characteristics which physicians should pay attention to in screening for prenatal substance use in their patients.

We examined whether socio-demographic, health and partner's characteristics associated with substance use in pregnancy vary depending on women's migration status, using data come from the nationally representative ELFE cohort study of children born in France in 2011.

2. Material and methods

2.1. Study population

Data come from the baseline wave of the ELFE (Etude Longitudinale Française depuis l'Enfance) study, a multidisciplinary, nationally representative, birth cohort, which included 18,312 children born in 349 maternity units in France in 2011. Exclusion criteria were stillbirth, birth <33 weeks of gestation and plans to move out of metropolitan France in the following 3 years. Participating mothers and children were recruited in maternity wards (51% participation rate). Data were collected in standardized interviews conducted by trained interviewers and through self-completed questionnaires, which were all first tested in a pilot study. Factors associated with study participation included parental low occupational grade and unemployment, young maternal age and having more than one child. Study weights account for the sampling scheme and factors associated with participation. The ELFE study received approval of bodies overseeing ethical data collection in France (Comité Consultatif sur le Traitement des Informations pour la Recherche en Santé — CCTIRS, Commission National Informatique et Libertés: CNIL).

2.2. Measures

2.2.1. Maternal tobacco and alcohol use in pregnancy

Face-to-face interviews included measures of maternal tobacco and alcohol use, which were identical to those used in the French National Perinatal study in 2010 (Saurel-Cubizolles, Prunet, & Blondel, 2014). Maternal tobacco use was ascertained as follows: 'During pregnancy did you smoke tobacco, even occasionally?', 'Was it also the case in the 3rd trimester of your pregnancy?' 'How many cigarettes, on average, did you smoke per day/week/month?' Based on this information, we identified regular smokers (≥1 cigarette/day, yes vs. no) and heavy smokers (≥10 cigarettes/day, yes vs. no). Alcohol use was ascertained as follows: 'During pregnancy, how often did you drink alcoholic drinks (beer, cider, wine, heavy liquor)?' In addition, women self-completed a questionnaire which included the following questions: 'How many glasses of alcohol per month did you drink *before* you realized you were pregnant?', and 'How many glasses of alcohol per month did you drink *after* you realized you were pregnant?'. Participants who gave a positive answer on any of these three questions on alcohol use (in the face-to-face interview or in the self-completed questionnaire) were considered to have drunk alcohol in pregnancy (yes vs. no). The self-completed questionnaire also included an item on binge drinking 'During pregnancy, how many times did you drink 3 or more alcoholic drinks on one occasion?' — any positive response was considered as indicative of binge drinking (yes vs. no).

2.2.2. Socio-demographic, health and partner's characteristics

Maternal and paternal migration status was ascertained by a) country of birth (France vs. another country) and b) citizenship (French vs. non-French). Both measures were closely related (correlation coefficients 0.74–0.76 for the father and mother), and following other researchers, we defined migrant status using the country of birth (Moussa et al., 2010). Most migrant women in our study came from North Africa (35.4% — primarily Algeria and Morocco), Sub-Saharan Africa (27.3% — primarily Senegal, Ivory Coast, the Congo and Cameroun), Europe (20.2% — primarily Portugal and Germany) and Asia (10.2% — primarily Turkey). Due to low statistical power, they were combined into a single category, but the role of country of origin with regard to study outcomes was tested in secondary analyses.

Maternal socio-demographic characteristics studied were: age at the time of pregnancy (25–29, 30–34, ≥35 vs. <25 years), number of children ≥1 child vs. 1 child), relationship status (lives with the child's father: yes vs. no), educational attainment (middle school or below; high school vs. above high school), and employment status (unemployed/out of labor force vs. employed).

Maternal health characteristics included psychological difficulties (During pregnancy, did you experience persistent psychological difficulties?; yes vs. no) and the adequacy of prenatal care (< vs. ≥7 medical visits). Among women who reported psychological difficulties, 31.6% received medical treatment implying symptoms of clinical significance.

Partner's (i.e. the child's father's) characteristics studied were migrant status and employment at the time of birth (unemployed/out of labor force vs. employed) as reported by participating mothers.

2.2.3. Statistical analyses

We studied associations between socio-demographic, psychological and partner's characteristics and tobacco and alcohol use in pregnancy in native-born and in migrant women. First, we calculated weighted estimates of women's characteristics and tobacco and alcohol use. Second, we compared the socio-demographic, health, partner's and substance use characteristics of native-born and migrant women. Third, we