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PREDICTORS OF ALCOHOL USE DISORDERS IN ARGENTINEAN PREGNANT WOMEN

Mariana Beatriz López[1], Aldana Lichtenberger[2], and Mariana Cremonte[2]

[1]Interdisciplinary Center of Mathematical and Experimental Psychology Research (CIIPME) - National Scientific and Technical Research Council (CONICET), Argentina.

[2]Research Group on Alcohol and Injuries (IPSIBAT-UNMdP-CONICET), Argentina.

Corresponding Author: mb.lopez@conicet.gov.ar

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ABSTRACT

Background and Objective

High prenatal alcohol exposure, such as that presented by women with an alcohol use disorder (AUD), is related to severe adverse consequences such as fetal alcohol syndrome. Since most research on this topic comes from English-speaking countries and is scarce in Argentina, the aim of this study was to identify risk factors of AUD in Argentinean pregnant women. Predictors explored here included drinking alcohol, the use of other substances, and the accompanying motivational and socio-cultural characteristics.

Material and Methods

A systematic probabilistic sample of 641 puerperal women from an Argentinean city were personally interviewed after giving birth. DSM-5 AUD was established through the International Composite Diagnostic Interview -CIDI-, socio-economic level with the Graffar-Méndez Castellano scale and socio-demographic and psychosocial variables through ad-hoc questions. We then estimated the prevalence of AUD among all women and current drinkers. To identify predictors of AUD we performed logistic regressions with AUD status (positive vs. negative) as the outcome; drinking and substance use variables (age of alcohol consumption onset, usual type of drink, tobacco use during pregnancy, any consumption of other illegal substances), family and living conditions (partner status, previous children, occupation-labour situation, education level, socio-economic level) and age, the number of health checkups during pregnancy, and general attitude towards alcohol consumption while pregnant, as predictors.

Results

The prevalence of AUD was 8%, and among current drinkers was 9.5%. The participants' age, the age of alcohol consumption onset, tobacco use during pregnancy, illegal substances use (ever), number of health checkups during pregnancy and general attitude towards alcohol consumption during pregnancy, showed a significant relationship with AUD. As age increased a positive diagnosis of AUD was less likely while having started to drink before the age of 15 made it more likely. Moreover, if the woman had used tobacco during pregnancy, it was 147% more likely to meet AUD diagnostic criteria, and if she had ever used illegal substances, she was 381% more likely to have an AUD. Finally, a positive diagnosis of AUD was less likely among those who had a negative attitude towards alcohol consumption during pregnancy and among those who had more health checkups during pregnancy. Notwithstanding, in the general model, age, age of alcohol consumption onset and tobacco use during pregnancy were not significant as predictors, which suggests that their relationship with AUD is explained by factors common to the other variables of the model.

Conclusion
Urgent action is needed in the region to prevent prenatal drinking, and pregnant women with an AUD should be the focus of distinct efforts. Interventions should target younger women, those who consume or have consumed illegal substances and those who maintain a more permissive attitude towards alcohol consumption during pregnancy.

Key words: *women, alcoholics, ethanol, risk factors, pregnancy*

PREDICTORS FOR ALCOHOL USE DISORDERS IN PREGNANT WOMEN

Research evidence over the last 45 years revealed a spectrum of irreversible disabilities, 100% attributable to prenatal alcohol exposure.[1] Consuming alcohol at any stage of pregnancy increases the chances of suffering fetal death,[2] spontaneous abortion,[3] premature birth, low gestational age, low birth weight,[4] and a spectrum of physical, mental, behavioural / or learning disabilities known as Fetal Alcohol Spectrum Disorders (FASD).[5] Fetal Alcohol Syndrome (FAS), the most severe consequence of this spectrum, is the first avoidable cause of mental retardation, birth defects, and developmental delays[6] and affects between 2 and 5% of the world's population.[7] High prenatal alcohol exposure, generally presented by women with an alcohol use disorder (AUD), is related to the uttermost severe consequences, such as FAS.[8] In addition, although alcohol consumption tends to decrease in the total population during pregnancy, this does not occur in women with AUD.[9] Hence, the analysis of the risk factors of AUD becomes crucial to design effective prevention plans among pregnant women and those of reproductive age. Furthermore, the public health systems must detect and protect these vulnerable women and provide support and treatment.

To date, most evidence on the predictive factors of AUD has been performed in males from English-speaking countries and is scarce among women and in the Latin-American region. Research has shown risk factors to include socio-demographic and behavioural characteristics such as age,[10–12] gender,[10–14] the age of alcohol consumption onset,[15,16] and tobacco and illegal substances use.[10,12,14,17,18] Moreover, some studies point to peer support[19,20] and marriage[10,12,21] as protective factors.

The aim of this study was to identify predictors of AUD in Argentinean pregnant women while considering socio-demographic and behavioural characteristics, and analyzing the relationship between AUD and psychosocial factors.

METHODS

Participants

A probabilistic sample of 641 puerperal women from an Argentinean city were personally interviewed. Participants were between the ages of 13 and 44 (M = 25.6 [SD = 6.6]). At the time of the interview, most women were living with their partners either cohabiting (59%) or married (24.6%). In addition, 35.7% were primiparous.

Regarding the occupational status, over half of the participants (53.7%) were housemakers, and among those who were employed (33.6%), most had a part-time job (19.3%). In relation to educational level, 62% had less than 12 years of formal education, and only 10% had either completed or started graduate education programs.

Recruitment

Data were obtained through probabilistic systematic cluster sampling. All women were face-to-face interviewed during the 48 hours after delivery, from October 2010 to February 2011 in a private maternity unit and in the largest public (state-owned) maternity unit in the city of Santa Fe, Argentina. Informed consent was obtained in every case. After the interview, a brochure on "breastfeeding and alcohol" was distributed among the participants.

The study obtained approval from the Ethics Committee of the Interdisciplinary Center for Research in Mathematical and Experimental Psychology (CIIPME), of the National Council for Scientific and Technical Research (CONICET) of Argentina.

Instruments

DSM-5 AUD diagnosis was established through the International Composite Diagnostic Interview-CIDI.[22] The CIDI is a widely used, structured diagnostic interview. It has shown good psychometric performance in different countries and contexts.

The socio-economic level was estimated with the Graffar-Méndez Castellano scale.[23] Socio-demographic and psychosocial variables were evaluated through *ad-hoc questions.* To measure the *general attitude towards drinking while pregnant* the following question (yes/no) was asked: "Do you think it is important to pay attention to alcohol consumption during pregnancy? That is, do you believe a pregnant woman should limit her alcohol consumption."[24]

Data Analyses

Prevalences with 95% confidence intervals (95% CI) of DSM-5 AUD for the last 12 months were calculated among all women and current drinkers – those who had consumed a whole drink of any alcoholic beverage in the last 12 months.

To identify predictors of AUD we performed logistic regressions with AUD status (positive vs. negative) as the outcome; drinking and substance use variables (age of alcohol consumption onset, usual type of drink, tobacco use during pregnancy, other illegal substances use [ever]), family and living conditions (partner status, previous children, occupation-labour situation, education level, socio-economic level) and age, number of health checkups during pregnancy, and general attitude towards drinking while pregnant, as predictors.

Results

The general prevalence of AUD was 8% (5.8–10.1), and among current drinkers was 9.5% (7.3–12.3). Most of the current drinkers presented mild AUD (7.5% [5.5–10]), and the rest moderate AUD [0.9% (0.4-2.2)] and severe AUD (1.1% [0.5–2.4]) (not shown in tables).

Predictors of Alcohol Use Disorders (DSM-5 AUD) identified by logistic regression analysis among current drinking puerperal women are presented in Table 1. The participants' age, the age of alcohol consumption onset, tobacco use during pregnancy, illegal substances use (ever), number of health checkups during pregnancy and general attitude towards alcohol consumption during pregnancy, showed a significant relationship with AUD. As the age increased, a positive diagnosis of AUD was less likely, while having started to drink before the age of 15 made it more likely. Moreover, if the woman had used tobacco during pregnancy, it was 147% more likely that she met AUD diagnostic criteria, and if she had ever used illegal substances, she was 381% more likely to have an AUD. Finally, a positive diagnosis of AUD was less likely among those who had a negative attitude towards alcohol consumption during pregnancy and among those who had more health checkups during pregnancy. Notwithstanding, in the general model, age, the age of alcohol consumption onset and tobacco use during pregnancy were not significant as predictors. Table 1 also shows the results of the logistic regression analysis while controlling for the other variables.

DISCUSSION

The prevalence of AUD during pregnancy was extremely high compared with other studies worldwide.[9,21] This could be explained, at least partially by the high level of acceptance of alcohol consumption in Argentina.

Regarding predictors of AUD, younger age, early alcohol consumption onset, tobacco use during pregnancy, having ever used an illegal substance, fewer checkups during pregnancy and a positive general attitude towards alcohol consumption during pregnancy were associated to an increased risk of AUD.

As in other contexts, the probability of AUD decreased with increasing age[11,12, 21] and early age of alcohol consumption onset (14 years or before) was related to a higher probability of AUD as well.[15,16] However, these characteristics were no longer associated to an AUD diagnosis when the effect of the other aspects was controlled, suggesting that their relationship with AUD is linked to these other dimensions or depends on a factor common to them, such as a healthy lifestyle[25] or a common genetic, neurobehavioral and environmental set of characteristics.[26,27]

In agreement with past studies, smoking during pregnancy and having ever used an illegal substance were related to AUD.[10,12,14,17,18] Having ever used an illegal substance was the stronger predictor of AUD,

TABLE 1 Predictors of Alcohol Use Disorders (DSM-5 AUD) Identified by Logistic Regression Analysis in Current Drinking Puerperal Women (n = 534).

Predictor	*B*	***p***	***OR***	**95*CI***
Age	–.096	.000	.91	.86 – .96
*Age	–.056	.059	.95	.89 – 1
Age of alcohol consumption onset	.997	.001	2.71	1.49 – 4.92
*Age of alcohol consumption onset	.375	.296	1.45	.72 – 2.94
Tobacco use during pregnancy	.905	.002	2.47	1.38– 4.43
*Tobacco use during pregnancy	.617	.056	1.85	.98 – 3.49
Illegal substances use (ever)	1.570	.001	4.81	1.97 –11.7
*Illegal substances use (ever)	1.639	.002	5.15	1.75 – 17.1
Number of health checkups during pregnancy	–.247	.004	.78	.66 – .92
*Number of health checkups during pregnancy	–.202	.029	.82	.68 – .98
General attitude toward alcohol consumption during pregnancy	1.116	.001	3.05	1.6 – 5.76
*General attitude toward alcohol consumption during pregnancy	.826	.018	2.28	1.15 – 4.54

**Controlling the other variables. DSM5 AUD coded 1 for positive and 0 for negative (reference category). Age as a continuous quantitative variable. Age of alcohol consumption onset coded 1 for 14 years or before and 2 for 15 years or after (reference category). Tobacco use during pregnancy coded 1 for yes and 0 for no (reference category). Illegal substances use (ever) coded 1 for yes and 0 for no (reference category). Number of health checkups during pregnancy as a continuous quantitative variable. The general attitude toward alcohol consumption during pregnancy coded 1 for yes and 2 for don´t know and no (reference category). p = according to Wald test. OR = odds ratio. 95 CI = 95% confidence interval.*

increasing its chances by 381% and even more (415%), when adjusting for other factors. This relationship between AUD and tobacco and illegal substances use could be explained by common conditioning factors, from the influences of close relationships with similar habits and general attitudes towards those substances to the psycho-biological and environmental factors linked to compulsive behaviours. For instance, the comorbidity between alcohol consumption problems and tobacco use[28] was partially explained by a family history of alcoholism. This relationship was mediated by childhood stressors, alcohol expectancies, and behavioural under control.

The general attitude towards alcohol consumption during pregnancy and the number of health checkups during pregnancy were strongly associated with AUD. As for the former, AUD was less likely among those who had a negative attitude towards alcohol consumption during pregnancy. This result supports the hypothesis of the usefulness of attitudes for predicting behaviours.[29] Public policies that promote abstinence from alcohol during pregnancy could influence attitudes, and therefore maternal decisions related to prenatal alcohol exposure.[30] Finally, the number of health checkups during pregnancy was negatively related to the positive diagnosis of AUD. It seems reasonable that those who tend to take care of their health would not incur in risky behaviours.

This study presents some limitations, as the ones resulting from a cross-sectional design and the use of self-reported measures. Lastly, the sample may not be representative of other contexts. Therefore, and considering that the socio-economic and cultural factors intervene in alcohol drinking practices, these

results should not be generalized without caution. Despite the above, our results are the first to present evidence on the predictive factors associated with AUD during pregnancy among Latin-American women. The presence of AUD during pregnancy represents a great risk to the mother and the fetus, who may suffer irreversible consequences. Thus, prenatal alcohol exposure poses multiple challenges for the public health system. In most developing countries, there are no guidelines to detect and manage this population, so prioritizing prevention among women of reproductive age becomes essential. In this study, we determined the prevalence and identified predictors of AUD in Argentinian pregnant women.

In conclusion, urgent action is needed in the region, where the prevalence of AUD during pregnancy is extremely high, to prevent prenatal drinking and pregnant women with AUD should be the focus of distinct efforts. Interventions should target younger women, those who consume or have consumed illegal substances and those who maintain a more permissive attitude towards alcohol consumption during pregnancy.

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CONFLICTS OF INTEREST

None to declare.

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