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Implementing a new model of counselling to prevent fetal alcohol syndrome in Ukraine: pre-implementation stage

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Alcohol consumption during pregnancy is a serious threat to maternal and fetal health, leading to fetal alcohol syndrome (FAS) and other disorders. Despite the existence of international recommendations for prevention, there is no standardized model of counselling pregnant women on alcohol consumption in Ukraine.

Aim – to study alcohol use behavior among women of reproductive age, including pregnant women, and assessed barriers, facilitators, and the feasibility of implementing an Alcohol Use Disorders Identification Test (AUDIT-C)-based counselling model for preventing fetal alcohol syndrome (FAS), as part of the The Joint Action Prevent Non-Communicable Diseases project.

Materials and methods. Focus group discussions were conducted with healthcare professionals and women of reproductive age. The data were analyzed by content analysis using MaxQDA and Excel software.

Results. After evaluation of the AUDIT-C-based counselling model healthcare providers indicated the following barriers: limited appointment time, insufficient preparation for motivational interviewing, and stigmatization of the topic. Women of reproductive age noted a low level of awareness of FAS and insufficient availability of information.

Conclusions. The study revealed that doctor overload, stigma, and low awareness of alcohol-related risks among women are major barriers to implementation. Optimizing the model requires training of healthcare professionals and better access to reliable information. Proposed AUDIT-C-based counselling model is feasible and has potential to strengthen alcohol prevention efforts within routine antenatal care in Ukraine. Our data serves as a basis for making new counselling model more efficient and targeted.

The authors declare that there is no conflict of interest.

Keywords: fetal alcohol syndrome, AUDIT-C, motivational counselling model, healthy pregnancy, alcohol consumption, JAPreventNCD.

Впровадження нової моделі консультування з метою профілактики фетального алкогольного синдрому в Україні: етап перед впровадженням

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Вживання алкоголю під час вагітності є серйозною загрозою для здоров'я матері та плода, що призводить до фетального алкогольного синдрому (ФАС) та інших розладів. Незважаючи на існування міжнародних рекомендацій щодо профілактики, в Україні немає стандартизованої моделі консультування вагітних жінок щодо вживання алкоголю.

Мета – вивчити ставлення щодо вживання алкоголю серед жінок репродуктивного віку, включаючи вагітних жінок, та оцінити бар'єри, сприятливі фактори та доцільність впровадження моделі консультування на основі AUDIT-C (Alcohol Use Disorders Identification Test) для профілактики ФАС у межах проекту Спільні дії для профілактики раку та інших неінфекційних захворювань (JA Prevent NCD).

Матеріал та методи. Проведені фокус-групові дискусії з медичними працівниками та жінками репродуктивного віку. Проаналізовані дані за допомогою контент-аналізу з використанням програмного забезпечення MaxQDA та Excel.

Результати. Після оцінки моделі консультування на основі AUDIT-C медичні працівники вказали на такі бар'єри: обмежений час прийому, недостатня підготовка до мотиваційного інтерв'ю та стигматизація теми. Жінки репродуктивного віку відзначили низький рівень обізнаності про ФАС та недостатню доступність інформації.

Висновки. Перевантаження лікарів, стигматизація та низька обізнаність жінок про ризики, пов'язані з вживанням алкоголю, є основними перешкодами для впровадження моделі консультування на основі AUDIT-C. Для її оптимізації необхідне навчання медичних працівників та покращення доступу до надійної інформації. Запропонована модель є реалістичною і має потенціал для посилення профілактичних заходів щодо вживання алкоголю в межах рутинної допологової допомоги в Україні. Отримані дані слугують основою для підвищення ефективності та цільової спрямованості нової моделі консультування.

Автори заявляють про відсутність конфлікту інтересів.

Ключові слова: фетальний алкогольний синдром, AUDIT-C, мотиваційна модель консультування, здорове вагітність, споживання алкоголю, JA PreventNCD.

Introduction

Fetal alcohol syndrome (FAS) remains a serious medical and social problem worldwide, affecting the health of newborns and is a burden to society. Previous findings indicate that around 15 of every 10 000 livebirths worldwide will have FAS, translating to about 119 000 children born with FAS globally every year [12]. Exposure to alcohol in utero can lead to the formation of various disorders of the fetal alcohol spectrum, including facial dysmorphia, cardiovascular anomalies, neurological disorders, vision and hearing problems, and in older age – to coordination disorders, intellectual and behavioral disorders, and socialization issues [14]. It also contributes to a complicated pregnancy, increases the risk of pathological births, congenital hypo-

trophy, morphological and functional immaturity of the newborn, congenital asphyxia, and birth distress syndrome, and stillbirth [14]. Although the most significant impact of alcohol is in the first trimester, fetal developmental disorders can occur at all stages of pregnancy.

The prevalence of alcohol use during pregnancy is 9.8% (95% CI: 8.9–11.1) globally, with much higher rates in Ireland (60.4%), Denmark (45.8%), the United Kingdom (41.3%) and Australia (35.6%). Approximately 1 in 67 women who drink alcohol during pregnancy will give birth to a child with FAS, which is about 119,000 cases each year [12]. Despite the moderate prevalence of FAS in Ukraine at estimated 50 per 10,000 children (in 2019) [16], the problem is poorly studied with limited country data after full-scale invasion and requires the development of prevention strategies.

One of the most effective measures for preventing FAS is the complete exclusion of alcohol for women who are planning a pregnancy or have already become pregnant, as alcohol consumption in the early stages of pregnancy has the greatest impact on fetal development. Systematic reviews have confirmed the effectiveness of psychosocial and short-term interventions, including those delivered by healthcare professionals, in increasing abstinence and reducing alcohol consumption during pregnancy [15].

Studies have demonstrated positive results of screening methods and short-term interventions in the general population [4]. Studies with pregnant women have shown that short-term interventions can be effective in reducing alcohol consumption and alcohol-related risks during pregnancy [11].

In Ukraine, according to the national protocol «Normal Pregnancy» [8], screening questions about alcohol use are included; however, there is currently no defined pathway or follow-up counselling framework to support pregnant women who consume alcohol.

We proposed the implementation of a model for the prevention of FAS, the main stages of which include:

1) conducting a screening survey on alcohol consumption during the initial examination using the Alcohol Use Disorders Identification Test (AUDIT-C) [17];

2) providing recommendations for stopping the use of alcohol and other psychoactive substances;

3) referral to a psychiatrist if the patient is unable to give up alcohol on her own [9].

Given the high sensitivity and specificity of the AUDIT-C test in detecting alcohol use issues among pregnant women [1], we aimed to assess the opportunities and barriers to implementing new counselling model, and conducted a qualitative study as the first stage of a feasibility pilot study: focus group discussions (FGD).

Materials and methods of the study

Organizing and conducting FGD. FGD with health care professionals and women of reproductive age were organized to assess the opportunities and barriers to implementing the new counselling model at the first stage of its implementation in Kyiv city, including health care professionals and administration of 3 clinics specializing in reproductive health, clinical diagnostic centers, specialized drug treatment center.

Sample formation. FGD participants were recruited using the snowball method. Healthcare professionals were recruited through official letters of support sent by research team of the Ministry of Health of Ukraine to Kyiv city hospitals specializing in pregnancy care listed above, as well as to the hospital, which represents the Kyiv City Drug Treatment Service. Women of reproductive age were recruited through recruiters.

Conducting FGD. The research team developed 2 separate FGD guides for women of reproductive age and health care workers. The guides were based on information obtained from a preliminary literature review, and a series of meetings were held to optimize the survey instrument. A total of three FGD were held via online sessions (Fig. 1).

Data collection and analysis. Focus group discussions were conducted using a standardized methodology, with pre-designed questions to guide the discussion. All sessions were audio-recorded to ensure the accuracy of data collection. Audio transcripts were made for further comparison and analyzed using deductive content analysis. MaxQDA and Excel programs were used for this purpose.

Transcript segments ranging from part of a phrase to a paragraph were assigned codes based on themes and subthemes identified by the management. Based on these codes, thematic groups were formed to connect transcript segments and individual topics by two reviewers.

Ethical aspects. The study protocol was approved by the Ethics Committee (protocol number IRB2024–133 from 24.09.2024). All participants

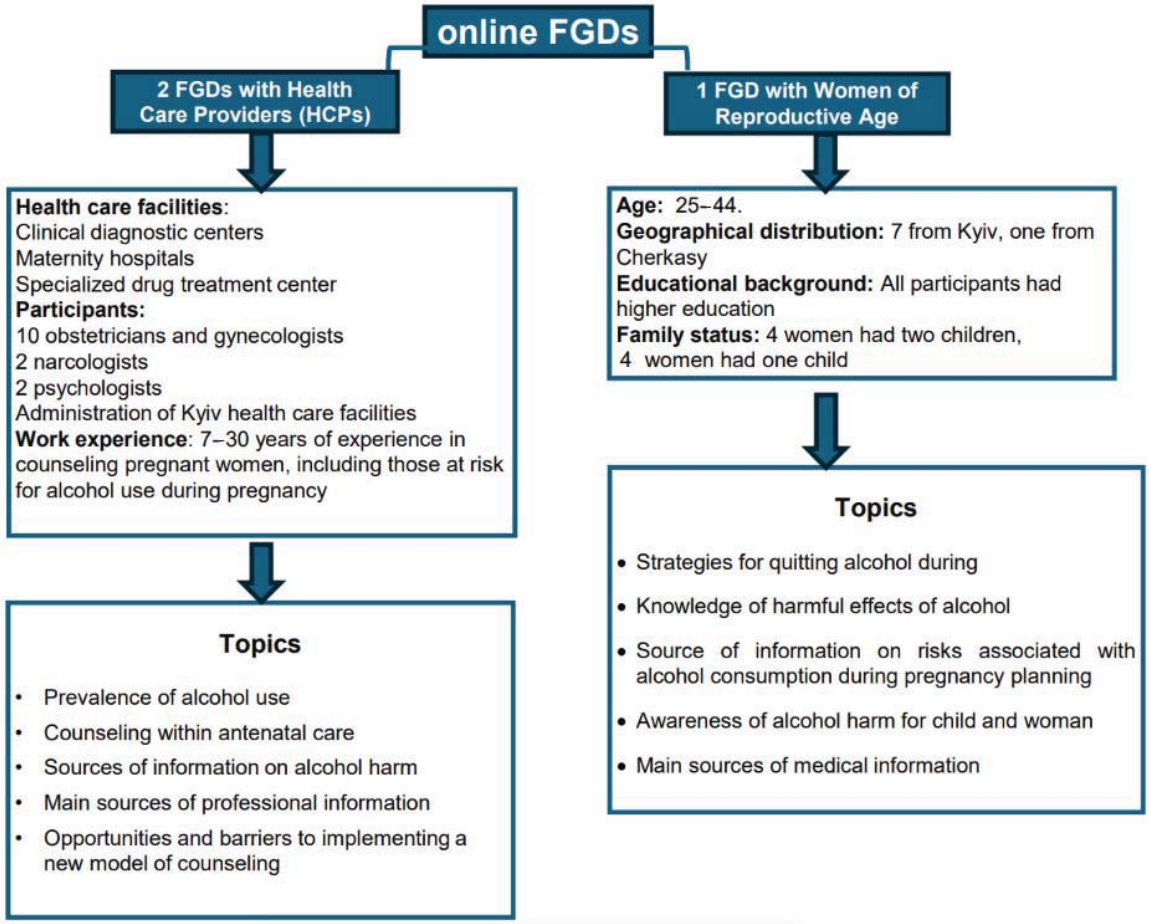


Fig. 1. Study design: socio-demographic characteristics of the participants and topics of the focus group discussion

provided informed consent to participate in the study, which confirmed their voluntary participation. The data obtained during the study were anonymized and used only for the purposes of scientific research.

Results of the study

Focus group discussions with healthcare professionals

During FGD we assessed the alcohol consumption patterns, counselling practices and communication, barriers among women to access health care services and sourse of professional information used in practice and their recommendation for establishing counselling model. Content analysis of FGD allowed us to identify the main themes and patterns in the participants' responses (Fig. 1).

Alcohol consumption patterns and risk factors. Healthcare professionals reported that while most women of reproductive age consume alcohol moderately, but certain factors – such as lower education levels – may contribute to inadequate awareness of alcohol-related harms:

«Women with a low level of education... do not always understand the dangers of alcohol, and it is difficult to communicate information about the risks associated with toxic substances to them».

During the FGD doctors expressed the opinion that most women drink alcohol in moderation and in general, alcohol-related disorders are less common among women than among men. Healthcare professionals noted that several factors can influence alcohol consumption among women, including social environment, cultural characteristics, and workload. Although the general secondary school curriculum includes a component on health education, particularly covering the topic of alcohol-related harm, one of the participants noted systemic gaps in health promotion within school-based education programs. Healthcare professionals indicated that some gaps exist in the programs of educational institutions covering alcohol-related harm. In the context of war-related stress, doctors suggested that alcohol use among women may increase as a coping mechanism.

Alcohol consumption during pregnancy. Healthcare professionals observed that many women re-

Table 1

Pattern of alcohol consumption according to experience of healthcare professionals

Type of consumption	Examples
Episodic/ritual drinking	Social drinking, usually stops during pregnancy
Excessive consumption	Heavy drinking due to stress, social pressure, or relaxation
Alcohol dependence	Addiction-like abuse, unable to stop even during pregnancy

Table 2

Pattern of alcohol consumption according to the experience of healthcare professionals

Category	Description	Limitations
Behavioral signs	Aggressive behavior, avoiding discussion, reluctance to answer alcohol-related questions.	Not all patients openly discuss their alcohol use.
Physical signs	Facial swelling, skin flushing, tremors.	Not always reliable; some individuals may lack visible signs
Diagnostic methods	Direct questions about alcohol use, laboratory tests (e.g., liver function tests).	Detailed history may reveal substance abuse even without physical signs.

duce or cease drinking upon learning about their pregnancy. Doctors highlight the low level of awareness among women of the alcohol harm for the fetus. Some women may struggle to change their habits or may lack sufficient information about the consequences of alcohol consumption during pregnancy. Cultural practices, particularly in regions with strong wine traditions, may promote continued use. One doctor observed:

«Girls who don't want to deny themselves pleasure... and they don't consider that this is abuse during pregnancy, and that it can somehow affect the fate of the developing fetus...»

Social pressure was identified as another risk factor, with some family members recommending alcohol for medicinal purposes, such as *«a little drink to relieve a headache»*. Healthcare professionals emphasized the lack of alternative coping strategies, such as physical activity or psychological support, among pregnant women.

Patterns of alcohol consumption. Doctors identified several patterns of alcohol consumption among women, summarized in Table 1 and 2.

Counselling practices and communication. While discussions about alcohol are integrated into broader antenatal counselling, conversations are often initiated by patients themselves. Healthcare professionals typically address alcohol use during the first antenatal visit and utilize screening tools like ASSIST to identify substance use. Trust and a non-judgmental environment were considered critical for effective counselling; yet, limited consultation time often restricted the depth of discussions. One healthcare professional described:

«...their own experience, for example, girlfriends or someone in their field of vision, some troubles, cases were with pregnancies, so they always clarify whether there is a risk of any complications when they, for example, drink alcohol or smoke, which causes complications during pregnancy».

Not all patients are ready to openly seek advice on this issue due to a lack of motivation or fear of stigmatization. Healthcare professionals stressed the importance of trustworthy communication. One doctor remarked: *«...to admit that you are pregnant and drinking alcohol requires strong motivation to overcome this barrier»*.

Counselling on alcohol use during pregnancy is usually provided as part of antenatal care and is based on the identified risk factors, but doctors are limited by the time of consultation. Moreover, healthcare professionals aim to allocate additional time to patient education and overall health care. Counselling sessions also covered tobacco use, human papillomavirus (HPV), obesity, and other conditions affecting the health of a pregnant woman and her child.

Healthcare professionals highlighted that health education visual materials (brochures, videos) and social media campaigns could enhance the effectiveness of alcohol-related counselling. They stressed the importance of mental health support and the need for early screening at the primary care: *«... healthier options, how to choose mental health, how to bring it to the desired state, that going to a psychiatrist, to a narcologist, to a psychologist should be the norm, not stigmatized»*.

Doctors emphasize the importance of correctly conveying information about the risks of alcohol

consumption during pregnancy, without intimidation or pressure on women.

Barriers to access to healthcare services. Healthcare providers reported that fear of disclosure to social services is a major barrier preventing women from seeking care. Distrust of healthcare professionals and fear of stigmatization further limit engagement, particularly among women with alcohol dependence. Doctors emphasized the need for integrated medical and social support to reduce barriers, build trust with women, and facilitate access to care.

Sources of professional information. Healthcare professionals highlighted the importance of multidisciplinary conferences and specialized training programs in strengthening competencies in addressing substance use disorders. They noted that addiction topics are often insufficiently covered in standard medical training. Practical sessions focusing on communication skills and trust building were considered particularly beneficial, helping providers feel more confident in counselling patients with alcohol-related issues. Short educational videos were also valued as quick and accessible sources of essential information for clinical practice.

Participants emphasized the role of search engines for international scientific resources, such as PubMed, in evidence-based counselling, particularly when materials present complex information in an accessible way, to facilitate communication with patients.

Perspectives on the proposed counselling model. The proposed model, based on AUDIT-C screening and brief interventions with potential referral to a specialist in case of high scores, was positively perceived. Providers valued the model's simplicity and saw potential for integration into routine care with proper training and a digital screening approach to gather data. Concerns were raised about ensuring successful patient referral and follow-up after the identification of at-risk individuals. Particularly valuable in the discussed model is the format of the multidisciplinary team of primary healthcare professionals and psychiatrist/addiction specialist with a clear algorithm for referring patients.

As one of the doctors noted: *«This is a pretty good algorithm. We involve a multidisciplinary team, we refer, we cooperate, but we cannot always be sure that the patient will see a narcologist. Still, it is an effective approach,»* said one of the doctors.

Another healthcare professional highlighted the importance of having printed educational materials:

«It would also be useful to have materials, such as checklists for patients, which would provide information about the harmful effects of alcohol and its consequences. This way, I can not only explain in words but also give the patient material that she can take with her and read over».

The algorithm was perceived as effective, although some doctors noted that pregnant women may not seek further care. Some healthcare professionals noted the importance of involvement of social workers and peer-to-peer programs to foster trust and increase patients' openness; patient overload is also considered a barrier.

Focus group discussions with women of reproductive age

Readiness to abstain from alcohol and coping strategies. Participants demonstrated a high readiness to abstain from alcohol during pregnancy. Individualized strategies for avoiding alcohol were described, often influenced by personal values, social environment, and prior experiences.

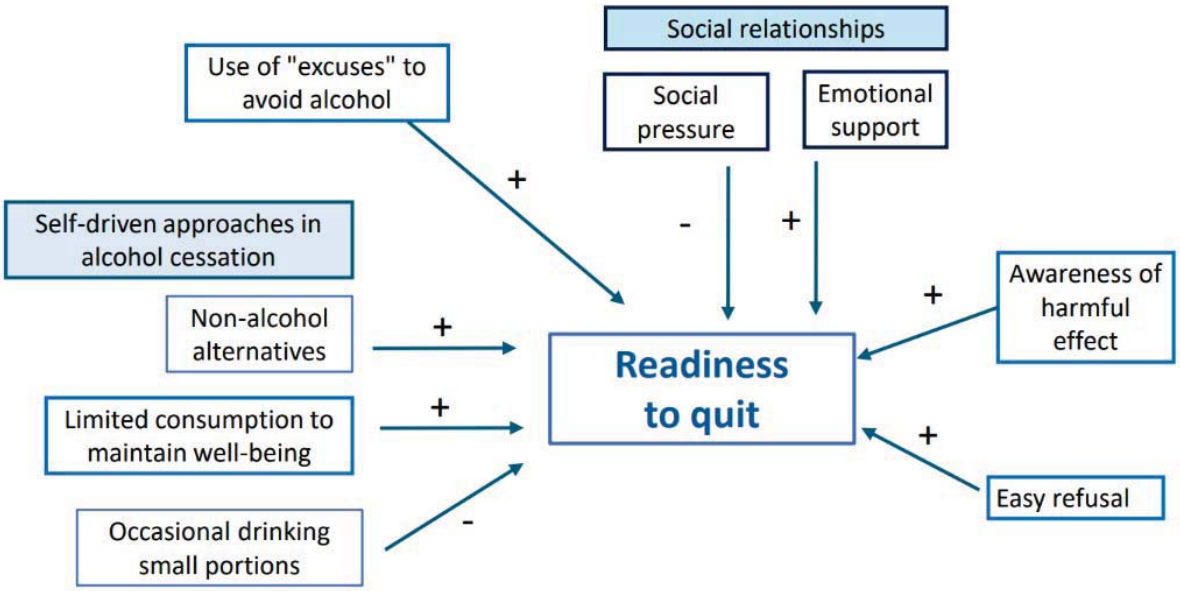
One of the respondents indicated: «*...if it's the first trimester, when no one can see or know [about pregnancy], then I always reply that I'm taking some kind of tr*eatments *or taking pills, and so at the moment I should limit myself in alcohol uptake.... If everyone already knows, everyone sees, they don't even offer me [alcoholic beverages]. And if they do offer me, I have no problem at all saying that I don't drink now, and I don't want to...*»

Participants described various individual strategies for quitting alcohol, as identified during the FGD (Fig. 2).

Age and psychological maturity were associated with increased confidence in refusing alcohol despite social pressure. One participant noted:

«We are at an age where we set our own boundaries, and if we say no, it's no....You can drink, smoke, it's your health. Everyone is responsible for themself... I feel better that way, so I don't want to do it now [drink alcohol]. That is, if they really start to go overboard, it can also be our last meeting...»

Awareness of alcohol harm and perceptions of alcohol use. Although women expressed strong disapproval of alcohol consumption during pregnancy, awareness of FAS was low. Most participants recognized the general risks of alcohol, but lacked detailed knowledge about its specific effects on fetal development. Many participants emphasized that alcohol consumption during pregnancy can have serious consequences for children, including physical and



Notes: plus (+) above arrow indicates the individual's facilitators in women's readiness to quit alcohol; minus (-) indicates barriers.

Fig. 2. Factors affecting individual perception: individual approach to alcohol consumption and readiness to quit

mental disabilities. One respondent shared a case from personal experience involving a woman whose child was born with disabilities due to systematic alcohol use, which strongly shaped her negative attitude toward drinking during pregnancy.

Women agreed that the first trimester is a critical period when alcohol consumption is unacceptable. However, despite awareness of alcohol's harmful effects, none of the participants had heard of FAS. They recognized that alcohol can impair the child's nervous system, speech development, and overall growth. Though some women questioned the harm of small amounts of red wine late in pregnancy, most believed there are no safe doses of alcohol during pregnancy. Two respondents considered (although with doubts) small amounts of red wine after the seventh month of pregnancy to be potentially acceptable. Opinions also varied regarding the type of alcohol: some perceived weaker drinks like red wine as less harmful, while others considered any alcohol, including beer or champagne, to be justified during pregnancy.

Women indicated social norms promoting alcohol use during celebrations and the use of alcohol as a coping mechanism for stress, particularly during periods of social instability such as wartime, as key reasons for alcohol consumption among women of reproductive age.

The motivation to abstain is primarily driven by concerns for child health and fear of adverse outcomes. Participants emphasized the importance of receiving clear and accessible information from healthcare providers.

«...if you are pregnant, the child is the first motivator that should put a block. When a woman is pregnant, any effect of alcohol on her body has even more serious consequences...».

Recommendations for preventing alcohol consumption during pregnancy

Based on the issues highlighted by the participants of FGD, we summarized the main factors affecting alcohol withdrawal in pregnant women (Fig. 3).

Social influence on alcohol consumption during pregnancy

Reaction to insistence on drinking alcohol. Women expressed a clear position on pressure from friends, relatives or colleagues to drink alcohol during pregnancy. Women noted that earlier in life, social pressure to consume alcohol was more significant. However, with age and changing social circles, participants reported greater autonomy in decision-making. Only 2 among 8 respondents actively discussed alcohol use during pregnancy with peers, although support from partners (e.g., mutual abstinence during pregnancy planning) was reported as influential.

«We had this happen to us. We were planning our first pregnancy, and it was my husband's initiative. He didn't drink for a year – well, six months for sure – while we were planning and trying. And I, of course, did not drink to support him either...».

Participants noted a general understanding that alcohol consumption during pregnancy is undesirable, which reduces the need for active discussions of this issue within social circles.

Sources of health information. Women identified several key sources of health information, with doctors and evidence-based online communities being the primary ones.

Most respondents say that the Internet is a convenient tool for obtaining information. However, they emphasize the importance of personal communication with a doctor to confirm information. Respondents also mention social media, such as Facebook, where you can find specialized communities that provide information from evidence-based doctors. One of the respondents shares his experience:

«After my child was born, I learned about evidence-based doctors. Evidence-based pediatricians and evidence-based doctors in general. Now I've joined a Facebook community called Evidence-Based Parents. There, people write their inquiries about health, children's health, and their own health. Only evidence-based doctors respond. I get a lot of information there, you can find the answers you need or ask questions for consultations.»

Participants reported encountering information about alcohol consumption during pregnancy primarily on alcohol product labels and in medical institutions, highlighting a lack of broader public information at the state level. Participants criticized the lack of visible, systematic public health campaigns addressing the risks of alcohol consumption during pregnancy. One respondent noted:

«I can say that the information that pregnant women should not drink alcohol was only on the labels of alcohol. I did not see any leaflets or posters anywhere else outside the antenatal clinic.»

Another respondent adds:

«Regarding alcohol, the only thing I see is on billboards or on alcohol packaging that excessive alcohol consumption can be harmful to health. But I have never seen anything that says it is dangerous during pregnancy.»

When discussing the importance of information about alcohol use during pregnancy, women noted that visualization of information is key. Visual materials and emotionally engaging communication (e.g., real-life stories) were identified as powerful tools for raising awareness. Participants advocated for systematic counselling on alcohol use during antenatal care visits.

Women advocated for mandatory counselling on alcohol use during antenatal visits and emphasized the importance of early information and systematic reminders about the risks of alcohol consumption. They also supported broader educational campaigns targeting young people as a preventive measure to reduce alcohol use. One respondent noted:

«Not everyone will consciously seek information about this. And so, when a pregnant woman is in contact mainly with a doctor, an obstetrician-gynecologist, they could take on this mission and remind her that if [actions are] so, the outcomes will be like this, if not, the consequence will be like that. Perhaps we should inform more through doctors. For some people, it will not be necessary, but for others it is important that the doctor emphasizes this and does not allow it...»

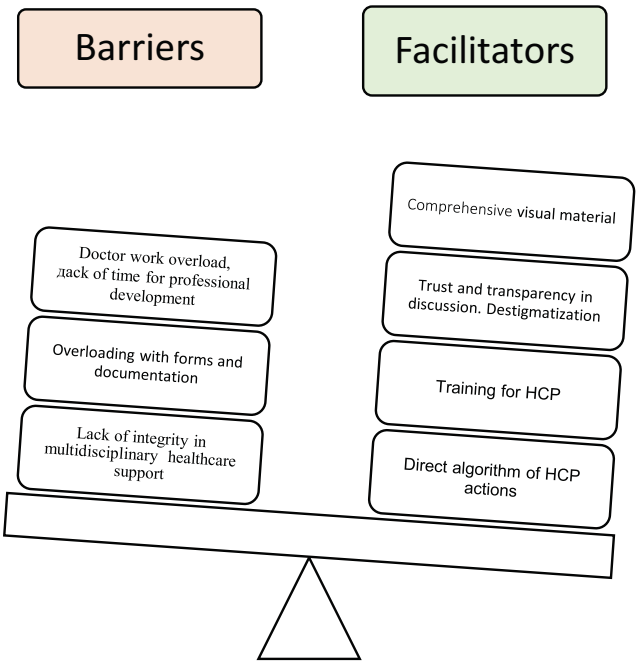


Fig. 3. Barriers and facilitators for implementation of the pilot AUDIT-C-based counselling model

Discussion

Focus group discussions with healthcare professionals and women of reproductive age allowed us to identify the main factors that have an impact on the decision of pregnant women to quit alcohol use before and during pregnancy. The study assessed the applicability of an AUDIT-C-based counselling model in routine antenatal care. Two main categories of factors emerged from the FGDs: (1) barriers such as stigma, limited awareness of fetal alcohol harm, time constraints for providers, and stress-related drinking, and (2) facilitators including strong ma-

ternal motivation, trustful communication with providers, and access to reliable information.

The primary reasonsfor alcohol use reported by women were consistent with previous studies showing that women are more likely to use alcohol to cope with negative affect and stress [3]. Healthcare professionals emphasized the importance of public awareness campaigns as well as specialized support programs for women with alcohol dependence.

We found that women expressed strong motivation to abstain from alcohol and a negative attitude toward drinking during pregnancy, which is in accordance with findings from previous studies [12,6]. However, awareness of FAS and alcohol-related harm remained low. These findings are consistent with J. Skagerström et al. (2015), who reported that despite high motivation, gaps in knowledge and inconsistent counselling limited behavioral change [13]. Our results underscore the need for educational interventions that address both the emotional and informational components of behavior change.

As of the AUDIT-C-based counselling model implementation, healthcare professionals perceived it positively, emphasizing its usability if supported by automation and staff training. These observations align with M.J. O'Connor et al. (2007), who found that integrating brief interventions into antenatal care can increase abstinence but requires adequate provider preparation [10]. The main barriers identified were limited consultation time, insufficient interviewing skills, and reluctance to discuss sensitive topics, which reflect previous findings from studies in the United States [5].

Stigma emerged as a central barrier to open communication. Women reported fear of judgment, while healthcare professionals acknowledged discomfort in discussing alcohol use findings consistent with L. Marcellus et al. (2016), who emphasized the need to address stigma within prenatal alcohol counselling. These findings highlight that beyond individual counselling, systemic actions are needed to destigmatize conversations about alcohol and substance use in reproductive health care [7].

Participants from all FGD expressed a preference for clear and visual communication materials, such as storytelling formats and traditional brochures. Participants also advocated for broader public health campaigns targeting young people, highlighting the need for early prevention strategies, – an approach that aligns with WHO recommendations [18] and could increase message retention and empathy. Particular attention should be paid to raising awareness among women about the dangers of alcohol during pregnancy and providing them with alternative methods of coping with stress during prenatal and antenatal consultations.

There is a clear need not only to continue developing but also to expand the implementation of counselling opportunities in reproductive health. Ensuring that this service is integrated into routine care will mitigate alcohol refusal and promote resilience among women.

This study has several limitations. Women with alcohol dependence were not included in the FGD, and their barriers and facilitators may differ from those of the general population. The relatively small sample size also limits the generalizability of results. Despite existing limitations, our study offers valuable insights into the development of a new alcohol prevention counselling model during pregnancy. Future research should pilot and evaluate the proposed AUDIT-C-based intervention across diverse healthcare settings, focusing on its scalability, acceptability, and clinical outcomes.

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