

## FETAL ALCOHOL SYNDROME PREVENTION: EFFECTIVENESS STUDY

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### Abstract

This study focuses on the psychological effects of brief interventions aimed at preventing Fetal Alcohol Syndrome (FAS). FAS is one of the most serious consequences of alcohol consumption by women during pregnancy. FAS is an incurable disease that manifests itself throughout the life of a person. The only way to prevent these violations is to deny a woman from drinking alcohol during pregnancy (Riley, 2004; Varavikova, Balachova, 2010).

**Methods and sample.** Accordingly, within the framework of the scientific project «Prevention of Fetal Alcohol Syndrome and neurodevelopmental disorders in Russian children» a prevention programme was developed. The main preventive measures of this program are: 1) Directed informing based on screening of the nature of alcohol consumption by women of childbearing age and the contraception style; 2) Dual-focused brief clinical and psychological intervention. Theoretically, the basis for developing the strategy and design of the intervention was the model of health beliefs (Rosenstock, 1974) and the model of the stages of change (DiClemente, Prochaska et al, 1991). The sample of the study consisted of 280 women of childbearing age. Respondents were recruited in 10 women's consultations in St. Petersburg and were randomly divided into experimental and control groups. All participants were screened, a basic interview and three subsequent interviews at 3, 6 and 12 months were conducted. With women of the experimental group, after a baseline interview, twice in the period from 2 weeks to one and a half months, specially trained OBGYN physicians carried out a dual-focused brief intervention. The study used methods developed by the FAS Prevention Study Group (Balachova et al, 2008).

**Results.** Dual-focused brief interventions and passive informing cause statistically significant positive changes in knowledge, attitudes towards alcohol consumption during pregnancy and the effect of alcohol on the fetus, as well as real amount of alcohol consumption. The dynamics of the changes in the studied groups was different: in the experimental group, under the influence of brief intervention, significant changes were detected during the first 3 months, further changes were smoother; in the control group changes took place smoothly during all 12 months. It has been revealed that the risk of an alcohol-exposed pregnancy influence is not related with individual psychological characteristics but is related with a number of socio-demographic characteristics: unemployed women with higher or secondary vocational education, unmarried or divorced are more likely to be at risk. According to the study results, brief intervention has proven effective.

**Keywords:** *Fetal alcohol syndrome (FAS), FASD, prevention, brief intervention, childbearing age women.*

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### 1. Introduction

Currently, brief interventions in connection with the solution of preventive tasks are becoming increasingly important in the practice of psychologists and other professionals. However, there is clearly insufficient attention paid to the study of their effectiveness. This study focuses on the psychological effects of brief interventions aimed at preventing Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Spectrum Disorders (FASD).

FAS is one of the most serious consequences of alcohol consumption by women during pregnancy. This is one of the main causes of mental retardation, behavioral disorders and problems in the learning process, as well as social disadaptation (Dikke, 2011; Balachova et al, 2012). The prevalence of FAS is from 2 to 7 per 1000 children born and exceeds the prevalence of such congenital disorders such as Down's syndrome, autism, etc. (Palchik, Legonkova, 2011). The rather high level of alcohol consumption by women, the erosion of gender differences in the degree of alcoholism and the nature of alcohol use (Shurygina, 2010; Roschina, 2012) do not only inflict damage to the physical and mental

health of women, but also have negative social consequences, increasing the number of divorces, orphans and delinquencies.

Fetal alcohol syndrome is an incurable disease that manifests itself throughout the life of a person. The only way to prevent these violations is to deny a woman from drinking alcohol during pregnancy (Riley, 2004; Varavikova, Balachova, 2010). Therefore, the development of programs aimed at preventing FAS is an important task of high social importance.

The FAS example clearly demonstrates the importance of prevention and the crucial role of psychological, behavioral factors and interventions to prevent even incurable disorders and the formation of the nation's health and mental capacity: all violations of the Fetal Alcohol Spectrum, including mental retardation, can be completely prevented if the mother does not drink alcohol while being pregnant.

## 2. Design, methods and sample

The methodology of preventive programs in the field of health involves conducting research aimed at identifying the problem, collecting data on problem behavior and characteristics of the specific group to which the intervention will be directed, and developing a new preventive program on this basis that is empirically tested (Varavikova, Balachova, 2010; Balachova, Volkova, Isurina, Palchik, Tsvetkova, Shapkaitz, 2012). Accordingly, within the framework of the scientific project «Prevention of Fetal Alcohol Syndrome and neurodevelopmental disorders in Russian children» a prevention program was developed. The St. Petersburg State University (Russia), the Nizhny Novgorod State Pedagogical University (Russia) and the University of Oklahoma Health Sciences Center (USA) took part in the project. The main preventive measures of this program are:

- 1) Directed informing based on screening of the nature of alcohol consumption by women of childbearing age and the contraception style.

- 2) Dual-focused brief clinical and psychological intervention.

Theoretically, the basis for developing the strategy and design of the intervention was the model of health beliefs (Rosenstock, 1974) and the model of the stages of change (DiClemente, Prochaska et al, 1991). Beliefs about personal risk and the expected consequences that determine readiness for action were considered as a mechanism for changing behavior. The results obtained at the previous stages of the study (Balachova et al, 2012) indicate the willingness of women to change their beliefs under the influence of information coming from significant sources. The most significant sources of information, according to the results of the research, are scientifically based information materials presented in an accessible form and the OBGYNs that determined the main elements of the prevention program – information brochures and brief interventions by an OBGYN physician.

The study of the effectiveness of brief interventions in the field of health requires uniformity in their implementation. Only the standard implementation of the intervention by all specialists can ensure the reliability of the results. Therefore, in this study special attention was paid to the training of physicians in the standard procedure of intervention and implementation of reliability criteria in the course of its implementation by specific physicians.

The sample of the study consisted of 280 women of childbearing age: 140 women entered the experimental group and 140 – the control group. The design of the study suggested the following selection criteria: childbearing age (18-44 years), absence of pregnancy at the time of the study beginning, the possibility of having children (absence of pathology of the reproductive function), absence of alcohol use problems, the presence of at least one unprotected sexual intercourse and the use of alcohol in any doses at least once in the last 90 days. Respondents were recruited in 10 women's consultations in St. Petersburg and were randomly divided into experimental and control groups. All participants were screened, a basic interview and three follow-up interviews at 3, 6 and 12 months were conducted. All women received information materials (a brochure) about the alcohol effects on the fetus and fetal alcohol syndrome. With women of the experimental group, after a baseline interview, twice in the period from 2 weeks to one and a half months, specially trained OBGYN physicians carried out a dual-focused brief intervention.

The study used methods developed by the FAS Prevention Study Group (Balachova et al, 2008): screening, «Audit» (WHO, 2001, adapted by Balachova, 2005), Calendar method, baseline interview, follow-up interviews at 3, 6 and 12 months.

### 3. Results and discussion

The results of the study showed that the majority of women of childbearing age (77%) do not have any knowledge about fetal alcohol syndrome, the causes of its occurrence and the possible consequences for the child. 89% of women believe that alcohol (especially strong) is harmful to the fetus. While only 69% of women believe that during pregnancy a woman should refrain from drinking alcohol, 28% of respondents consider it permissible to use alcohol in this period in small doses and 23% of women consider the use of red wine not only acceptable but also useful during pregnancy.

The women of the sample are characterized by a rather high level of alcohol consumption: 100% of the sample at least once in the last 90 days used alcohol at the risky level (4 or more doses at a time). On average, women use 3 standard doses at an average frequency of 1-2 times a week; 70% of women use 1-5 standard doses of alcohol at a time, 28% drink 6-10 standard doses, 3% of women have 11-15 doses. Women, who plan pregnancy, by the alcohol consumption level, do not differ from the general sample.

The level of knowledge about fetal alcohol syndrome in women of childbearing age increases at the end of the study (after 12 months since baseline interview) in both groups, however, participants who underwent a dual-focused brief intervention are more likely to correctly answer questions about the concept of FAS, the FAS-specific violations, and also about the causes of the syndrome.

Dual-focused brief interventions and passive informing cause positive changes in attitudes towards alcohol consumption during pregnancy and the effect of alcohol on the fetus: a statistically significantly larger number of women in both groups felt that alcohol consumption during pregnancy was unacceptable by the time the study ended. The dynamics of the changes in the studied groups was different: in the experimental group, under the influence of brief intervention, significant changes in the attitudes were detected during the first 3 months, further changes were smoother; in the control group changes in attitudes took place smoothly during all 12 months. In the experimental group, under the influence of intervention, there is also a more explicit rejection of the stereotype of the benefits of red wine.

The dynamics of the actual alcohol consumption by women of childbearing age under the influence of dual-focused brief intervention and passive informing indicates a significant decrease in the frequency of alcohol consumption (after 3, 6 and 12 months). While women who underwent brief interventions significantly lowered the level of alcohol use compared to women who did not undergo the procedure of intervention. A dual-focused brief intervention affects the risk of an alcohol-exposed pregnancy: initially the entire sample (100% of women) was at risk. After 3 months after brief intervention, significant differences were found between the experimental and control groups: 47% of the women in the experimental sample and 62% in the control group were at risk. After 6 months, the differences are found at the level of the statistical tendency (45% and 55%, respectively), and after 12 months no significant differences were revealed (46% and 49%, respectively), which indicates a faster effect achieved with the brief intervention method.

It has been revealed that the risk of an alcohol-exposed pregnancy is related with a number of socio-demographic characteristics: unemployed women with higher or secondary vocational education, unmarried or divorced are more likely to be at risk.

### 4. Conclusion

The main factor that influences the formation of attitudes for the refusal of drinking alcohol during pregnancy and the decrease in the level of real alcohol consumption is awareness of the impact of alcohol on the fetus and the health of women, which determines the main content of the prevention program: informing and brief intervention, motivating a change in attitudes and behavior.

Thus, the results of the study indicate the effectiveness of the brief intervention designed to prevent FAS and FASD.

The project supported by Grant Number R01AA016234 from the NIH/National Institute on Alcohol Abuse and Alcoholism and Fogarty International Center to T. Balachova at OUHSC. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Alcohol Abuse and Alcoholism or the National Institutes of Health.

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