



The Significance of Teratogenic Effect of Alcohol on the Fetus within the Educational Programs of Physicians and Its Practical Application

**Anait Yuryevna Marianian^{1*}, Natalya Vladimirovna Protopopova¹
and Lyubov Ilinichna Kolesnikova¹**

¹*Federal State Budgetary Scientific Institution, Scientific Centre for Family Health and Human Reproduction Problems, Irkutsk, Russia.*

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: The importance of the problem of drinking alcohol and further, negative consequences in the prenatal period and before planning the pregnancy is not understood sufficiently by the women as well as by the doctors. The goal of our research was to determine Russian specialists' current awareness regarding the problem of teratogenic effects of alcohol on the fetus and to illustrate the importance of introducing this knowledge into their educational process to the specialist.

Materials and Methods: To achieve this goal, an anonymous survey was conducted with 146 obstetrician-gynecologists (OG), 70 neonatologists (N), 56 pediatric psychiatrists (PP), 53 pediatricians (P), 46 pediatric neurologists (based at medical and prophylactic institutions in Eastern Siberia Irkutsk in Russia. The questionnaire consisted of 28 questions (<http://netfas.net/pro/>).

Results: The result of the study showed that most doctors were not sufficiently informed about the teratogenic effects of alcohol on the developing fetus, and in particular, its relation to FAS / FASD.

*Corresponding author: E-mail: anait_24@mail.ru;

It was established that neurologists were more aware in these matters with significant $p < 0.05$. However, obstetrician-gynecologists, who are the primary preventive link to prevent alcohol consumption in the prenatal period and in the period of planning pregnancy showed lesser knowledge than the neurologists in this regard.

Conclusions: Thus, this study concluded that it is necessary to the specialist and other researchers to pay attention in different medical and social spheres that the problem has really become quite urgent for the future generations also, these topics related to the problem of the effects of alcohol on the fetus should be introduced in the physicians' education curriculum. Physicians should pay special attention to pregnant women who were taking alcohol even in small doses, as there is no safe amount of alcohol during pregnancy.

Keywords: Pregnancy; fetal alcohol syndrome; awareness; neurologists; teratogenic effect.

1. INTRODUCTION

Healthcare workers recognized that different amount and type of drugs such as and, heroin, marijuana and other drugs and also alcohol could lead to the most severe fetal development disorders and irreversible birth defects in the child such as fetal alcohol syndrome (FAS) and fetal alcohol spectrum disorders (FASD) [1,2, 3,4].

The importance of the problem at the global level is confirmed by the WHO initiation of an international study on the prevalence of FAS / FASD and the perinatal effects of alcohol on the fetus in more than 10 countries [5].

The harm caused by alcohol is not limited to the health of the mother, but extends to the physical and psychological health of the child. [6,7,8,9, 10]. Maternal consumption of alcohol during pregnancy can lead to serious birth defects in the baby and restrict development [11,12-14].

The negative consequences of alcohol consumption in the prenatal period, as well as the importance and significance of this problem are not sufficiently understood specialists as well as by women [15]. Studies conducted in St. Petersburg, Nizhny Novgorod and the Nizhny Novgorod region showed that pregnant and non-pregnant women of reproductive age do not have the necessary information about the teratogenic effects of alcohol on the fetus, and also not provided with prohibitive warning for alcohol consumption during pregnancy. Many women believe that drinking a small amount of high-quality alcohol (in particular, dry red wine) "will not harm, but may even be useful" [1,15,2].

For the most part, obstetrician-gynecologists, pediatricians and physicians of other specialties that are not related directly to the treatment of alcoholism, do not have the skills of correct

discussion of the topic of alcohol consumption with women, do not have screening methods to identify risk groups, and do not have clear ideas about the criteria for identifying of these groups [16]. Fetal alcohol syndrome: curriculum structure and study guide for the educational and practical activities of medical workers and specialists in related healthcare sectors. - Oklahoma, 2008; Women who abuse alcohol: identifying of the group Oklahoma, USA – 2008 [17-19].

Thus, given the relevance of the problem, our study aimed to establish the importance of training physicians on this topic and the need to introduce specific preventive interventions into their education process that will help prevent the birth of children with pathologies associated with the teratogenic effect of alcohol and also prenatal alcohol exposure.

The goal of our research was to determine the awareness of physicians about the problem of teratogenic effects of alcohol on the fetus and the importance of introducing questions on this topic into their educational process and practical activities.

2. MATERIALS AND METHODS

The questionnaire has been distributed through email ids, social media and personal contact. The aim of the research was mentioned on the questionnaire and their personal information such as Designation, Affiliation, Education background, Experience years and address of the specialist has been collected. Each and Every filled questionnaire was given the code number and assessed. The name, age and sex of the specialist was taken as blinded and not collected. In order to determine the awareness of physicians about the problem of teratogenic effects of alcohol on the fetus, anonymous questionnaire was distributed

amongst 146 obstetrician-gynecologists (OG), 70 neonatologists (N), 56 pediatric psychiatrists (PP), 53 pediatricians (P), 46 pediatric neurologists (PN). The selection of groups of physicians was carried out on the basis of medical and prophylactic institutions in the city of Irkutsk, advanced training cycles, regional and district conferences. During the research two pediatricians refused to fill out the questionnaire and were excluded. Statistically significant differences in gender and age of doctors were not revealed.

To achieve this goal a questionnaire was used which consisted of 28 questions (Table 1) regarding the problem of teratogenic effects of alcohol on the fetus, in particular the FAS / FASD problem, and provided the opportunity to determine the level of knowledge of the doctor on this topic.

The questionnaire was developed by the FAS Prevention Research Group, 2008 of St. Petersburg State University with the financial support of the Centers for Disease Control and

Prevention (CDC), National Center for Birth Defects and Disabilities (NCBDDD) through an agreement with the Association of University Centers for Disabilities (AUCD Grants No.

AUCD RTOI 2005-999-01 and RTOI 2007-999-02 B. Bonner and T. Balashova, Health Sciences Center, University of Oklahoma (USA) (<http://netfas.net/pro/>).

Statistical processing of the research results was carried out using the software package STAT 10 StatSoftInc, USA (license holder - FSBSI SCFHHRP) using the Student t-test, Mann-Whitney methods. In the statistical analysis of the data, the differences of the compared indicators were considered significant at $p < 0.05$.

3. RESEARCH RESULTS

According to the results of the analysis of the data obtained, it was established the first two questions of the questionnaire revealed non significant statistical values (Tables 1, 2).

Table 1. Questionnaire to identify awareness of the teratogenic effects of alcohol on the fetus (FAS Prevention Research Group, <http://netfas.net/pro/>)

No. in sequence	Question	Correct answer
1	Is fetal alcohol syndrome less common than Down syndrome?	No
2	Should a woman completely refrain from drinking alcohol during pregnancy?	Yes
3	Does alcohol cause more severe fetal damage than drugs?	Yes
4	Is fetal alcohol syndrome incurable and lasts a lifetime?	Yes
5	Should a risk assessment of alcohol exposure during pregnancy be performed by a doctor with all women of childbearing age?	Yes
6	Is a universal measure of alcohol, designated as a single dose, approximately 100 ml of vodka?	No
7	The most sensitive question for assessing the risk associated with alcohol consumption is: the question of the frequency of drinking 4 or more doses of alcohol at a time (for example, in one evening).	Yes
8	Are screening tools effective in identifying women at increased risk of having children with FASD such as T-ACE?	TOCO (T-ACE) (Tolerance, Annoyance Cut Down Eye Opener)
9	If there is a risk of alcohol exposure to the fetus, is it necessary to refer a woman to a medical institution specializing in the treatment of alcohol problems?	No
10	Are the women who consume no more than 10 doses of alcohol per week related as women who «drink alcohol moderately (30ml per day)»?	No
11	Are the women who drink alcohol moderately (30 ml per day) related a	Yes

No. in sequence	Question	Correct answer
12	low-risk health outcome group? Are the pregnant women who «drink alcohol moderately(30 ml per day) » related as the group for low risk for health outcomes?	No
13	Tolerance increase, i.e. alcohol tolerance, manifesting in the ability to consume large doses of alcohol without getting drunk, is one of the symptoms of the formation of alcoholism?	Yes
14	Does the concentration of ethanol in a woman's blood reach a higher level than in a man's blood with the consumption of equivalent doses of alcohol?	Yes
15	Does taking vitamins prevent teratogenic effects of alcohol on the fetus during pregnancy?	No
16	The main disorders in the formation and functioning of the systems and organs of the fetus are caused by the product of alcohol processing - acetaldehyde?	Yes
17	Can the level of alcohol in the blood of the fetus be higher than in the blood of the mother when drinking alcohol by a pregnant woman?	Yes
18	Is the consumption of moderate doses of low-alcohol beverages such as beer or red wine safe during pregnancy?	No
19	Is the alcohol consumption during the last trimester of pregnancy safe because the baby's brain is already formed?	No
20	Is fetal alcohol syndrome characterized by flattening of the philtrum?	Yes
21	Is fetal alcohol syndrome characterized by a thin upper lip?	Yes
22	Are children with fetal alcohol syndrome characterized by low intelligence?	Yes
23	Are facial dysmorphic disorders typical for FAS occur only with FAS and are necessarily indicative of FAS?	No
24	Does timely diagnosis and proper case management of FAS / FASD prevent secondary disorders in the child?	Yes
25	Are case management and family patronage the main FAS / FASD care strategies?	Yes
26	Do the indicators of emotional and social development correspond to biological age in case of FASD?	No
27	In case of behavioral disorders in a child with FASD, should parents be sent to train the education skills?	Yes
28	If a mother abuses alcohol or otherwise harms the health of her unborn child, does the decision on assistance measures or involuntary hospitalization depend on existing legislation?	Yes

Concerning the third question, P statistically significantly more gave correct answers compared with OG ($p < 0.05$). When comparing the respondents' indicators on the fourth question statistically significant differences were obtained (OG and N ($p < 0.05$); OG and PP ($p < 0.05$); OG and PN ($p < 0.05$)). OG are less informed on this issue. It was noted that many doctors are not aware of the screening methods that are used to identify women with increased risk of having children with FAS and FASD (question 8). 10 (6.8%) OG, 16 (22.9%) N and 8 (14.3%) PP, 2 (3.8%) P, 10 (21.7%) PN answered positively to this question. When comparing the indicators of the respondents, statistically significant differences were obtained: OG and N, OG and PN, N and P ($p < 0.05$).

When asked about the fact that women who consume no more than 10 doses of alcohol per week do not belong to the category of women drinking alcohol "moderately", "risky" (question 10), only 54 (36.9%) OG, 32 (45.7%) N, 34 (60.7%) PP, 40 (75.4%) P, 28 (60.9%) PN. Statistically significant differences were obtained by comparing the indicators of OG and P ($p < 0.05$). Regarding the fact that women with moderate alcohol consumption are at a low risk of health outcomes (question 11), statistically significant differences were revealed when comparing OG and P, PP and P ($p < 0.05$). It was found that only 8 PP (14.3%) answered correctly the question that the pregnant women who consume moderately belong to the group of high

risk of health outcomes (12th question). Pediatricians (P) (83.0%) and pediatric neurologists (PN) (73.9%) are better aware of this problem. Statistically significant differences on this question were obtained by comparing the parameters of OG and PP, N and PP, PP and P, PP and PN ($p < 0.05$) (Table 2). PP and N answered this question better, which amounted to 92.9 and 88.5% respectively. Statistically significant differences were obtained by comparing the indicators of OG and N, OG and PP ($p < 0.05$).

All the respondents also answered approximately the same to the 17th, 18th, 19th questions regarding the risk of drinking in moderate doses of low-alcohol drinks during pregnancy. It was revealed that OG gave a lower percentage of correct answers. Statistically significant differences were obtained on the 17th question

when comparing the indicators of OG and PN, OG and P ($p < 0.05$).

It should be noted that, N, PP and PN are better oriented in matters relating to the FAS and FASD clinics. The 20th and 21st questions indicate which facial anomalies are characteristic of FAS. It has been shown that N and PN are better oriented in these matters; statistically significant differences were obtained when comparing the indicators of OG and N, N and P ($p < 0.05$). N also gave a larger number of correct answers to the 21st question, which amounted to 74.3%. The smallest number of correct answers was received according to the questionnaires of pediatricians (P). Only 12 doctors gave the correct answer, which amounted to 22.6%. On the 21st question, statistically significant differences were obtained when comparing the indicators of OG and N, N and P ($p < 0.05$).

Table 2. Assessment of physicians' awareness on teratogenic effects of alcohol on the fetus

No.	Indicators	OG ₁ n=146	N ₂ n=70	PP ₃ n=56	P ₄ n=53	PN ₅ n=46
1	2	3	4	5	6	7
1	n (%)	76 (52.1%)	3 (54.3%)	32 (57.1%)	40 (75.4%)	36 (78.3%)
	proportion	1.47	1.45	1.42	1.24	1.21
	95% CI	1.39-1.56	1.33-1.56	1.29-1.56	1.12-1.36	1.09-1.34
2	n (%)	90 (61.4%)	64 (91.4%)	54 (96.4%)	44 (83.0%)	44 (95.6%)
	proportion	1.38	1.08	1.04	1.2	1.04
	95% CI	1.30-1.46	1.02-1.15	0.99-1.1	1.06-1.27	0.98-1.11
3	n (%)	64 (43.8%)	50 (71.4%)	32 (57.1%)	40 (75.4%) ¹	28 (60.9%)
	proportion	1.56	1.28	1.42	1.25	1.39
	95% CI	1.48-1.64	1.18-1.39	1.29-1.56	1.13-1.36	1.24-1.53
4	n (%)	52 (35.6%)	52 (74.3%) ¹	44 (78.5%) ¹	40 (75.4%) ¹	32 (69.6%) ¹
	proportion	1.64	1.25	1.21	1.25	1.30
	95% CI	1.56-1.72	1.15-1.36	1.10-1.33	1.13-1.37	1.17-1.44
5	n (%)	100 (68.5%)	68 (97.1%)	50 (89.3%)	48 (90.6%)	42 (91.3%)
	proportion	1.31	1.03	1.11	1.09	1.09
	95% CI	1.23-1.39	0.99-1.07	1.02-1.19	1.01-1.18	1.00-1.17
6	n (%)	46 (31.5%)	22 (31.4%)	16 (28.6%)	28 (52.8%)	22 (47.8%)
	proportion	1.68	1.68	1.71	1.47	1.52
	95% CI	1.61-1.76	1.57-1.79	1.59-1.84	1.33-1.61	1.37-1.67
7	n (%)	62 (39.7%)	44 (62.9%)	40 (71.4%)	16 (30.2%) ^{2,3}	32 (69.6%)
	proportion	1.58	1.37	1.29	1.69	1.30
	95% CI	1.49-1.66	1.26-1.49	1.16-1.41	1.57-1.83	1.67-1.44
8	n (%)	10 (6.8%)	16 (22.9%) ¹	8 (14.3%)	2 (3.8%) ²	10 (21.7%) ^{1,4}
	proportion	1.93	1.77	1.86	1.96	1.78
	95% CI	1.89-1.97	1.67-1.87	1.76-1.95	1.91-2.02	1.66-1.91
9	n (%)	28 (19.7%)	10 (14.3%)	10 (17.9%)	8 (15.1%)	8 (17.4%)
	proportion	1.81	1.86	1.82	1.85	1.83
	95% CI	1.74-1.87	1.77-1.94	1.72-1.92	1.75-1.95	1.71-1.94
10	n (%)	54 (36.9%)	32 (45.7%)	34 (60.7%)	40 (75.4%) ¹	28 (60.9%)
	proportion	1.63	1.54	1.39	1.25	1.39
	95% CI	1.55-1.71	1.42-1.66	1.26-1.52	1.13-1.37	1.24-1.54
11	n (%)	34 (23.3%)	26 (37.1%)	12 (21.4%)	28 (52.8%) ^{1,3}	16 (34.8%)

No.	Indicators	OG ₁ n=146	N ₂ n=70	PP ₃ n=56	P ₄ n=53	PN ₅ n=46
1	2	3	4	5	6	7
12	proportion	1.77	1.62	1.78	1.47	1.65
	95% CI	1.69-1.84	1.51-1.74	1.67-1.89	1.33-1.61	1.51-1.79
	n (%)	96 (65.8%)	54 (77.1%)	8 (14.3%) ^{1,2}	44 (83.0%) ³	34 (73.9%) ³
13	proportion	1.34	1.23	1.85	1.17	1.26
	95% CI	1.26-1.42	1.12-1.33	1.76-1.95	1.07-1.27	1.13-1.39
	n (%)	80 (54.8%)	62 (88.5%) ¹	52 (92.9%) ¹	28 (52.8%)	32 (69.6%)
14	proportion	1.45	1.11	1.07	1.47	1.30
	95% CI	1.37-1.54	1.04-1.19	1.00-1.14	1.33-1.61	1.17-1.44
	n (%)	84 (57.5%)	62 (88.5%)	38 (67.9%)	48 (90.6%)	34 (73.9%)
15	proportion	1.42	1.11	1.32	1.09	1.26
	95% CI	1.34-1.51	1.04-1.19	1.19-1.45	1.01-1.17	1.13-1.39
	n (%)	94 (64.4%)	46 (65.7%)	44 (78.5%)	32 (60.4%)	26 (56.5%)
16	proportion	1.35	1.34	1.21	1.39	1.43
	95% CI	1.28-1.43	1.23-1.46	1.10-1.33	1.26-1.53	1.29-1.58
	n (%)	92 (63.0%)	62 (88.5%)	56 (100%)	48 (90.6%)	40 (86.9%)
17	proportion	1.37	1.11	1.00	1.09	1.13
	95% CI	1.29-1.45	1.04-1.19	-	1.01-1.18	1.03-1.23
	n (%)	64 (43.8%)	48 (68.5%)	38 (67.9%)	44 (83.0%) ¹	38 (82.6%) ¹
18	proportion	1.56	1.31	1.32	1.17	1.17
	95% CI	1.48-1.64	1.20-1.43	1.19-1.45	1.07-1.27	1.06-1.29
	n (%)	90 (61.4%)	48 (68.5%)	46 (82.1%)	36 (67.9%)	38 (82.6%)
19	proportion	1.38	1.31	1.18	1.32	1.17
	95% CI	1.30-1.46	1.20-1.43	1.08-1.28	1.19-1.45	1.06-1.28
	n (%)	96 (65.8%)	54 (77.1%)	50 (89.3%)	44 (83.0%)	40 (86.9%)
20	proportion	1.34	1.22	1.10	1.17	1.13
	95% CI	1.26-1.42	1.13-1.33	1.02-1.19	1.07-1.27	1.03-1.23
	n (%)	46 (31.5%)	52 (74.3%) ¹	30 (53.6%)	20 (37.7%) ²	26 (56.5%)
21	proportion	1.68	1.26	1.46	1.62	1.43
	95% CI	1.61-1.76	1.15-1.36	1.32-1.59	1.49-1.76	1.29-1.58
	n (%)	42 (28.8%)	52 (74.3%) ¹	26 (46.4%)	12 (22.6%) ²	24 (52.1%)
22	proportion	1.71	1.25	1.54	1.77	1.48
	95% CI	1.64-1.79	1.52-1.36	1.40-1.67	1.66-1.89	1.32-1.63
	n (%)	70 (47.9%)	16 (22.9%) ¹	52 (92.9%) ²	28 (52.8%) ²	44 (95.6%) ^{1,2}
23	proportion	1.52	1.77	1.07	1.47	1.04
	95% CI	1.44-1.60	1.67-1.87	1.00-1.14	1.33-1.61	0.98-1.10
	n (%)	78 (53.4%)	50 (71.4%)	36 (64.3%)	32 (60.4%)	32 (69.6%)
24	proportion	1.47	1.29	1.36	1.39	1.30
	95% CI	1.38-1.55	1.18-1.39	1.23-1.49	1.26-1.53	1.17-1.44
	n (%)	56 (38.4%)	40 (57.1%)	36 (64.3%)	12 (22.6%) ^{2,3}	34 (73.9%) ^{1,4}
25	proportion	1.62	1.43	1.36	1.77	1.26
	95% CI	1.54-1.69	1.31-1.55	1.23-1.49	1.66-1.89	1.13-1.39
	n (%)	80 (54.8%)	56 (80.0%)	38 (67.9%)	48 (90.6%) ¹	34 (73.9%)
26	proportion	1.45	1.20	1.32	1.09	1.26
	95% CI	1.37-1.53	1.10-1.29	1.19-1.45	1.01-1.18	1.13-1.39
	n (%)	84 (57.5%)	54 (77.1%)	54 (96.4%)	36 (67.9%)	40 (86.9%)
27	proportion	1.42	1.23	1.04	1.32	1.13
	95% CI	1.34-1.51	1.13-1.33	0.99-1.09	1.19-1.45	1.03-1.23
	n (%)	42 (28.8%)	14 (20.0%)	38 (67.9%) ²	21 (39.6%)	26 (56.5%) ^{1,2}
28	proportion	1.71	1.80	1.32	1.60	1.43
	95% CI	1.64-1.79	1.70-1.89	1.19-1.44	1.47-1.74	1.29-1.58
	n (%)	46 (54.8%)	46 (65.7%)	46 (82.1%)	44 (83.0%)	34 (73.9%)
	proportion	1.45	1.34	1.18	1.17	1.26
	95% CI	1.37-1.53	1.23-1.46	1.08-1.28	1.07-1.27	1.13-1.39

Notes: 95% Confidence interval (95% CI)

The superscripts 1-4 are comparable groups of physicians.

The fact that low intelligence is characteristic of children with FAS (the 22nd question) is known by almost every PP and PN. On the 22nd question, statistically significant differences were also obtained when comparing OG and N, OG and PP, OG and PN, N and PP, N and P, N and PN ($p < 0.05$).

Fifty Six 38.4% OG, 40 (57.1%) N, 36 (64.3%) PP, 12 (22.6%) P and 34 (73.9%) PN know that timely diagnosis and proper case management of FAS and FASD prevent secondary disorders in the child, and do not allow the child with FAS to "make good progress" normally in a regular school (question 24). It can be seen from the above that PN answered this question better. An insufficient level of knowledge was shown by pediatricians (P). Statistically significant differences on this issue were obtained by comparing the indicators of OG and PN, N and P, PP and P, P and PN ($p < 0.05$). The results showed the N specialist showed higher level of knowledge in this prospectus. as compared with other specialist.

To the 25th question ("Are case management and family patronage the main FAS / FASD care strategies?"), the correct answer was given by 80 (54.8%) OG, 56 (80.0%) N, 38 (67.9%) PP, 48 (90.6 %) P and 34 (73.9%) PN. Statistically significant differences were obtained by comparing the indicators of OG and P ($p < 0.05$).

The 27th question shows that in case of behavioral disorders of a child with FASD, it is necessary to educate parents on upbringing methods, and not to send them to hypnosis or play therapy. The data obtained show that almost all doctors are not aware sufficiently of this issue. Statistically significant differences were obtained by comparing the indicators of OG and PN, N and PP, N and PN ($p < 0.05$).

It has been shown that many doctors OG, PN, N, P and PP) are insufficiently aware in matters relating to the teratogenic effect of alcohol on the fetus, in particular the development of FAS / FASD.

4. DISCUSSION

Analyzing the results of the survey and the available world data, it is established how important it is to attract the attention of

specialists and researchers of different medical and social profiles to a problem so important for the well-being of future generations of our country and the whole world.

The training of obstetrician-gynecologists, narcologists, and other specialists working with women with alcohol dependence, women of reproductive age and pregnant women with strategies for screening risk factors (alcoholization of sexually active women in the absence of reliable contraception, the presence of a child with FAS / FASN) and of specific prophylactic interventions is extremely important to prevent the complications [16]. Fetal alcohol syndrome: curriculum structure as well as a training manual for the educational and practical activities of medical workers and specialists in related sectors of Health.

It was established that obstetrician-gynecologists, who are the primary prophylactic link in preventing the alcohol consumption in the prenatal period and when planning pregnancy, are less aware of these issues.

Thus, informing the medical workers about the dire consequences of alcohol exposure on the fetus, teaching the doctors of skills for the diagnosis of FAS and FASD, and a wide range of specialists in providing targeted assistance to people with FASD and their families is an important and extremely necessary step for Russia.

According to the results of our research it was revealed that neurologists are more aware of these issues, obstetrician-gynecologists, who are the primary link in the prevention of alcohol use in the prenatal period and when planning pregnancy are less aware. The results of a study conducted by T.N. Balashova et al., 2007 in antenatal clinics showed that doctors, especially obstetrician-gynecologists, are the most significant source of information about health and pregnancy for women. Women tend to follow their advice and trust the obstetrician-gynecologist to a greater extent comparing the other sources of information such as the media (mass media), specialized literature, advertising, relatives and friends. It is significant that 75% of women who stopped drinking alcohol after they found out about pregnancy reported that their decision was influenced by the obstetrician-gynecologist [2].

It should be noted that if the doctor will have the information about the effects of alcohol on the fetus, screen patients for possible alcohol consumption, the population will also receive proper and competent information about the dangers of alcohol during the pregnancy. This will help in preventing the birth of children with lifelong disorders that occur under the influence of alcohol, which do not go away with age, and are the main cause of mental development disorders.

5. CONCLUSION

The alcohol use, even in small doses, during pregnancy can be extremely dangerous during pregnancy and for newborns health, leads to intellectual disorders and inborn fetus defects.

It is necessary to pay and attract attention of specialists and researchers in different medical and social spheres that the problem has really become quite urgent for the future generations, because every year more and more newborns with various health and mental defects appear. Specialists and researchers in the medical and social fields must prevent pregnant women from using any amount of alcohol.

CONSENT AND ETHICAL APPROVAL

The work performed did not infringe upon the rights of the respondents and was carried out with their prior consent on the basis of order of the Ministry of Health of the Russian Federation No. 266 dated 06/19/2003. This study was approved by the ethics committee of Scientific Centre for Family Health and Human Reproduction Problems» (FSBSI SCFHHRP).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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