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Zagrożenia zdrowia płodów i noworodków wynikające z palenia papierosów przez ich matki w okresie ciąży

Streszczenie

Wstęp. Palenie papierosów jest najczęściej spotykanym typem uzależnienia, obserwowanym również u kobiet w okresie przedkoncepcyjnym oraz w ciąży.

Cel. W pracy podjęto próbę ukazania postaw kobiet ciężarnych wobec palenia papierosów oraz związanych z tym zagrożeń dla płodu i noworodka.

Materiał i metody. Badania przeprowadzono w oparciu o autorski kwestionariusz ankiety i analizę dokumentacji medycznej. Badaniami objęto 200 kobiet i ich dzieci z oddziałów położniczo-noworodkowych trzech lubelskich szpitali.

Wyniki. W badanej grupie większość kobiet nigdy nie paliła papierosów. Pozostałe przyznały się do tego nałogu, w tym 57,1% kontynuowało palenie w okresie ciąży, a 42,9% zaprzestało. Palenie papierosów podczas ciąży statystycznie uzależnione było od stanu cywilnego, wykształcenia, pracy zawodowej oraz dochodów miesięcznych na jednego członka rodziny. Palaczkami istotnie częściej były kobiety stanu wolnego, niepracujące, posiadające niski dochód oraz zawodowe wykształcenie. Natomiast wiek oraz miejsce zamieszkania nie miały w tej kwestii znaczenia. Analiza statystyczna zebranego materiału wykazała istnienie związku między opiniami kobiet odnośnie istnienia ochrony płodu przed działaniem dymu tytoniowego przez łożysko a paleniem, bądź nie, papierosów przez ciężarne. Istotnie częściej fakt ten potwierdzały osoby palące. Osoby palące w okresie ciąży istotnie częściej uważały, że nikotynizm ciężarnych nie ma wpływu na późniejsze powstanie chorób u dzieci.

Wnioski. Palenie papierosów przez kobiety w okresie ciąży jest dość powszechne i związane jest z ich stanem cywilnym, wykształceniem, pracą zawodową oraz dochodami miesięcznymi przypadającymi na jednego domownika. Kobiety palące w okresie ciąży istotnie częściej niż niepalące uważają, że łożysko chroni dziecko przed skutkami dymu tytoniowego oraz negują istnienie związku między paleniem papierosów a występowaniem chorób u dzieci.

Słowa kluczowe: postawy kobiet ciężarnych, palenie, zagrożenie dla płodów i noworodków.

Pregnant women's attitudes toward smoking posing danger to fetuses and newborns

Abstract

Introduction. Smoking cigarettes is the most common addiction, also observed in women before and during pregnancy.

Aim. This study presents the attitudes of pregnant women towards smoking and the related risks to the foetus and the newborn.

Material and methods. The study was based on the author's questionnaire and analysis of medical records. It was conducted in obstetric-neonatal units of three hospitals in Lublin, from July to September 2010.

Results. In the observed group, 64.5% women never smoked cigarettes. The remaining 35.5% admitted to the habit. Of the latter group 57.1% continued smoking during pregnancy, and 30 (42.9%) stopped. Cigarette smoking during pregnancy was statistically dependent ($p < 0.01$) on marital status, education, profession and monthly family income per capita of the respondents. Smokers were significantly more often unmarried women, who did not work, with low income and vocational education, whereas age and the place of residence had no significance in this regard. Statistical analysis proved the existence of the correlation between women's opinion on the role of the placenta in the protection of the foetus against tobacco smoke and smoking or not by the pregnant women. Significantly more often ($p = 0.000000$) that was confirmed by the smokers. The collected data show that women smoking during pregnancy significantly more often ($p = 0.000000$) believed that smoking while pregnant had no effect on the subsequent development of diseases in children.

Conclusion. Smoking during pregnancy is relatively common and it is related to women's marital status, education, profession and monthly income per household member. Women smoking during pregnancy, significantly more often than non-smokers, believe that the placenta protects the child against the effects of tobacco smoke and deny the existence of any link between smoking and the occurrence of diseases in children.

Keywords: pregnant women's attitudes, smoking, danger to fetuses and newborns.

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INTRODUCTION

Smoking cigarettes is the most common addiction, unfortunately, also observed in women before and during pregnancy. The number of active and passive smokers among pregnant women in Poland (about 5 million), and the negative impact of smoking on the foetus development demonstrates the social nature of the problem [1].

Nicotine addiction is harmful for pregnant women as it creates the increased risk of complications of pregnancy and depends mainly on:

- number of cigarettes smoked daily,
- type of cigarettes smoked,
- age and time at which a woman started smoking,
- time of exposure of the pregnant to the tobacco smoke inhaled passively [2,3].

AIM

This study attempts at presenting the attitudes of pregnant women towards smoking and the risk smoking poses to the foetus and the newborn.

MATERIAL AND METHODS

The following investigation techniques have been applied in the research process: poll research and medical records analysis. Investigation tools applied: self-designed three-part poll questionnaire. The first part contained questions concerning age, marital status, place of residence, education, professional life, monthly income, and basic information about the course of the current pregnancy. The second one concerned smoking during pregnancy and the knowledge women have on its harmful effects. The third part, based on the analysis of medical records, contained information about the newborn (sex, birth weight, head circumference and chest and body length, congenital malformations and the Apgar score).

The study was conducted in obstetric-neonatal units of three hospitals in Lublin, from July to September 2010. The pilot study had been carried out beforehand, which allowed to verify the questions used in our investigation tool. The study group consisted of 200 women and their children, patients of neonatal units.

The obtained study results were subjected to statistical analysis. The analysed parameters, measured on the nominal scale, were determined according to the number and percentage. To detect existing differences or dependence between analysed qualitative features homogeneity χ^2 or independence χ^2 tests were employed. Conclusive error of 5% was assumed and a significance level connected with it $p < 0.05$; indicating statistically significant differences or relationship. STATISTICA V.6.1 computer programme (Stat Soft, Poland) was used for carrying the statistical analyses [4].

RESULTS

The age of the respondents ranged from 18 to 38. 126 women (63.0%) were at the age of 30 or younger, whereas 74 (37.0%) were older. There were 162 women married (81.0%) and 38 (19.0%) were single. As for the place of residence 101 (50.5%) came from towns, and 99 (49.5%)

from the country. The educational level of respondents varied as well – 96 (48.0%) had university education, 62 (31.0%) secondary and 42 (21.0%) had elementary or vocational education. There were 99 (49.5%) primiparae, and 101 (50.5%) multiparae.

Data on smoking during pregnancy are included in Figure 1.

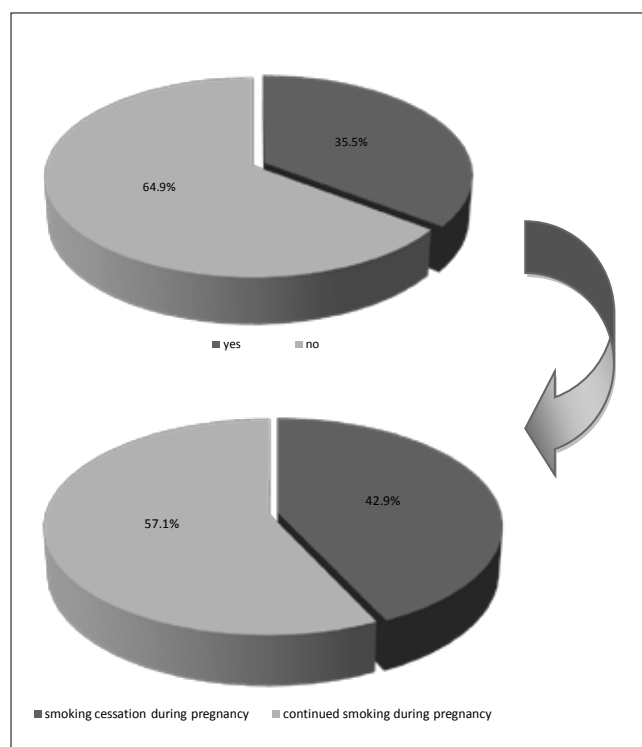


FIGURE 1. Cigarette smoking during pregnancy by the respondents.

In the observed group, 129 women (64.5%) never smoked cigarettes. The remaining 71 (35.5%) admitted to the habit. Of the latter group 41 (57.1%) continued smoking during pregnancy, and 30 (42.9%) stopped.

Further data on this issue, depending on demographic factors, are presented in Table 1.

Cigarette smoking during pregnancy was statistically dependent on marital status ($p=0.000000$), education ($p=0.000000$), profession ($p=0.000001$) and monthly family income per capita ($p=0.000000$) of the respondents. Smokers were significantly more often unmarried women, who did not work, with low income and vocational education, whereas age ($p=0.254225$) and the place of residence ($p=0.528392$) had no significance in this regard.

Among pregnant smokers, the vast majority (31-75.6%) smoked over 10 cigarettes a day, and 10 (24.4%) less than 10 pieces a day.

In the questionnaire respondents were also asked about the limit on the number of cigarettes smoked during pregnancy. The number of cigarettes smoked during pregnancy decreased in 34 (82.9%) women. In the case of the remaining seven (17.1%) it did not change.

The respondents were asked whether they believed the placenta protecting the foetus from the harmful effects of the substances contained in tobacco smoke and 113 women (56.5%) thought that the placenta did not protect the developing foetus against the harmful effects of smoke, 34 (17.0%) thought otherwise, and 53 (26.5%) had no opinion on the issue.

Table 2 presents the results concerning the relationship between women's opinion on the placenta role in the foetus protection against smoke and active smoking during pregnancy.

Statistical analysis proved the existence of the correlation between women's opinion on the role of the placenta in the protection of the foetus against tobacco smoke

and smoking or not by the pregnant woman. Significantly more often ($p=0.000000$) that was confirmed by the smokers.

The data shows that 137 respondents (68.5%) answered that smoking influenced the risk of subsequent diseases resulting from smoking during pregnancy, 24 (12.0%) claimed otherwise, 39 (19.5%) did not know.

TABLE 1. Smoking during pregnancy and demographic factors.

Demographic factors		Smoking during pregnancy			
		Yes n=41; 20.5%		No n=159; 79.5%	
		n	%	n	%
Age	To 30 years of age n=126; 53.0%	29	70.7	97	61.0
	Over 30 years of age n=74; 37.0%	12	29.3	62	39.0
Significance $\chi^2=1,29995$, df=1, $p=0.254225$					
Marital status	Married n=162; 81.0%	19	46.3	143	89.9
	Single n=38; 19.0%	22	53.7	16	10.1
Significance $\chi^2=41,2210$, df=1, $p=0.000000$					
Place of living	Village n=99; 49.5%	22	53,7	77	48.4
	Town n=101; 50.5%	19	46,3	82	51.6
Significance $\chi^2=0.397486$, df=1, $p=0.52839$					
Level of education	Elementary n=15; 7.5%	8	19.5	7	4.4
	Secondary vocational n=27; 13.5%	16	39.0	11	6.9
	Higher n=62; 31.0%	12	29.3	50	31,4
	University n=96; 48.0%	5	12.2	91	57.2
Significance $\chi^2=47.6993$, df=3, $p=0.000000$					
Employment during pregnancy	No n=80; 40.0%	30	73.2	50	31.4
	Yes n=120; 60.0%	11	26,8	109	68.6
Significance $\chi^2=23.7136$. df=1, $p=0.000001$					
Monthly family income per capita	Below 504 PLN/person n=81; 40.5%	32	78.0	49	30.8
	505-1000 PLN/person n=70; 35.5%	6	14.6	64	40.2
	Over 1000PLN/person n=49; 39.0%	3	7.3	46	29.0
Significance $\chi^2=30.3433$, df=2, $p=0.000000$					

TABLE 2. Women's opinions on the protection of the foetus from exposure to tobacco smoke through the placenta and smoking during pregnancy.

The placenta and its role in protecting the foetus against tobacco smoke	Active smoking during pregnancy n=200; 100.0%			
	Yes n= 41; 20.5%		No n= 159; 79.5%	
	n	%	n	%
Yes n=34; 17,0%	16	39.0	18	11.3
No n=113; 56.5%	10	24.4	103	64.8
I do not know n=53; 26.5%	15	36.6	38	23.9
Significance $\chi^2=27, 5301$, $p=0.000000$				

TABLE 3. Women's opinions on the impact of tobacco smoking during pregnancy on subsequent emergence of diseases in children and active smoking during pregnancy.

Effect of tobacco smoking during pregnancy on subsequent emergence of diseases in children n=200;100.0%	Active smoking during pregnancy n=200;100%			
	Yes n=41; 20.5%		No n=159; 79.5%	
	n	%	n	%
No n=24; 12.5%	12	29.3	12	7.5
Yes n=137; 68.5%	10	24.4	127	79.9
I do not know n=39; 19.5%	19	46.3	20	12.6
significance $\chi^2=49.6275$, df=2, p=0.000000				

Table 3 shows the relationship between the opinions on whether smoking during pregnancy results in subsequent development of diseases in children and the respondents' active smoking.

The collected data show that women smoking during pregnancy significantly more often ($p=0.000000$) believed that smoking while pregnant had no effect on the subsequent emergence of diseases in children.

In the survey, the respondents were asked whether arguments about the harmful effects of tobacco smoke on children's health would prompt them to abandon addiction during pregnancy and 43 women (60.6%) responded that they would be willing to give up smoking, 4 (5.7%) would not, and 24 (33.8%) did not know whether such arguments would persuade them to quit.

DISCUSSION

Smoking is one of the most common addictions in Poland. Conducting anti-smoking campaigns and the existing ban on smoking in public places did not cause a significant decrease in the percentage of smokers [5]. The study group consisted of 200 women and their newborns. The women were divided into 3 sub-groups: non-smokers, smokers, and those exposed to environmental tobacco smoke during pregnancy. The results of this study showed that one fifth of the entire group were smokers. The analysis of the respondents' statements concerning smoking both before and during pregnancy showed a slight decrease in the percentage of smokers. Seventy one women had smoked before their pregnancy was diagnosed compared to 41 who also smoked while pregnant. Similar results were obtained by Crozier and al. [6], where the percentage of women smoking while pregnant was about 20.5, and was very low for those who gave smoking during pregnancy. Many authors [6-9] reported that smokers did not give up the habit while pregnant. Our study arrived at similar results. There were respondents who continued smoking after being diagnosed pregnant. It may seem comforting that they limited the number of cigarettes or smoked occasionally. Most women smokers declared that the number of cigarettes smoked during pregnancy decreased. However, it is still a worrying phenomenon, because, as the data from the literature show, limiting smoking is not enough to level the harmful effects of the nicotine on the foetus. The majority of factors, both external and internal, the exposition to the

ingredients of tobacco smoke being one of them [2,3,7,10,11], have a detrimental effect on the foetus. They may lead to growth and development disorders when it is growing rapidly. The presence of hyperbilirubinemia, respiratory failure, otitis media, congenital defects, mental disorders and neurological development disorders are more often observed among the children born to smoking mothers. The data given in literature [6,12] clearly show how important it is for the women to know the effects of active smoking and of being exposed to environmental smoke during pregnancy. The analysis showed that most women assumed that they had knowledge on the subject. However, after asking more detailed questions concerning the issue the percentage of correct answers decreased and these were more often given by non-smokers. The study showed some disturbing phenomena. Smokers, more often than non-smokers thought that tobacco smoke did not lead to the development of subsequent diseases in children. What is more, there were respondents who believed that the placenta protected the foetus against the effects of smoke.

Microstructural changes in the placenta (increase in the number of immature chorionic villi and decrease in the number of capillaries in the villi where diffusion of maternal and foetal blood takes place) were observed in women who smoked, both actively and passively, during their pregnancy [13]. Therefore, it means that the placenta does not protect the foetus against the harmful influence of the substances that form cigarette smoke. It is disturbing that relatively more often it was smokers who presented such an opinion, which seems to be a justification for their addiction.

Research done by Kandel et al. [14] indicate that if pregnant women were aware of the harmful effects tobacco smoking had on their health and that of the newborn, they would certainly give up the addiction. Our study showed that only half of the women who smoked actively before and during their pregnancy declared readiness to quit smoking. Therefore, a hypothesis can be drawn that these women willfully expose their children to the negative effects of cigarette smoke. However, further scientific inquiry is required.

CONCLUSIONS

1. Smoking during pregnancy is relatively common and it is related to women's marital status, education, profession and monthly income per household member.
2. Women smoking during pregnancy, significantly more often than non-smokers, believe that the placenta protects the child against the effects of tobacco smoke and deny the existence of any link between smoking and the occurrence of diseases in children.

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