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A Questionnaire-Based Study to Evaluate Health-Related Behaviors in 602 Women of Reproductive Age in Poland

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Background: Women's health and undertaking health behaviors during the reproductive period by women, especially during pregnancy, are an important indicator that is reflected both in their own health and in health of their children. This study aimed to use a questionnaire to evaluate the health-related behaviors in women of reproductive age in Poland.

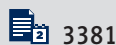
Material/Methods: The studies were conducted among 602 women of reproductive age by diagnostic poll method with the use of questionnaire technique. The applied tool was an original on-line questionnaire. A link to the questionnaire was sent to women aged 18-49 years using the snowball sampling technique and was posted on thematic pro-health website forums.

Results: The majority of women participating in the study exhibited health behaviors on the average level (65.3%; M=7.6). Pro-health behaviors were exhibited mainly by women with higher education (M=7.7; SD=2.6), married women (M=8.0; SD=2.6), and women who were pregnant at the time (M=8.8; SD=2.6). However, single women participating in the study consumed alcohol more often (80.6%). The observed relationships were statistically significant ($P<0.05$).

Conclusions: This survey showed that younger women with no children were significantly less likely to be aware of positive health-associated behaviors and lifestyle when compared with older women with children. This small study supports the importance of health education in young women before they have children.

Keywords: **Health Education • Reproductive Health • Women's Health**

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Background

A holistic definition of health, approved by the World Health Organization (WHO), presents it as a widely-understood welfare, but concomitantly as a state of diversity, variability, and continuity [1]. In turn, health behaviors are important factors shaping and directly affecting health, apart from genetic liability, environmental conditions, and healthcare. These behaviors are defined as actions taken by the person in order to maintain, achieve, or regain good health or prevent diseases [2]. Behaviors conducive to building health potential are pro-health behaviors (eg, undertaking physical activity, rational nutrition), while behaviors harmful to health (eg, use of substances) are anti-health behaviors, otherwise negative. All these actions indirectly and directly affect health and well-being of the individual, as well as reflecting their attitude toward health [2].

It should be emphasized that good reproductive and sexual health is a condition of complete physical, mental, and social well-being in all the aspects of sexuality and functioning of the reproductive system, and each person has the right to make their own choices concerning their sexual and reproductive health [3]. Moreover, health competences can significantly determine health behaviors of women in the scope of reproductive health, and health awareness is also strictly associated with knowledge of reproductive health [4].

Women's health in the reproductive period before conception is extremely important because it has effects on fertility, test results during pregnancy, health consequences for women themselves and for their children, and thus the health condition of the future generations. Women's health is a component of pre-conception care and a very significant public health strategy [5,6]. The importance and significance of the reproductive period in a woman's life, the diversity of the population of women planning pregnancy, who are characterized by rather irregular involvement in health care before getting pregnant and limited awareness in this regard, are important for their health [5,7].

In the literature on the subject, research on health behaviors takes into account aspects of physical activity [8,9], eating habits [1,10-12], follow-up visits [13,14], vitamin supplementation [15,16] or the use of stimulants [17-19], as well as the concept of pregnancy planning [5-7]. Researchers exploring the issues of healthy behavior and health awareness of people in the reproductive period of life do it using specially developed questionnaires and scales [20,21], individual in-depth interviews [22], or using mixed-methods study [23].

This study aimed to use a questionnaire to evaluate the health-related behaviors in women of reproductive age in Poland.

Material and Methods

Ethics Statement

This study was submitted for assessment by the Bioethics Committee of the Medical University of Warsaw (No. AKBE/161/17). The anonymity of the survey was assured by not asking questions that could be used to identify the respondent. The data obtained characterized the person in a statistical manner (eg, education, marital status); therefore, the information necessary for the analysis, not the identification of the surveyed, was acquired.

Participants

The study was conducted in Poland from November 2017 to April 2018 among 602 women in the reproductive period aged 18-49 years who, regardless of place of residence, marital status, education, professional activity, maternity experience, or reproductive plans, wanted to consciously and voluntarily take part in the study and share information concerning their health behaviors. All the answers in the study questionnaire were anonymized.

Study Design

The study was conducted by diagnostic poll method with the use of questionnaire technique [24]. The applied tool was an original on-line questionnaire. A link to the questionnaire was sent to women aged 18-49 years using the snowball sampling technique and was posted on thematic pro-health website forums. In line with the assumption of the research, each respondent had the opportunity to learn about the aim and principles of the research and to agree or not to participate in the research.

Assessments

The original questionnaire on health behaviors of women during the reproductive period was developed particularly for the needs of this study. The questionnaire was created based on the subject literature and the available research tools. However, the specificity of the study required extension of the research tool and its adaptation to the subject of the study. As a result, an original questionnaire initially defined as the Scale of Health Behaviors of Women During the Reproductive Period was developed and was piloted in a group of 30 women. As a result of the pilot study, the content of 3 questions was modified. It consisted of 37 single-choice and multiple-choice questions, including nutrition, substance use, performing pro-health behaviors (eg, gynecological visits, breast self-examination), physical activity, fertility, and data on the characteristics of the studied women. To analyze the health behaviors of women during the reproductive period, 16 representative single-choice questions

Table 1. Characteristics of women participating in the study.

Age n (%)	
Up to 20 years	33 (5.5)
21-25	244 (40.5)
26-30	152 (25.2)
31-35	100 (16.6)
Over 35 years	73 (12.1)
Age M (SD)	27.8 (6.1)
Marital status n (%)	
Married	262 (43.5)
Single	340 (56.5)
Education n (%)	
Secondary	188 (31.2)
Higher	414 (68.8)
Place of residence n (%)	
City	541 (89.9)
Village	61 (10.1)
Professional activity n (%)	
Yes	334 (55.6)
No	267 (44.4)

Motherhood experience n (%)	
Yes	249 (41.4)
No	353 (58.6)
Reproductive plans n (%)	
I attempt to have a child	27 (4.5)
I am pregnant	38 (6.3)
I have given birth to a child within the last 12 months	113 (18.8)
I do not attempt to have a child, or I delay conception	268 (44.5)
I do not have sexual intercourses	156 (25.9)
BMI (the non-pregnant) n (%)	
Underweight	41 (7.6)
Normal	398 (70.6)
Overweight	89 (15.8)
Obesity	36 (5.8)
BMI M (SD)	22.8 (4.1)
Scale of health behaviours	
Low level	126 (20.9)
Average level	393 (65.3)
High level	83 (13.8)
Scale of health behaviours M (SD)	7.6 (2.6)

were selected among those contained in the survey. A female respondent scored 1 point for indicating a health behavior. The minimum possible score was 0, while the maximum score was 16. The health behaviors were interpreted in the following ranges: 0-5 points indicated low level of health behaviors, 6-10 points indicated medium level of health behaviors, and 11-16 points indicated high level of health behaviors.

Statistical analysis

Statistical analysis was conducted with the use of STATISTICA version 12. Results for variables in qualitative scales are presented using percentage distributions. In the case of results expressed in quantitative scales, basic descriptive statistics were calculated: mean (M), standard deviation (SD), and median (Me). The compliance of distributions of quantitative variables with normal distribution was examined with the Kolmogorov-Smirnov test with Lilliefors correction. Because the distributions were different from the normal distribution and the sizes of the compared groups were various, we used non-parametric methods for the verification of statistical hypotheses: Spearman's rank correlation coefficient, Mann-Whitney

U test, and Kruskal-Wallis rank ANOVA test. To analyze the relationships between the variables on qualitative scales, the chi-square independent test was applied. The accepted significance level was $P < 0.05$.

Results

Respondents' Characteristics

Characteristics of female study participants in the reproductive period are presented in **Table 1**. The majority of the studied women were aged 26-30 years (25.2%), single (56.5%), declared to have higher education (68.8%), were city residents (89.9%), were professionally active (55.6%), and did not have children (58.6%). Moreover, the non-pregnant responders had BMI mainly within normal limits (70.6%). Most of responders did not attempt to have a child during the study period (44.5%). The majority of women participating in the study exhibited health behaviors on the average level (65.3%; $M = 7.6$).

Table 2. Analysis of correlation between health behaviors, age, and BMI of the respondents.

	R	t(N-2)	P
Scale of Health Behaviours of Women		Age	
	0.14	3.5	0.0006
		BMI	
	-0.11	-2.7	0.0007

Table 3. Analysis of relationships between the Scale of Health Behaviors of Women and the selected variables.

Variable	Scale of Health Behaviours of Women			p-value
	M	Me	SD	
Education				
Secondary	7.2	7.0	2.6	0.0198
Higher	7.7	8.0	2.6	
Marital status				
Single	7.2	7.0	2.6	0.0000
Married	8.0	8.0	2.6	
Reproductive plans				
I attempt to have a child	8.1	8.0	2.3	0.0014
I am pregnant	8.8	8.5	2.6	
I do not attempt to have a child or I delay conception	7.2	7.0	2.7	
I have given birth to a child within the last 12 months	8.0	8.0	2.5	
I do not have sexual intercourses	7.6	7.0	2.4	
Age				
Gynaecological visits				
Once a year or more frequently	28.6	28.0	5.6	0.0000
Once every 2-3 years	28.8	26.0	7.0	
Less frequently than once every 3 years	25.9	24.0	6.3	
I do not go to the gynaecologist	23.0	23.0	3.6	
BMI				
Physical exercises				
Does physical exercises	22.6	21.9	3.9	0.0313
Does not do physical exercises	24.1	22.6	5.2	

Health Behaviors Analysis

Statistical analysis showed a significant positive correlation between age and Scale of Health Behaviors of Women (R=0.14; P=0.0006), as well as a statistically significant negative correlation between BMI and Scale of Health Behaviors of Women (R=-0.11; p=0.0007) (Table 2).

Pro-health behaviors were mainly expressed by married women (M=8.0; SD=2.6) with higher education (M=7.7; SD=2.2), and who were pregnant at that moment (M=8.8; SD=2.6). Moreover, the oldest respondents (M=28.8; SD=7) visited a gynecologist every 2-3 years, while the youngest women (M=23.0; SD=3.6) did not attend gynecological visits at all. Women with lower BMI (M=22.6; SD=3.9) were physically active. The observed

Table 4. Analysis of relationships between single marital status and the use of natural family planning methods, contraceptive agents, and alcohol consumption.

Variable	Marital status		p-value
	Single n (%)	Married n (%)	
Using natural family planning methods			
Yes	80 (23.5)	114 (43.5)	0.0000
No	260 (76.5)	148 (56.5)	
Taking contraceptive agents			
Yes	159 (46.8)	127 (48.5)	0.0000
No	53 (15.5)	134 (51.2)	
I do not have sexual intercourses	128 (37.7)	1 (0.3)	
Alcohol consumption			
Yes	274 (80.6)	139 (53.1)	0.0000
No	66 (19.4)	123 (47.0)	

Table 5. The analysis of relationships between the reproductive plans and the use of folic acid and contraception.

Reproductive plans	Using folic acid		Using contraception	
	Yes n (%)	No n (%)	Yes n (%)	No n (%)
I attempt to have a child	19 (70.4)	8 (29.6)	1 (3.7)	26 (96.3)
I am pregnant	32 (84.2)	6 (15.8)	8 (21)	30 (74.6)
I do not attempt to have a child or I delay conception	29 (10.8)	239 (89.2)	200 (74.6)	64 (23.9)
I have given birth to a child within the last 12 months	28 (24.8)	85 (75.2)	61 (54.00)	49 (43.4)
I do not have sexual intercourses	11 (7)	145 (93)	16 (10.3)	122 (78.2)
p-value	0.0000		0.0000	

relationships were statistically significant ($P < 0.05$). Detailed data are presented in **Table 3**.

Reproductive Behavior Analysis

The married women more often used both natural family planning methods (56.5%) and contraceptive agents (48.5%) compared to the single respondents. However, single women (80.6%) participating in the study consumed alcohol more often. The observed relationships were statistically significant ($P < 0.05$) (**Table 4**).

Table 5 shows the analysis of relationships between the reproductive plans and the use of folic acid and contraception. Pregnant respondents (84.2%) used folic acid most often, while women who did not have sexual intercourse (93%) and those who were not planning or attempting to have a child (89.2%) were not using folic acid ($P < 0.05$). On the other and, using contraception was declared mainly by the respondents who were not attempting to have a child (74.6%) ($P < 0.05$).

Discussion

The women participating in this study were characterized by different health behaviors, which were influenced by various sociodemographic determinants, such as age, education, marital status, BMI index, and procreation plans. It should be stressed that health behaviors of pregnant women are developed on a higher level compared to non-pregnant women, which is confirmed by the results of studies conducted by Boguszewski et al (2018) [10]. This is also indicated by the results of our own studies. Besides, the majority of women participating in the study exhibited the average level of health behaviors. Moreover, our own study results have shown that with age, the studied women have shown more pro-health behaviors, as well as the women with higher education and the married women. Therefore, the content concerning health education should be directed to the remaining respondents who showed a low and medium level of health behaviors [1].

Physical activity is one of the fundamental needs of each human being and is an important condition of health improvement and maintenance in all stages of life. Therefore, it was chosen as another aspect analyzed by the present study. Lack of physical activity bears serious consequences in the form of general deterioration of health worldwide and the rise of non-infectious diseases [8,9]. Cassidy et al (2017) observed that overweight and obese adults more often report having a low level of physical activity compared to adults with normal body weight [9]. Results of our own studies indicated that the higher the BMI, the less positive health behaviors were exhibited by women, including the fact that they were not physically active; they did not perform any exercise. Moreover, Wojtyła et al (2011) stated that physical activity of young women of reproductive age is insufficient, which in turn does not guarantee good health in the future and increases the risk of many chronic diseases in adulthood. Physical activity is also significantly reduced during pregnancy and the post-partum period [8]. During pregnancy, women make worse nutritional choices, participate in physical activity less often, and get less sleep, so in this period the risk of adverse health effects is increased [11]. Thus, the above-mentioned subgroups should be encouraged to be more mobile by emphasizing its positive health aspects. Moreover, emphasis should be placed on community recreation programs and supporting them in promoting a physically active lifestyle [25].

It should be highlighted that gynecological examination is significant for every woman's health [13]. Women often consider this examination as an embarrassing, painful, and even dangerous procedure [13,26]. Results of our own studies demonstrated that the oldest respondents visited a gynecologist once every 2-3 years, while the youngest women did not attend gynecological visits at all. Studies by Warzecha et al (2019) showed that level of education is a determinant of attending a gynecological examination; women with higher education more often visited a gynecologist on a regular basis [14].

Therefore, campaigns encouraging young women to use preventive health examinations in gynecology should be prepared. Regular and correct implementation of screening programs is the best way to prevent clinical forms of diseases [27].

Women's ability to control their fertility by the appropriate use of contraceptive agents is an inseparable element of their lives. Using contraception or natural family planning methods enables them to avoid unplanned and unwanted pregnancies and prolong the time interval between the subsequent pregnancies depending on the life situation, which entails an individual's right to decide on their reproductive and sexual health [3,28].

Studies by Wang et al (2017) on the marital status of women in the context of using contraception conducted among the

African and American women showed that married women used contraception most often. In the analyzed African countries, contraception was generally more popular among unmarried women than among currently married women, and unmarried women used contraceptive methods more often than the married women [29]. In the United States, vasectomy is almost exclusively used by married men. Female sterilization is not restricted to married women only; however, it is less popular among unmarried women. Studies by Eeckhaut (2015) demonstrated that, in contrast to vasectomy, the use of sterilization in women depending on their marital status resulted from differences in the number of childbirths [30]. Studies by Yadav (2015) showed that women in Nepal mainly used natural family planning methods, whereas only a small percentage of them used contraceptive tablets and condoms. Moreover, the married women had low level of knowledge on contraception and low levels of contraceptive use [31]. On the other hand, the studies by Upadhyay et al (2016) revealed that women in casual relationships used contraceptive methods less often than women remaining in long-term relationships. Women in new relationships (0-3 months) used effective contraceptive methods less often than women remaining in relationships that lasted for more than 1 year [32]. Research by Zgliczynska et al (2019) on use of contraception by Polish women of reproductive age showed that among the factors determining the use of hormonal or non-hormonal contraception were, inter alia, type of relationship, level of education, parenthood, number of sexual partners, and frequency of sexual contacts [21].

Our own study results have shown that married women used natural family planning methods more often than single respondents, while contraceptive agents were used at a similar level in both groups. Educational and counseling messages should be constantly adapted, and knowledge on natural family planning methods and contraception should be widespread among women [33].

The importance of contraception after pregnancy should be emphasized here [34,35]. The Lactational Amenorrhea Method (LAM) is a recognized contraceptive method that ensures a 98% protection against pregnancy on condition that, among others, menstruation has not appeared since delivery and that the child is entirely or almost entirely breastfed and is younger than 6 months [35]. If a woman is not breastfeeding, contraceptive use should be considered to avoid pregnancy, because in such a situation fertility returns within 1 month after the end of pregnancy. Moreover, due to an increased risk of venous thromboembolism related to the use of estrogen-containing contraceptive agents, the start of using these methods should be delayed until 6 weeks after delivery. On a global scale, contraception after delivery prevents approximately 30% of deaths of mothers and 10% of deaths of infants if the pregnancies are spaced at least 2 years apart. Therefore, the WHO recommends waiting

at least 2 years after delivery before the next pregnancy [34]. In our own study we observed that the majority of pregnant women did not use any contraceptive agents, while more than half of the women who had given birth to a child within the last 12 months used contraceptive agents.

Alcohol consumption is a negative health behavior that is common all over the world, leading to the development of addiction. Alcohol overuse is associated with high rates of mortality and morbidity, as well as with decreased well-being of society [17]. The frequency of alcohol consumption among married people is lower than among single people, which is confirmed by studies by Kendler et al (2016) and Reczek et al (2016) [18,19], as well as the results of our own studies. In this context it is important to realize that psychological and social aspects of marriage, particularly health-relevant interactions between spouses, strongly protect against development of disorders associated with alcohol consumption [18].

Another essential health behavior of women is vitamin supplementation, particularly folic acid supplementation in the prevention of neural tube defects and other congenital defects sensitive to folic acid deficiency. In addition to enriching basic dietary products with folic acid, reproductive-age women should consume 0.4-1.0 mg of folic acid supplement per day before conception [15]. Studies by Shere et al (2015) showed that due to a decrease in folic acid blood concentration when taking oral contraceptive agents, folate supplementation should be continued in reproductive-age women who use this method of contraception [36]. On the other hand, Dessie et al (2017) demonstrated that nearly half of studied women took folic acid supplement in various periods of pregnancy, but they emphasized that only 1.92% of women took the supplement in the period protecting against neural tube defects [37]. In Turkey there is a relatively high incidence of neural tube defects, and Köken et al (2013) found that nearly half of the studied women were aware that folic acid use prevents these defects. Moreover, the level of knowledge and folic acid use increased with socio-economic status and level of education, and the respondents who were knowledgeable about this indicated health care professionals as a source of information. The investigators also demonstrated that more than four-fifths of the studied women declared that the pregnancy was planned, whereas only 14.2% of them used folic acid before conception. In turn, the use of folic acid during the first trimester of pregnancy was declared by almost half of the pregnant women [16]. Results of our own studies have shown that folic acid was most frequently used by pregnant women and women planning pregnancy. Stern et al (2013) demonstrated that the studied women mentioned folic acid supplementation among the things on the "to-do list" when planning to get pregnant. In this study, midwives recommended women take folic acid tablets when they discontinued hormonal

contraceptive tablets. Advice to take a new type of tablet instead of the contraceptive tablet makes it easier for women to remember it. Moreover, the study broadened the knowledge of women concerning both the reproductive period and folic acid supplementation before getting pregnant. Using information acquired during conversation or medical interview with a woman seems to be a potential tool to promote reproductive health [38]. The above study results indicate that midwives, who take care of women at every stage of life, especially during the reproductive period, play an important role in disease prevention and health education [39]. Midwives are specialists in reproductive health; therefore, they are able to provide obstetrical care as well pre-conception care, encouraging women to engage in pro-health behaviors, to learn how to detect fertility, and to learn both natural family planning methods and contraceptive methods, as well as providing guidance on a healthy lifestyle [40].

In summary, women of reproductive age participating in the present study are characterized by varied health behaviors. It should be emphasized that pro-health behaviors favor maintaining and improving the health and reproductive potential, while women's health during the reproductive period, especially during pregnancy, is a very important indicator that is reflected both in their own health and in the health of their children [12,41,42]. We found that younger women, single women, and women who do not plan to conceive exhibit more negative behaviors and do not attach adequate importance to a healthy lifestyle. This indicates the need to raise the level of health awareness and education in this group of women, which will enable them to make informed and responsible decisions regarding their health. To improve knowledge and health awareness of women in the field of reproductive health protection and promoting a pro-healthy lifestyle, a multifaceted approach is necessary, requiring cooperation and involvement of many components, including in particular the Ministry of Health and local governments, educational institutions, non-governmental organizations and associations, healthcare representatives, and media to develop accessible, evidence-based information on reproductive health, which is a challenge for the public health sector and is emphasized in the literature [4,5,7]. In addition, the results of our own studies indicate the need for further research in the area of health behaviors of reproductive-age women, knowledge and its sources in this field, as well as health literacy and women's behaviors. This will help to clarify the expectations and needs of women concerning health education in this period.

However, the conducted study has certain limitations as well. It was carried out based on the original research tool; however, when designing it, indicators used in the standardized tools for investigating these fields were applied. The research was carried out using the diagnostic survey method, which reveals

the opinions and declared health behavior of the respondents, which may be a limitation in the interpretation and generalization of the results. The analysis was superficial.

Undoubtedly, the study group could have been larger and more diverse. However, it seems that these limitations do not decrease the diagnostic value of the conducted study.

References:

- Kordyżon M, Nowak-Starz G. Analysis of health behaviors and the significance of health among occupationally-active persons. *Pielęgniarstwo XXI Wieku*. 2019;18:84-94
- Hildt-Ciupińska K, Pawłowska-Cyprysiak K. Positive health behaviors and their determinants among men active on the labor market in Poland. *Am J Mens Health*. 2020;14:1557988319899236
- United Nations Population Fund: Sexual and reproductive health and rights: an essential element of universal health coverage. ICPD25 International Conference on Population and Development, UNFPA 2018.
- Marčić M, Stojanović G, Pazun V. Relationship between socio-demographic characteristics, reproductive health behaviors, and health literacy of women in Serbia. *Front Public Health*. 2021;9:629051
- Khan NN, Boyle JA, Lang AY, Harrison CL. Preconception health attitudes and behaviours of women: A qualitative investigation. *Nutrients*. 2019;11:1490
- Du L, La X, Zhu L, et al. Utilization of preconception care and its impacts on health behavior changes among expectant couples in Shanghai, China. *BMC Pregnancy Childbirth*. 2021;21:491
- Bortolus R, Oprandi NC, Rech Morassutti F. Why women do not ask for information on preconception health? A qualitative study. *BMC Pregnancy Childbirth*. 2017;17:5
- Wojtyła A, Kapka-Skrzypczak L, Biliński P, Paprzycki P. Physical activity among women at reproductive age and during pregnancy (Youth Behavioural Polish Survey – YBPS and Pregnancy-related Assessment Monitoring Survey – PrAMS) – epidemiological population studies in Poland during the period 2010-2011. *Ann Agric Environ Med*. 2011;18:365-74
- Cassidy S, Chau JY, Catt M, et al. Low physical activity, high television viewing and poor sleep duration cluster in overweight and obese adults; A cross-sectional study of 398,984 participants from the UK Biobank. *Int J Behav Nutr Phys Act*. 2017;14(1):57
- Boguszewski D, Adamczyk JG, Tomaszewski W, et al. Evaluation of the health-related behaviour of pregnant women from Warsaw, Poland. *Iran J Public Health*. 2018;47:57-63
- Cannon S, Lastella M, Vincze L, et al. A review of pregnancy information on nutrition, physical activity and sleep websites. *Women Birth*. 2020;33:35-40
- Teixeira JA, Castro TG, Grant CC, et al. Dietary patterns are influenced by socio-demographic conditions of women in childbearing age: A cohort study of pregnant women. *BMC Public Health*. 2018;18:301
- Żuk P, Żuk P. Spatial, ideological and economic limitations of gynaecological examinations in Poland. *Health Care Women Int*. 2020;41(10):1101-10
- Warzecha D, Szymusik I, Pietrzak B, et al. Sex education in Poland – a cross-sectional study evaluating over twenty thousand Polish women's knowledge of reproductive health issues and contraceptive methods. *BMC Public Health*. 2019;19(1):689
- Chitayat D, Matsui D, Amitai Y, et al. Folic acid supplementation for pregnant women and those planning pregnancy: 2015 update. *J Clin Pharmacol*. 2016;56:170-75
- Köken GN, Derbent AU, Erol O, et al. Awareness and use of folic acid among reproductive age and pregnant women. *J Turk Ger Gynecol Assoc*. 2013;14:87-91
- Ferreira MP, Willoughby D. Alcohol consumption: The good, the bad, and the indifferent. *Appl Physiol Nutr Metab*. 2008;33:12-20
- Kendler KS, Lönn SL, Salvatore J, et al. Effect of marriage on risk for onset of alcohol use disorder: A longitudinal and co-relative analysis in a Swedish National Sample. *Am J Psychiatry*. 2016;173:911-18
- Reczek C, Pudrovska T, Carr D, et al. Marital histories and heavy alcohol use among older adults. *J Health Soc Behav*. 2016;57:77-96
- Suto M, Mitsunaga H, Honda Y, et al. Development of a health literacy scale for preconception care: A study of the reproductive age population in Japan. *BMC Public Health*. 2021;21:2057
- Zgliczynska M, Szymusik I, Sierocinska A, et al. Contraceptive behaviors in Polish women aged 18-35 – a cross-sectional study. *Int J Environ Res Public Health*. 2019;16:2723
- Baheiraei A, Mirghafourvand M, Mohammadi E, Charandabi SM. The experiences of women of reproductive age regarding health-promoting behaviours: A qualitative study. *BMC Public Health*. 2012;12:573
- Baheiraei A, Mirghafourvand M, Mohammadi E, et al. Health-promoting behaviors and social support of women of reproductive age, and strategies for advancing their health: Protocol for a mixed methods study. *BMC Public Health*. 2011;11:191
- Taherdoost H. How to design and create an effective survey/questionnaire; A step by step guide. *International Journal of Academic Research in Management (IJARM)*. 2016;5: 37-41
- Feeny D, Garner R, Bernier J, Thompson A, et al. Physical activity matters: Associations among body mass index, physical activity, and health-related quality of life trajectories over 10 years. *J Phys Act Health*. 2014;11:1265-75
- Hjörleifsson S, Bjorvatn B, Meland E, et al. The when and how of the gynaecological examination: A survey among Norwegian general practitioners. *Scand J Prim Health Care*. 2019;37:264-70
- Izetbegovic S, Alajbegovic J, Mutevelic A, et al. Prevention of diseases in gynecology. *Int J Prev Med*. 2013;4:1347-58
- Alano A, Hanson L. Women's perception about contraceptive use benefits towards empowerment: A phenomenological study in Southern Ethiopia. *PLoS One*. 2018;13:e0203432
- Wang W, Stavetig S, Winter R, Allen C. Women's marital status, contraceptive use, and unmet need in Sub-Saharan Africa, Latin America, and the Caribbean. *DHS Comparative Reports No. 44*. Rockville, Maryland, USA: ICF, 2017
- Eckhaut MCW. Marital status and female and male contraceptive sterilization in the United States. *Fertil Steril*. 2015;103:1509-15
- Yadav RK. Knowledge and use of contraception among married women. *Academic Voices: A Multidisciplinary Journal*. 2016;5:28-33
- Upadhyay UD, Raifman S, Raine-Bennett T. Effects of relationship context on contraceptive use among young women. *Contraception*. 2016;94:68-73
- Nansseu JR, Nchinda EC, Katte JC, et al. Assessing the knowledge, attitude and practice of family planning among women living in the Mbouda health district, Cameroon. *Reprod Health*. 2015;12:92
- Glasier A, Bhattacharya S, Evers H, et al. Contraception after pregnancy. *Acta Obstet Gynecol Scand*. 2019;98:1378-85
- Birabwa C, Bakkabulindi P, Wafula ST, et al. Knowledge and use of lactational amenorrhoea as a family planning method among adolescent mothers in Uganda: A secondary analysis of Demographic and Health Surveys between 2006 and 2016. *medRxiv*. 2021;2021:21259067
- Shere M, Bapat P, Nickel C, et al. Association between use of oral contraceptives and folate status: A systematic review and meta-analysis. *J Obstet Gynaecol Can*. 2015;37:430-38
- Dessie MA, Zeleke EG, Workie SB, Berihun AW. Folic acid usage and associated factors in the prevention of neural tube defects among pregnant women in Ethiopia: Cross-sectional study. *BMC Pregnancy Childbirth*. 2017;17:313

Conclusions

Women of reproductive age participating in the present study were characterized by varied health behaviors. This survey from Poland showed that younger women with no children were significantly less likely to be aware of pro-health behaviors and lifestyle when compared with older women with children. This small study supports the importance of health education in young women before they have children.

38. Stern J, Larsson M, Kristiansson P, Tydén T. Introducing reproductive life plan-based information in contraceptive counselling: An RCT. *Hum Reprod.* 2013;28:2450-61
39. Neneman M, Bączek G, Dmoch-Gajzlerska E. The role of the midwife in the therapy of infertility in Poland in the opinion of patients. *Piel Zdr Publ.* 2019;9:41-49
40. Dębska SL, Szyszka M, Bączek G, Dmoch-Gajzlerska E. The knowledge of physiology of female fertility and natural family planning methods among medical students. *Piel Zdr Publ.* 2017;7:141-47
41. Sharma Biedenbarn KR, Fedor JM, Agarwal A. Lifestyle factors and reproductive health: Taking control of your fertility. *Reprod Biol Endocrinol.* 2013;11:66
42. Kosiba G, Gacek M, Wojtowicz A. Readiness to change and pro-health behaviours among students of physical education and other teaching specialisations. *Central European Journal of Sport Sciences and Medicine.* 2019;4:53-65