SELECTED ASPECTS OF SEXUALITY IN PREGNANT WOMEN

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ABSTRACT

Introduction: Sexuality, being a vital aspect of life, encompasses its biological, psychological, and emotional spheres. A successful sex life facilitates the proper functioning of the relationship. Sexual drive and the form of this activity are frequently subjected to changes during pregnancy. A normal pregnancy is not a contraindication to sexual intercourse. Sexual contact has a positive impact on the course of pregnancy by improving the well-being of the pregnant woman. Aim of the study was to assess correlations between selected socio-demographic factors and sexual behaviour of pregnant women.

Material and methods: The study was conducted in a group of 150 pregnant women in the period from January 2021 to April 2021. Method used for this study was a diagnostic survey, and the tool used was the Female Sexual Function Index (FSFI). In addition, an original questionnaire was also used.

Results: Place of residence, level of education, and marital status did not significantly affect the quality of the respondents' sex life ($p > 0.05$). Younger respondents more often experienced ailments and pain during the sexual act than women over 30 years of age ($p = 0.006$). The obstetric history of the respondents had no impact on their satisfaction with sex life ($p = 0.715$). The parity of the respondents did not mark any significant differences between the frequency of intercourse in trimesters: I ($p = 0.206$), II ($p = 0.855$), and III ($p = 0.552$). The subjects in high-risk pregnancy declared higher satisfaction with sex life ($p < 0.001$). They also rated the lubrication domain worse ($p = 0.005$) and felt less pain during intercourse ($p < 0.001$).

Conclusions: While planning antenatal care, the patient's relationship with a partner shall also be considered with regard to the possibility of using various forms of sexual activity adapted to the course of pregnancy, its duration, and the well-being of the pregnant woman.

Key words: pregnancy, socio-demographic variables, sexual activity.

INTRODUCTION

Sexuality, being a vital aspect of life, encompasses its biological, psychological, and emotional spheres. A successful sex life facilitates the proper functioning of the relationship.

Sexual drive and the form of this activity are frequently subjected to changes during pregnancy. Physical symptoms of the first trimester, i.e. nausea and vomiting, may lead to reduced sexual desire. The increase in the frequency of intercourse that might be observed in the second trimester is usually caused by the acceptance of pregnancy and the resolution of gestational symptoms. Women's sexual activity tends to decrease in the third trimester. It might stem from the sense of physical awkwardness related to the increase in weight, which leads to a decrease in sexual desire and satisfaction [1-4].

Fear and anxiety also have a significant impact on sexuality during pregnancy. They mostly relate to the course of pregnancy, childbirth, and the burdens that the birth of a child brings, resulting in decreased in interest in sex. Some couples choose to abstain from sexual activity during pregnancy for fear of pregnancy complications, such as miscarriage or premature birth [2, 4, 5].

One of the factors affecting sex during pregnancy is sexuality prior to getting pregnant. Women who derive satisfaction from sexual activity are usually interested in intercourse even until the end of pregnancy, while pregnant women who were dissatisfied with their sex life before pregnancy may avoid sexual contact [2].

A properly progressing pregnancy is not a contraindication to sexual intercourse. Sexual contact has a positive effect on the course of pregnancy due to the improvement of the pregnant woman's well-being. Undertaking sexual activity should correlate with the woman's needs as to the form and frequency of this activity [4, 6-8].

Table 1. Age of the respondents

	Basic descriptive statistics						
	Mean	Median	Min.	Max.	I quartile	III quartile	Def. std.
Age	29.58	29.50	19.00	45.00	26.00	33.00	4.67

High-risk pregnancy may require discontinuation of sexual activity. Gestational complications may contribute to the abandonment of sexual contact by a woman, even if it is not a medical indication. The symptoms of the first trimester threatened abortion i.e. bleeding, lower abdominal cramps are a red flag to discontinue sex activity. Also, women who have had several episodes of miscarriages or premature births should limit sexual contact, as they may trigger uterine contractions resulting in miscarriage or premature birth [6, 7, 9-11].

The study aimed to assess correlations between selected socio-demographic factors and sexual behavior of pregnant women.

MATERIAL AND METHODS

The study was conducted in a group of 150 pregnant women in the period from January 2021 to April 2021 at their place of residence during the patronage visits of a midwife. The subjects were patients of the MEDYK Medical Center in Rzeszów.

The method used in the study was a diagnostic survey involving a proprietary questionnaire and the Female Sexual Function Index (FSFI) scale, used to assess all aspects of a woman's sexual functioning: desire, arousal, lubrication, orgasm, sexual satisfaction, as well as pain related to sexuality. The subjects were interviewed by a midwife.

The assessed period covered the last 4 weeks during pregnancy [12]. The respondents expressed their informed consent. The entire study was conducted in accordance with the requirements of the of Helsinki Declaration of 1989.

The analysis of the collected materials was carried out in the StatSoft Statistica 13.1 software. Qualitative variables were analyzed using the Pearson chi-square (χ^2) test, and quantitative variables using the Mann-Whitney *U* test. The level of statistical significance was assumed as of $p < 0.05$.

RESULTS

The median age of the subjects was approx. 30 years ranging from 19 to 45 years old (Table 1). They were mainly married citizens of large cities with higher education. Detailed characteristics of the study group is presented in Table 2.

There were no statistically significant differences between the frequency of intercourses in trimesters I ($p = 0.206$), II ($p = 0.855$) and III ($p = 0.552$) and the parity of the subjects (Table 3).

Table 2. Characteristics of the study group

Group	*n*	%
Place of residence		
Village	21	14.0
City < 100,000 inhabitant	14	9.3
City of 100-300,000 inhabitants	94	62.7
City > 300,000 inhabitants	21	14.0
Education		
Vocational	5	3.3
Secondary	28	18.7
Higher	117	78.0
Marital status		
Single	5	3.3
Married	122	81.3
Casual relationship	23	15.3
Parity		
1	73	48.7
2	53	35.3
3	19	12.7
4 and more	5	3.3

n – number of people

The overall quality of sexual life of pregnant women was assessed at 23.34 ±3.98 points. The highest scores were recorded in the pain category 5.69 ±1.62 points. High scores were also obtained in the category of hydration 4.52 ±1.05 points and orgasm 4.08 ±0.97 points. Satisfaction with sex life was rated relatively low by the respondents – 2.47 ±1.05 points (Table 4).

Most of the surveyed women (91.3%, $n = 137$) were in the risk group of sexual dysfunction (Table 5).

The analysis of selected socio-demographic data revealed that younger subjects (up to 30 years old) more often experienced pain during sexual act than women over 30 years old ($p = 0.006$). There was no relationship between the place of residence, education, marital status and parity of the respondents and the individual domains of the FSFI scale. Taking into account the course of the current pregnancy, it was observed that women with a high-risk pregnancy rated their satisfaction with sex life higher ($p < 0.001$). Significant differences were found in the domains: lubrication ($p = 0.002$) and pain ($p < 0.001$) in relation to pregnant women with uncomplicated pregnancy (Table 6).

Table 3. Frequency of intercourses and trimester of pregnancy with respect to the subjects' parity

		Frequency of intercourses					
		A few times a week	Weekly	Once a month	Less than once a month	No sexual activity	*p*
Primiparous							
I trimester of pregnancy	*n*	17	29	6	5	16	0.206
	%	23.3	39.7	8.2	6.9	21.9	
II trimester of pregnancy	*n*	18	33	7	2	13	0.855
	%	24.7	45.2	9.6	2.7	17.8	
III trimester of pregnancy	*n*	4	22	23	14	10	0.552
	%	5.5	30.1	31.5	19.2	13.7	
Multiparous: ≥ 2							
I trimester of pregnancy	*n*	18	42	2	2	13	0.206
	%	23.4	54.6	2.6	2.6	16.9	
II trimester of pregnancy	*n*	16	41	8	2	10	0.855
	%	20.8	53.3	10.4	2.6	13.0	
III trimester of pregnancy	*n*	3	30	25	8	11	0.552
	%	3.9	39.0	32.5	10.4	14.3	

n – number of people, p < 0.05

Table 4. Results of the Female Sexual Function Index (FSFI) scale

FSFI domain	$\underline{x}$	Median	Min.	Max.	Quartile I	Quartile III	SD
Desire	3.65	3.60	1.20	6.00	3.00	4.40	1.05
Arousal	3.57	3.60	1.20	7.20	3.00	4.20	1.12
Lubrication	4.52	4.80	1.20	6.00	4.50	4.80	1.05
Orgasm	4.08	4.40	1.20	6.00	4.00	4.40	0.97
Satisfaction	2.47	2.20	1.20	6.40	1.60	2.80	1.05
Pain	5.69	6.00	1.20	7.20	4.80	7.20	1.62
Total	23.34	23.60	10.10	34.20	21.90	25.30	3.98

SD – standard deviation, $\underline{x}$ – mean

Table 5. Interpretation of the Female Sexual Function Index (FSFI) score

Interpretation of the result of the FSFI scale	*n*	%
Being in a risk group for sexual dysfunction	137	91.3
Sexual Function within the norm	13	8.7
Total	150	100.0

n – number of people

DISCUSSION

Pregnancy is a unique and special time in a woman's life. This period brings changes in the matter of sex life. For healthy women, with a normal course of pregnancy, there are no contraindications to sexual activity. The sex drive of pregnant women depends on the course of pregnancy as this state is associated with personal changes and their current life situation. The initial weeks of pregnancy are a form of adaptation for a woman to the state she is in and to the changes taking place in her body, especially for women who are primigravidas. The second trimester is usually marked with an acceptance of pregnancy changes, improved well-being and emotional stability. The last trimester, in turn, may be associated with fear and uncertainty, especially in the first pregnancy, about the condition of the fetus, but above all about the pain associated with childbirth [2, 13-16].

In our study, the overall result of the quality of sexual life indicated a potential risk of female sexual dysfunction 23.34 ±3.98 points. It was also shown that 91.3% (*n* = 137) of the surveyed women are at risk of sexual dysfunction. A comparable result was obtained in a study by Aydin *et al.* in which as many as 91% of pregnant women met the criteria of sexual dysfunction [17]. In turn, the study of Huras et al showed that only 13% of women were fully satisfied and 25% were dissatisfied with their sex life during pregnancy [14]. Also, studies by Daud *et al.* conducted using the FSFI scale demonstrated a high probability of sexual dysfunction among 81% of pregnant women. In these studies, the overall quality of sexual life of the surveyed women was also rated at 23.6 points [18]. Similar results using the FSFI scale were obtained

Table 6. Quality of sexual life among pregnant women and selected socio-demographic variables

Domains		Age		Place of residence		Education		Marital status		Parity		Complications in the last pregnancy	
		Up to 30 year	Over 30 years	Village	City	Secondary or vocational	Higher	Single	Married	Primiparous	Multiparous	Complications	No complications
Desire	$\underline{x}$	3.56	3.68	3.52	3.53	3.69	3.54	3.48	3.30	3.46	3.82	3.46	3.52
	SD	1.01	1.23	1.02	1.13	1.13	1.12	1.13	1.10	1.16	1.05	1.68	1.02
	z	–1.68		–0.13		–0.11		–0.40		–1.21		–0.08	
	p	0.102		0.882		0.882		0.657		0.212		0.926	
Arousal	$\underline{x}$	3.48	3.69	3.56	3.57	3.69	3.54	3.51	3.58	3.46	3.68	3.46	3.60
	SD	1.02	1.23	1.01	1.14	1.13	1.12	1.14	1.12	1.16	1.07	1.68	0.94
	z	–1.68		–0.15		–0.15		–0.44		–1.25		–0.09	
	p	0.093		0.882		0.882		0.657		0.212		0.926	
Lubrication	$\underline{x}$	4.63	4.38	4.73	4.49	4.52	4.53	4.55	4.52	4.50	4.55	3.62	4.74
	SD	0.84	1.26	0.85	1.07	1.16	1.02	1.02	1.06	1.15	0.94	1.70	0.66
	z	0.51		1.52		1.52		0.02		0.75		–3.02	
	p	0.613		0.129		0.129		0.981		0.453		0.002	
Orgasm	$\underline{x}$	4.20	3.92	4.20	4.08	4.08	4.08	4.14	4.06	4.06	4.09	3.39	4.24
	SD	0.83	1.13	0.82	1.00	1.05	0.96	0.99	0.97	1.05	0.90	1.56	0.69
	z	1.09		–0.70		–0.70		0.29		0.35		–1.73	
	p	0.277		0.481		0.481		0.769		0.728		0.084	
Satisfaction	$\underline{x}$	2.34	2.64	2.44	2.47	2.62	2.43	2.50	2.46	2.49	2.45	3.30	2.27
	SD	0.99	1.10	1.34	1.00	1.21	1.00	1.24	1.00	1.15	0.94	1.25	0.89
	z	–1.84		–0.86		–0.86		–0.33		–0.23		4.25	
	p	0.066		0.389		0.389		0.739		0.822		< 0.001	
Pain	$\underline{x}$	6.00	5.29	5.73	5.69	5.66	5.70	5.84	5.66	5.75	5.64	4.34	6.02
	SD	1.41	1.79	1.49	1.65	1.70	1.60	1.64	1.62	1.71	1.53	2.24	1.24
	z	2.72		–0.37		–0.37		0.68		1.04		–3.80	
	p	0.006		0.715		0.715		0.495		0.300		< 0.001	
Total	$\underline{x}$	23.4	23.1	23.4	23.3	23.6	23.2	23.5	23.3	23.2	23.3	21.7	23.7
	SD	3.67	4.38	3.51	4.06	3.94	4.00	4.35	3.91	4.26	3.72	6.23	3.15
	z	–0.35		–0.72		–0.72		–0.10		0.22		–0.94	
	p	0.729		0.471		0.471		0.919		0.824		0.346	

$p < 0.05$, z – the Mann-Whitney U test score, SD – standard deviation, $\underline{x}$ – mean

by Davari-Tanha *et al*. who, in a study conducted in a group of 400 pregnant women, found sexual dysfunction in 84.4% of the subjects in the first trimester of pregnancy, in 81.2% in the second trimester and in 84.3% of women in the third trimester [19]. However, in the study by Branecka-Woźniak *et al*., 44.75% of the surveyed women were satisfied with their sexual activity during pregnancy. These studies also showed that a higher level of satisfaction with life was associated with a higher level of overall sexual satisfaction ($p < 0.001$), a higher level of satisfaction with intimacy ($p < 0.01$), a higher level of satisfaction with caresses ($p < 0.05$) and a higher level of satisfaction with sex ($p < 0.001$). Pregnant women with a high level of sexual satisfaction had a higher level of life satisfaction [20]. Also in the study by Brzęczek *et al*., the majority of the respondents declared that intercourse before pregnancy lasted longer than those during pregnancy (85.0%) and gave more pleasure (67.0%) [21].

The demographic variables in our study – such as age, place of residence, level of education and marital status did not significantly affect the quality of sexual life of pregnant women ($p > 0.05$). On the other hand, the study by Majda *et al*. showed that the decrease in the level of sexual needs of female respondents

was also associated with weight gain during pregnancy and their place of residence, because pregnant women living in rural areas had greater sexual needs than pregnant women living in cities [3].

Changes in women's appearance of women are of importance as they significantly affect female sexual activity and satisfaction with the quality of intimate life. Kremska *et al*. observed that the level of satisfaction with sex life of pregnant respondents depended on the duration of their marriage, the shorter it was, the greater their satisfaction. In these studies, the majority of the respondents (67.0%) felt sexually attractive during pregnancy, and the main reasons for engaging in intercourse were to achieve pleasure, intimacy with the partner and avoid the husband's dissatisfaction ($p = 0.0001$) [22].

An important aspect of the sexuality of pregnant women is whether they engage in sexual contact and whether their sexual intercourse differs from that before pregnancy. Our study demonstrated that most women are sexually active in the first trimester of pregnancy (78.1% of women in their first pregnancy and 83.1% in their second or subsequent trimester of pregnancy). It was also observed that in the third trimester of pregnancy, most women were also sexually active (86.3% of women in their first pregnancy and 85.7% in their second or subsequent pregnancy). The results of our research demonstrated that the respondents in the first trimester of pregnancy had intercourse most often once a week (47.3%), in the second trimester of pregnancy also most often once a week (49.3%), and in the third trimester of pregnancy most often once a week (34.7%) or once a month (32.0%). Similar results were obtained in the study by Brzęczek *et al*., in which the majority of study participants (93.0%) engage in sexual intercourse during pregnancy. In these studies, a decrease in the frequency of sexual activity during pregnancy was noted compared to the period before pregnancy. More than half of the surveyed women (52.0%) reported that their sex drive decreased during pregnancy, while it increased in 23.0% of them [21]. Also in the study by Ilska et al., women assessed their satisfaction with sexual activity during pregnancy as worse than before the pregnancy [6]. Pregnancy complications were also associated with less frequent intercourse and lower libido of women [3, 20].

Our study indicated a disturbingly high result indicating the presence of pain experienced by pregnant women during sexual intercourse. Different results were obtained in the study by Brzęczek *et al.*, in which the majority of women did not report pain during sexual intercourse before and during pregnancy [21].

In our study, no statistically significant differences were found between the frequency of intercourse in individual trimesters and parity. On the other hand, the study by Brzęczek *et al.* showed an increase in the number of sexual relations with the progress of pregnancy [21]. The study by Branecka-Woźniak *et al.* indicated an interesting relationship between being in the first pregnancy and a reduced amount of intercourse compared to the period before pregnancy. The decrease in the frequency of intercourse was mainly related to women in their first pregnancy ($p < 0.05$) [20]. In the studies of Kremska *et al.*, the main reason for the decrease in sexual activity in the second trimester was fatigue, which affected 70% of the respondents [22]. Also, a study by Kulhawik *et al.* on changes in sexual behaviour in particular trimesters of pregnancy, conducted among 100 couples, showed a statistically significant decrease in sexual intercourse from the first trimester of pregnancy. This study showed that the frequency of masturbation increased in men and decreased in women [23]. Also, in the study by Branecka-Woźniak *et al.*, as many as 89.50% of pregnant women denied that the frequency of intercourse increased during pregnancy. A higher incidence of sexual activity during pregnancy was reported by only 10.50% of the respondents. Most women (74.59%) reported a decrease in the frequency of intercourse compared to the state before pregnancy. In the studies of Branecka-Woźniak *et al.*, no statistically significant relationships were observed between general sexual satisfaction, satisfaction with intimacy, caressing and sex, and the trimester of pregnancy [22]. However, Daud *et al.* found a significant difference in sexual satisfaction in particular trimesters of pregnancy. Studies have indicated that the average score of desire and satisfaction was significantly lower in the third trimester of pregnancy compared to the first and second trimesters [18].

In our own study, lack of sexual activity in the third trimester of pregnancy was declared by 13.7% of women in their first pregnancy and 14.3% of women in their second or subsequent pregnancy. The most common cause of sexual abstinence during pregnancy was fear for the foetus [20, 23, 24].

Studies conducted by Gałązka *et al.* indicated that the time of resumption of sexual activity was not affected by the method of delivery. Although women giving birth by caesarean section slightly more often expressed satisfaction with intimate contact both before and after childbirth. These subjects also had no concerns about resuming sexual contact. The authors provide an important conclusion from the study that experiencing an orgasm by female respondents was not a measure of satisfaction with the quality of intercourse [25].

As Kulhawik emphasized in her research, changes in sexual behaviour and sexual problems were often revealed or aggravated during the first pregnancy and could have a negative impact on the relationship of partners. Medical staff should be trained in the assessment of sexual difficulties in people during preg-

nancy so that they can conduct reliable education and increase awareness of couples in the field of sexual and reproductive health [23].

We observed that women with high-risk pregnancies had greater satisfaction with their sex life than respondents with normal pregnancy ($p < 0.001$). It seems that this result could have been influenced by various factors, e.g. greater interest in women's health by partners, and thus devoting more attention to them, meeting partners' expectations, or a sense of intimacy expressed in forms other than sexual intercourse.

Different results were obtained in the study by Ilska *et al.*, which showed no significant differences in perceived sexual satisfaction between women with normal pregnancy compared to patients with high-risk pregnancies [6]. Conclusions from the analysis of the literature and our results based on a small cohort indicate the need to continue research, preferably multicentre.

CONCLUSIONS

Selected sociodemographic variables, i.e. parentage, place of residence, level of education, and marital status, did not affect the level of satisfaction with sexual life of the pregnant women. The course of the current pregnancy was significant in the context of overall sexual satisfaction, which was higher in the group of women experiencing complications during pregnancy. There is a need to conduct education on various forms of sexual activity of couples expecting a baby, because dysfunctions in the area of intimate life reduce the quality of life of couples.

Disclosure

The authors declare no conflict of interest.

References

1. Grudzińska M, Bień AM. Aktywność seksualna kobiety w ciąży. In: Bień AM (Ed.). Opieka nad kobietą ciężarną. PZWL Wydawnictwo Lekarskie, Warszawa 2009; 203-204.
2. Lew-Starowicz Z, Skrzypulec-Plinta V. Seksualność kobiet w okresie ciąży i połogu. In: Lew-Starowicz M, Lew-Starowicz Z, Skrzypulec-Plinta V (Ed.). Seksuologia. PZWL Wydawnictwo Lekarskie, Warszawa 2017; 147-154.
3. Majda A, Zalewska-Puchała J, Kamińska A, et al. Uwarunkowania seksualności kobiet ciężarnych w Polsce. Hygeia Public Health 2014; 49: 864-869.
4. Makara-Studzińska M, Wdowiak A, Plewik I, et al. Seksualność kobiet w ciąży. Seksuol Pol 2011; 9: 85-90.
5. Polak D, Kopański Z, Zając R. Sexuality of pregnant women – facts and myths. J Publ Health Nurs Med Rescue 2019; 4: 1-6.
6. Ilska M, Przybyła-Basista H, Ilski A, et al. Aktywność i satysfakcja seksualna kobiet w ciąży prawidłowej oraz wysokiego ryzyka. Ginekol Położ 2018; 2: 34-41.
7. Makara-Studzińska M, Wdowiak A, Plewik I, et al. Wpływ aktywności seksualnej kobiet w ciąży na stan zdrowia noworodka. Seksuol Pol 2011; 9: 57-63.
8. Smoliński R. Seksualność kobiet w ciąży i połogu. In: Lew-Starowicz Z, Skrzypulec V (Ed.). Podstawy seksuologii. PZWL Wydawnictwo Lekarskie, Warszawa 2010; 133-137.
9. Bręborowicz GH. Organizacja opieki medycznej nad kobietą w ciąży. In: Bręborowicz GH (Ed.). Położnictwo i Ginekologia. Tom 1. PZWL Wydawnictwo Lekarskie, Warszawa 2015; 71.
10. Filipek K, Marcyniak ME, Kuran-Ohde J. Jakość współżycia płciowego kobiet 6 miesięcy po porodach drogami natury a samoocena stanu sromu i krocza. Seksuol Pol 2014; 12: 58-63.
11. Kowalczyk R, Skrzypulec-Plinta V. Seksualność kobiet. In: Bręborowicz GH (Ed.). Położnictwo i Ginekologia. Tom 2. PZWL Wydawnictwo Lekarskie, Warszawa 2015; 265-277.
12. Nowosielski K, Wróbel B, Sioma-Markowska U, et al. Development and validation of the polish version of the female sexual function index in the polish population of females. J Sex Med 2013; 10: 386-395.
13. Berek JS, Novak E. Ginekologia. Tom 1. Medipage, Warszawa 2008; 355-356.
14. Huras H, Ossowski P, Wójtowicz A, et al. Ocena wpływu ciąży na aktywność seksualną kobiet. Gin Pol Med Projekt 2013; 8: 31-43.
15. Stadnicka G, Łepecka-Klusek C, Pilewska-Kozak AB, et al. Satysfakcja seksualna kobiet po porodzie – część I. Probl Pielęg 2015; 23: 357-361.
16. Syty K, Pilewska-Kozak AB, Jakiel G. Reakcja kobiet i ich partnerów na fakt zaistnienia ciąży. Perinatol Neonatol Ginekol 2008; 3: 217-221.
17. Aydin M, Cayonu N, Kadihasanoglu M, et al. Comparison of sexual functions in pregnant and non-pregnant women. Urol J 2015; 12: 2339-2344.
18. Daud S, Zahid A, Mohamed M. Prevalence of sexual dysfunction in pregnancy. Arch Gynecol Obstet 2019; 300: 1279-1285.
19. Davari-Tanha F, A'lam Z, Shirazi M. Comparison of sexual function in pregnant woman with different gestational age. Maedica 2020; 15: 335-338.
20. Branecka-Woźniak B, Wójcik A, Błażejewska-Jaśkowiak J, et al. Sexual and life satisfaction of pregnant women. Int J Environ Res Public Health 2020; 17: 5894.
21. Brzęczek P, Pilarczyk R, Rogoziński T, et al. Seksualność kobiet w ciąży. Przegl Seks 2016; 2: 19-24.
22. Kremska A, Wróbel R, Kołodziej B, et al. Zachowania seksualne kobiet w ciąży. Prz Med Uniw Rzesz Inst Leków 2013; 1: 75-85.
23. Kulhawik R, Zborowska K, Grabarek B. Changes in the sexual behavior of partners in each trimester of pregnancy in Otwock in Polish couples. Int J Environ Res Public Health 2022; 19: 2921.
24. Phan T, Hoang L, Tran T. Fear-related reasons for avoiding sexual intercourse in early pregnancy: A cross-sectional study. Sex Med 2021; 9: 100430.
25. Gałązka I, Porembska K, Kobiołka A. Porównanie zachowań intymnych kobiet w okresie przed ciążą i po porodzie. Zdrowie Dobrostan 2013; 3: 53-68.