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Assessment of the level of knowledge about health behaviors and puerperium of various social groups in the Świętokrzyskie Voivodeship during the Covid-19 pandemic

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Abstract

Introduction

The puerperium is a period in a woman's life after childbirth, during which systemic changes occur. The woman's body returns to its pre-pregnancy condition. It lasts about 6 weeks. Having a baby and placenta causes changes in the concentration of pregnancy hormones, fluctuations that can negatively affect the behavior of women. In addition, the Covid-19 pandemic may interfere with the clinical condition of the pregnant woman, causing her mental health to deteriorate.

Aim of the study:

The aim of the study was the assessment of the level of knowledge about health behaviors and puerperium of various social groups in the Świętokrzyskie Voivodeship during the Covid-19 pandemic.

Material and methods

The survey covered 603 respondents from the Świętokrzyskie Voivodeship from February to April 2021. 18 subjects were excluded from the study due to incomplete completion of the questionnaire. Ultimately, the analysis was conducted on the data of 584 respondents. The analyzes included women and men aged 19-45, who were divided into four groups. The first group included 130 obstetricians, the second 86 midwives, the third 50 teachers, and the fourth 318 students of the JKU.

The Bioethics Committee of the JKU approved the study.

Statistical analysis was performed.

Results

1. The respondents' knowledge about puerperium was 78.6%.
2. Midwives had the most information, while obstetricians had the least.
3. Participants in all 4 groups have a satisfactory level of knowledge about the duration of the puerperium, the principles of prophylaxis and hygiene in puerperium and feeding the newborn.
4. The respondents obtain their knowledge from books and magazines.

Key words: puerperium, newborn, lactation, postpartum care

Introduction

The puerperium is a period in a woman's life after childbirth, during which systemic changes occur. There is an involution of the uterus, the healing of the perineal wound, the start of lactation, and the ovaries undertake hormonal activities. It lasts 6 weeks and we divide it into initial or acute postpartum which lasts up to 24 hours after delivery, 1 week of subacute postpartum, and the delayed postpartum which lasts up to 6 weeks[1]. The birth of a child and placenta causes a decrease in the concentration of pregnancy hormones, ie: placental lactogen, chorionic gonadotropin. The levels of prolactin and estrogen begin to return to pre-pregnancy levels. The first ovulation, ie return to fertility, may occur 6-8 weeks after childbirth, and in breastfeeding women even after a year due to the high concentration of PRL related to lactation [2,3]. The pandemic could have a negative impact on the course of pregnancy and puerperium and interfere with the clinical condition of the pregnant woman and consequently influencing the image of future generations. During this period, women could experience additional stress that worsened their mental state, which could lead to the Baby Blues phenomenon.

The most important changes in puerperium concern postpartum wound healing and uterine involution. This process is associated with contracting and reducing the volume of the uterine muscle and closing the cervical canal. Rebuilding the mucosa begins after cleaning the retained placenta and fetal membranes remaining after childbirth. Tissue fragments called lochia come out in liquid form. After several days, the excessive bloody discharge turns into brown, yellow, and then colorless discharge. The mark of a completed delivery is the aperture of the cervical canal [3]. Breastfeeding accelerates uterine involution and plays a major role in optimal infant development. Its benefits are not limited to the duration of lactation, but play a crucial role in the baby's long-term health and quality of life thereafter. They reduce the risk of chronic diseases in children, such as diabetes, obesity, and allergies, which have reached epidemic proportions in recent years [4,5]. Lactation is the hallmark of mammals. It is associated with biochemical and neuroendocrine processes that involve the sensitive ends of the nipple-areola and are hormonally controlled. It is the direct and natural result of pregnancy and childbirth, being an integral part of the reproductive process, benefiting both the mother and the baby. [6,7].

One of the stimuli affecting the secretion of oxytocin is the early latch-on. This hormone accelerates the uterine involution, raises the pain threshold, reduces the mother's discomfort, and increases the emotional bond with the baby. [6,8]. During lactation, the secretion of progesterone and estrogens is inhibited by a long regulatory loop of the hypothalamic-pituitary-ovary system, which extends the period of infertility and the absence of menstruation. Amenorrhea during breastfeeding can be explained as suppression of ovarian function due to high prolactin levels, resulting in suppression of gonadotropin production and cessation of ovulation. [9,10].

In women at the beginning of pregnancy and in the postpartum period, their mental state is assessed. In the case of abnormalities, three types of depressive disorders can appear: baby blues, postpartum depression, and postpartum psychosis. Baby blues may develop 4 days after giving birth and last 12 days. This condition can trigger postpartum depression, which is observed in 6.5%-20% of women in the puerperium. Postpartum psychosis is rare, it affects 0.1% –0.2% of women in puerperium. It is characterized by insomnia, nervousness, confusion, and psychomotor agitation. It is most often associated with the mother's previously diagnosed mental illness. It may be affected by a low amount of sleep and stress resulting from a new life situation. Another cause of this disease is hormone fluctuations related to the return of the woman's body to the state it was before pregnancy[11]. Untreated postpartum

psychosis can lead to suicide and/or infanticide. Therefore, women after childbirth should be provided with support and, if necessary, multi-specialist care.

The patient's clinical condition and possible complications related to pregnancy and the puerperium should be assessed at the first postpartum visits. Medical care should include a full psychosocial assessment and be adjusted to the individual needs of the patient [12, 13]. In order to achieve good results, it is necessary that it is organized in a coherent and optimal manner, focusing on the health needs of patients. [14]. In Poland, the rules of care for women during the puerperium period are regulated by the Regulation of the Minister of Health from August 16, 2018 about the organizational standard of perinatal care (Journal of Laws 2018, pos. 160, as amended) [15].

Aim of the study:

The aim of the study was the assessment of the level of knowledge about health behaviors and puerperium of various social groups in the Świętokrzyskie Voivodeship during the Covid-19 pandemic.

Material and methods

The survey covered 603 respondents from the Świętokrzyskie Voivodeship from February to April 2021. 18 subjects were excluded from the study due to incomplete completion of the questionnaire. Ultimately, the analysis was conducted on the data of 584 respondents.

The analyzes included women and men aged 19-45, who were divided into four groups. The first group included 130 obstetricians, the second 86 midwives, the third 50 teachers, and the fourth 318 students of the Jan Kochanowski University. Questionnaires from obstetricians were collected at the Gynecology and Obstetrics Clinic of the Provincial Complex Hospital in Kielce, material in the remaining groups was collected using an online form. The majority of teachers were residents of small towns up to 50,000 residents -68%, while among obstetricians as much as 48.46% came from a rural area. The average age of the respondents was in the age range of 20-30 years old - 65.2%, between 30-40 years old - 18.2% took part in the study, over 40 years old - 9.6%, people under 20 years of age. were 7.1%. The characteristics of the studied population is presented in tab. 1.

Table 1. Characteristics of the studied populations

	JKU Students	Obstetricians	Midwives	Teachers	All
%(n)	54,4% (318)	22,3% (130)	14,7%(86)	8,6%(50)	584
Place of residence					
Village	37,7%(120)	48,46% (63)	30,2 (26)	18% (9)	37,4% (218)
City up to 50,000 residents	22,3%(71)	16,15% (21)	24,4% (21)	68% (34)	25,1% (147)
City over 50,000 residents	40% (127)	35,39% (46)	45,4% (39)	14% (7)	37,5% (219)
Age					
20 years and under	12% (38)	3,08% (4)	0% (0)	0% (0)	7,1% (42)
20-30 years	85,8% (273)	49,23% (64)	34,9% (30)	26% (13)	65,1% (380)
30-40 years	2,2% (7)	41,54% (54)	29,1% (25)	40% (20)	18,2% (106)
40 years and above	0% (0)	6,15% (8)	36% (31)	34% (17)	9,6% (56)
Level of education					
Primary	0% (0)	3,07% (4)	0% (0)	0% (0)	0,6%(4)
Vocational	0% (0)	14,62% (19)	1,2% (1)	0% (0)	3,4%(20)
Secondary	55% (175)	33,08 (43)	5,8% (5)	2% (1)	38,4%(224)
Bachelor's degree	33,3% (106)	10% (13)	32,5% (28)	6% (3)	25,7%(150)
Higher	11,7% (37)	39,23% (51)	60,5% (52)	92% (46)	31,9% (186)
Marital status					
Single	31,1% (99)	0% (0)	5,8% (5)	6%(3)	18,3% (107)
Married	20,1% (64)	86,15% (112)	72,1% (62)	82% (41)	47,8% (279)
In an informal relationship	48,8% (155)	13,85% (18)	22,1% (19)	12% (6)	33,9% (198)

Statistical analysis was performed with the help of Statistica 13 computer program. The obtained results were subjected to the Chi² test, known as Pearson test. Cramer V coefficients and Spearman rank correlation were calculated.

Bioethical Committee of Collegium Medicum at Jan Kochanowski University approved the study under No. 19/2021. Necessary information for the study was obtained in accordance with the personal data protection policy.

Results

Among the respondents of the study, midwives had the most knowledge about puerperium - 95.1%. Obstetricians' knowledge was on a good level and amounted to 65.8%, students gave correct answers to 70% of the questions, whereas teachers to 83.5% respectively.

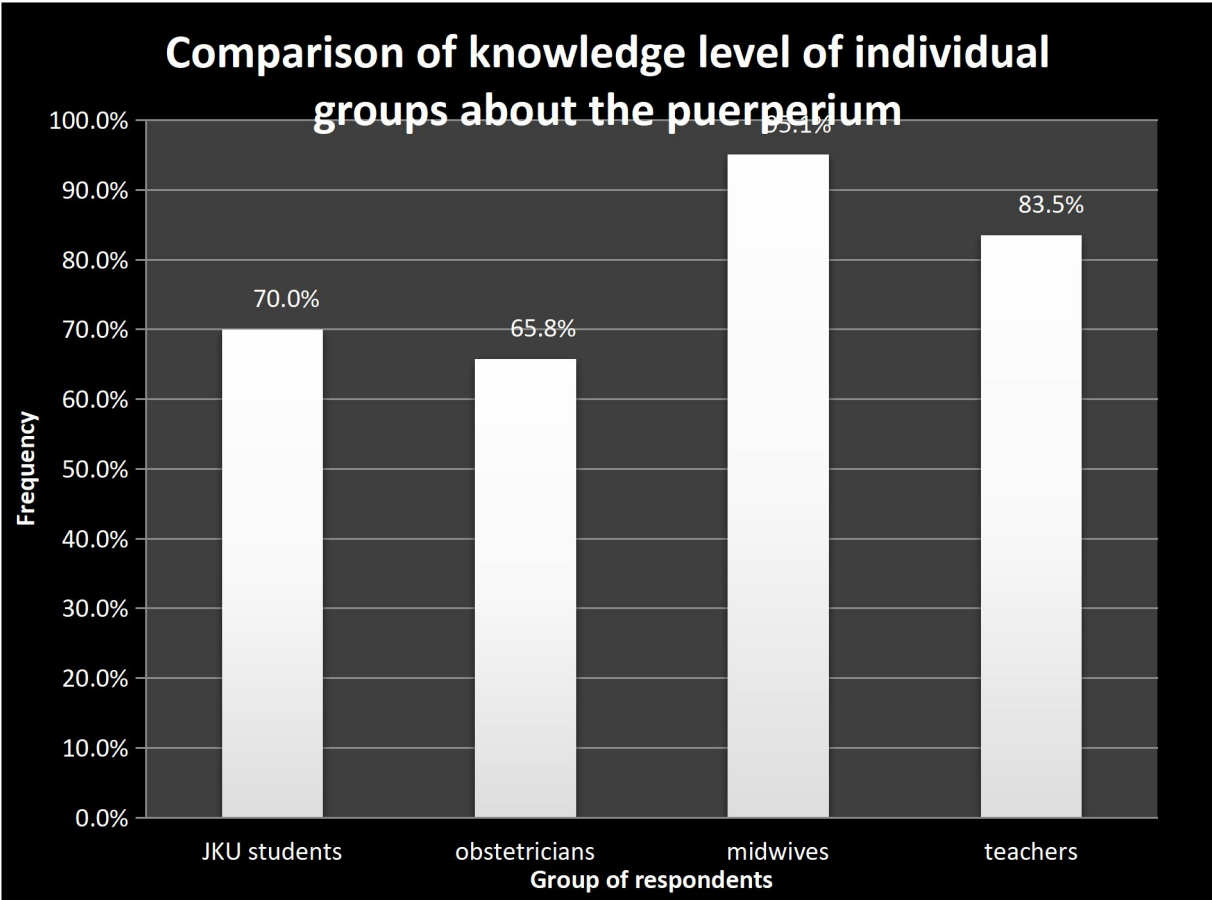


Fig. 1. Comparison of knowledge level of individual groups about the puerperium

When asked about lochia and related disorders, only 56.8% of the respondents gave correct answers. Knowledge about wound edema after cesarean section, purulent exudate from postpartum wound and proper hygiene of the wound after cesarean section was similar. This question was answered correctly by 58.8% of the respondents. The vast majority of respondents knew answers to questions regarding the duration of puerperium (91.6%), hygiene in the puerperium period (91.3%) and the frequency of the newborn feeding (90.2%).

The participants' knowledge about puerperium physiological symptoms was assessed slightly lower (78.6%).

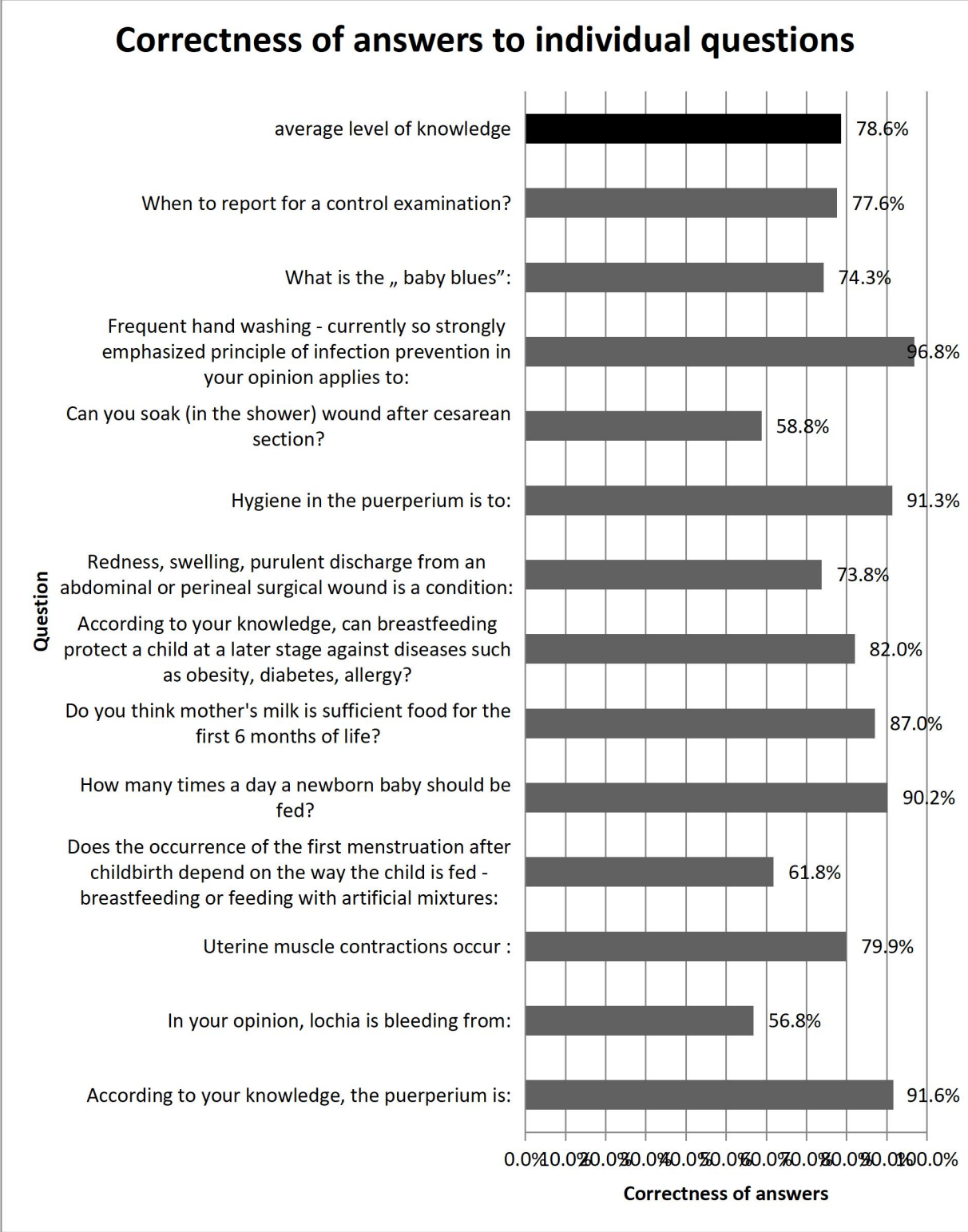
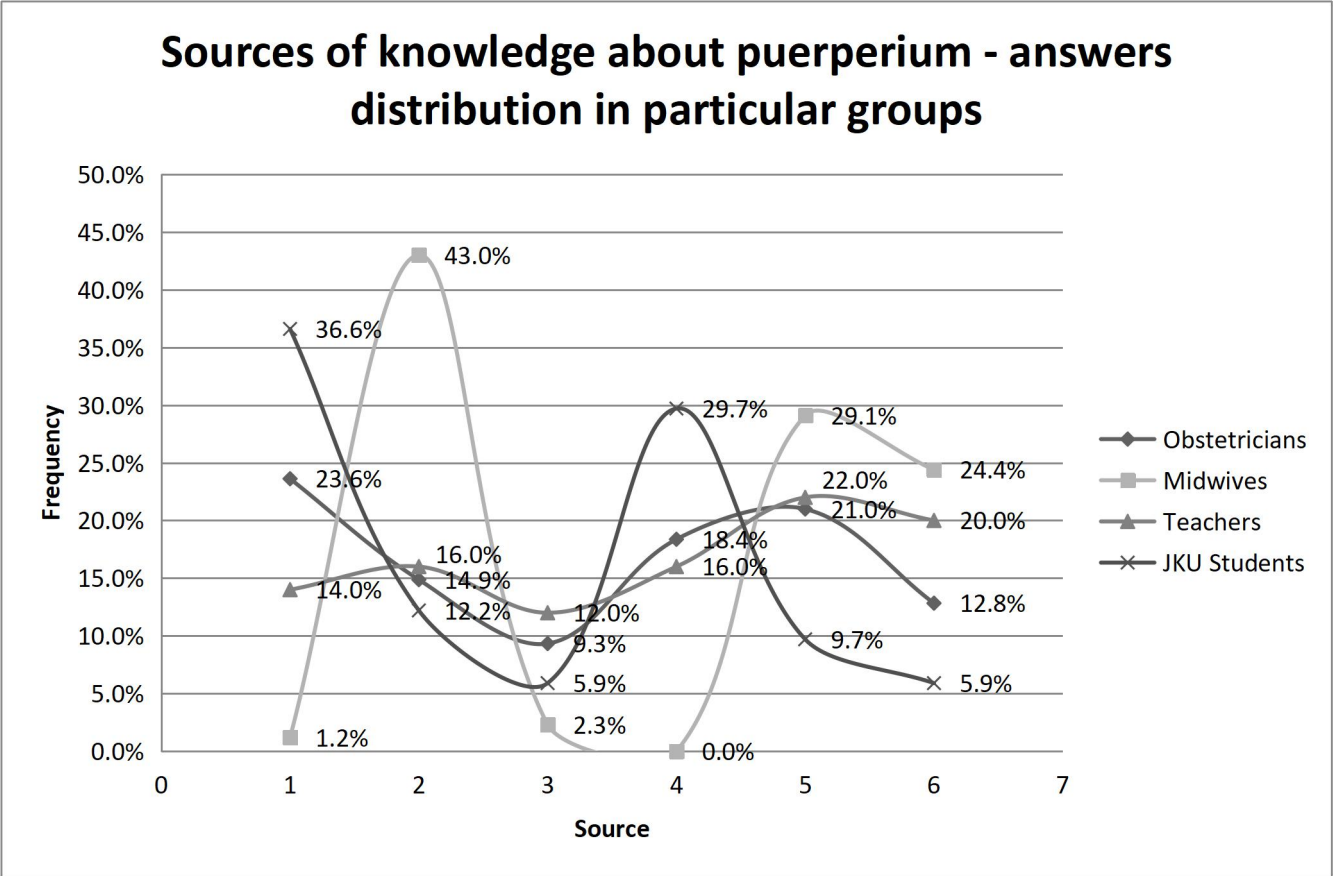


Fig. 2. Correctness of answers to individual questions

In the group of midwives the main source of knowledge about puerperium were books and magazines (43%), none of them indicated friends and family as a place of obtaining information. In the groups of obstetricians and students, knowledge was obtained from the Internet and TV programs (36.6%). The teachers indicated a doctor and a midwife as the main source of knowledge (22%). The rarest response of teachers and students was childbirth classes.



(1-Internet and TV programs, 2-books and magazines, 3-childbirth classes, 4-friends and family, 5-doctor, midwife, 6-personal experience)

Fig. 3. Sources of knowledge about puerperium - answers distribution in particular groups.

Relationship between participation in childbirth school and respondents' knowledge of newborn feeding was calculated using the Chi-square test of independence and the Pearson test. The results were compared with the Cramer V coefficients and the Spearman rank correlation. On the basis of the obtained figures, it is possible to conclude a statistical relationship between answers to questions concerning the newborn feeding and knowledge acquired during the classes at childbirth school. Statistical significance score for the feeding

questions was <0.001 , so these results are statistically significant. It can be concluded that knowledge acquired during classes at childbirth school contributes significantly to the level of knowledge about breast feeding. Table 2 shows the result of calculations for the analyzed units.

Table 2. Relationship between participation in childbirth classes and level of knowledge about newborn feeding

	χ^2	df	p	V	ρ
How many times a day a newborn baby should be fed?	27,8	3	$<0,001$	0,22	0,22
Do you think mother's milk is sufficient food for the first 6 months of life?	26,01	2	$<0,001$	0,21	0,21
According to your knowledge, can breastfeeding protect a child at a later stage against diseases such as obesity, diabetes, allergy?	33,84	2	$<0,001$	0,24	0,24

χ^2 - Chi² statistic of independence, df- number of degrees of freedom, p-level of statistical significance, the strength of dependence measured with Cramer's V coefficient, ρ -Spearman rank correlation

Discussion

Analysis of the research results shows that the level of knowledge about puerperium differs in individual groups. Presented results illustrate the level of knowledge of respondents from Świętokrzyskie Voivodeship about puerperium, basic hygiene rules in the puerperium and the newborn feeding. The results obtained in the following study are higher than those obtained by M. Kaźmierczak in the study conducted among 100 randomly selected obstetricians, where the average level of knowledge was 0.64 [16]. As many as 96.8% of the respondents gave correct answers to questions concerning hygiene rules, which is the highest among the obtained results. In the conducted research, 74.6% of the respondents correctly answered questions about specific ailments and the rules of care in the puerperium period. They obtained a much higher result than the group studied by R. Landau et al., where only 10-15% of respondents could give correct answers [17]. Proper hygiene is of great importance in the puerperium. It helps to prevent infections, which protects against life-threatening complications.

In recent years, a lot of educational emphasis has been put on promotion of health. As women have unstable mental state after childbirth, during Covid-19 pandemic, women really need it. It is connected with hormonal changes in the body, especially with a decrease in estrogens concentration during pregnancy and their increase in postpartum period. Additionally, life situation of a woman who becomes a mother, changes. This increases the risk of depression, baby blues and postpartum psychosis. In the situation of Covid-19 pandemic, an additional trigger that affects their emotional state is stress related to lock down and economic crisis. That is why it is so important for future parents, to be aware of symptoms that may indicate an early stage of psychotic disorders. The implementation of appropriate preventive measures can be crucial in terms of protection against abnormal behavior and thoughts, such as suicidal thoughts and infanticide. In the studied groups, 74.3% of the respondents were able to correctly indicate what "baby blues" is.

Breastfeeding is recognized as the best way to feed a newborn baby. It has a beneficial effect on the body of both, the mother and the baby. It protects the newborn against diseases. It has long-term effects, as it affects health state later in life. It reduces the risk of allergies, atopic dermatitis and diabetes. Breastfeeding contributes to the deepening of the bond between mother and infant, has a better effect on the mental state of the mother, and reduces the risk of emotional disorders typical of the puerperium period. In addition, it accelerates the involution of the uterus, promotes a lower weight gain of the woman. In the proper process of baby's growth and development, it is important to know correct techniques for latching a baby to the breast and the principles of a newborn baby feeding. In the own study, 50.68% of the respondents were aware of these methods. These results indicate better knowledge on the following subject among respondents comparing to the results obtained by J. Jasik [18]. Their results indicate that as many as 90% of the respondents did not have enough knowledge in the subject. As many as 489 people indicated that a newborn should be fed "on demand". Similar answers were given in the studies conducted by G. Bączek et al [19]. In the following study, the correct answer was indicated by only 41% out of 100 obstetricians. Research results obtained by G. Gebuza show that 93% of women claim that naturally fed children are less likely to get sick [20]. In our study, 82% of respondents agree with this statement.

Health education is of great importance, especially during the Covid-19 pandemic. It affects the improvement of physical and mental health. Childbirth schools play a decisive role in future parents educating. They help to prepare for the new life situation such as being a parent. They pay attention to the appropriate psychoprophylaxis of puerperium period. Our

research has shown that participation in childbirth classes contributes to the level of knowledge about the newborn nutrition. All those who attended antenatal courses, gave a correct answer that the newborn should be fed "on demand". Similar conclusions that participants of the childbirth school show higher awareness were also obtained by A. Belowska et al. in their research [21].

Conclusions

1. The respondents' knowledge about puerperium was 78.6%.
2. Midwives possessed most information on puerperium, while obstetricians had the least.
3. Participants in all 4 groups have a satisfactory level of knowledge about the duration of puerperium, principles of prophylaxis and hygiene in puerperium and newborn feeding.
4. The respondents obtain knowledge from books and magazines.

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