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Lactation and emotional problems after premature birth

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SUMMARY

Introduction. Among the many consequences of prematurity, an important role in convalescence and maturation of the newborn is being fed with the breast milk. Mothers with knowledge and awareness of the beneficial effects of breast milk on the healing proces, decise to long term pumping out breast milk for the baby.
Aim. Identify the problems and needs related to lactation of women after preterm delivery and the type of specialized obstetric and psychological care that is consistent with the expectations of parturients.
Material and methods. The test was based on a questionnaire among 245 women after premature birth associated on the Internet forums. The study included patients who gave birth before 37 weeks of pregnancy and fed naturally. The research tool was a proprietary questionnaire, which provided information on emerging problems and opinions on lactation after premature birth. In the collected material, the psychosomatic aspects of lactation after preterm birth were analyzed and the occurrence of the dependence was examined. The collected research was statistically analysed using the program R, version 3.6.3.
Results. The fear of insufficient amount of pumped breast milk during lactation was expressed by 80.8% of respondents. Mood reduction was found in 49% of women. Lost of faith in dealing with the new situation was declared by 48.6% of respondents. The lower the week of termination of pregnancy, the greater the lack of faith in coping with the new situation, and significantly more often a marked decline in mood was observed. Nipple soreness, breast fullness and milk stasis were significantly less common in women who spent the period of hospitalization of a child in hospital. 93.3% of women declared the need for continuous lactation care, 71% declared the need for psychological care.
Conclusions. Not enough simulated food in relation to the baby's needs and soreness and cracked nipples resulting from the need for mechanical pumping are the most common lactation problems for women after preterm birth. Emotional problems are dominated by a significant lowering of mood, fear of not enough sucking milk and lack of faith in coping with the new situation. Mothers hospitalized with a prematurely born child experience less psychosomatic lactation problems. There is a strong need for psychological and lactation care by mothers of prematurely born children.
Key words: premature birth; lactation; psychosomatic lactation problems

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INTRODUCTION

With the development of perinatal medicine, many countries are making efforts to reduce the number of premature births and reduce foetal and neonatal mortality. In Poland in 2017, 402,000 babies were born, including 22,914 (5.7%) newborns with a body weight less than 2500g. Labour of extremely premature babies (before the 28th week of pregnancy) was recorded in 1400 cases [1]. Parents who are facing the phenomenon of prematurity for the first time feel helpless and face a new, difficult reality. They often experience a sense of guilt accompanied by fear for the life, health and further development of the child. Experiencing extreme emotions and feelings of guilt can lead to mood disorders and postpartum depression.

Among the many consequences of prematurity, breastfeeding plays an important role in the convalescence and maturation of a newborn baby. Breastfeeding is justified by the laws of nature, and the golden standard in the nutrition of both full-tern and preterm infants is the supply of breastfeeding. [2,3]. In prematurely born babies, complete or partial parenteral nutrition is used while introducing enteral nutrition using mather's milk. Female milk is treated as a part of the therapy, it constitutes both food and immune protection. [4-6].

Often, it is impossible to feed premature infants directly from the mother's breast due to the health of the baby Mothers with knowledge and conviction about the beneficial effects of breast milk on the healing process decide to long term pumping out their food for the baby. Women are referred to as „breastfeeding differently" (KPI). Despite being highly motivated to pump milk for many months using a breast pump, they experience physical and mental problems which are different from those of standard breastfeeding mothers. They are also confronted with loneliness, misunderstanding and underestimation by their surroundings.

The milk of so-called „premature babies" has a higher calorific value (58-70kcal/dl) than the milk of mothers who gave birth on time (48-64kcal/dl-colostrum). It contains more protein with optimal amino acid composition, more SIgA immunoglobulin, hormones, growth factors, anti-infectious agents, phospholipids and fatty acids with medium chains. AAP and ESPGHAN recommend breast milk supplementation by adding breast milk fortifier – BMF. The fortifier contain cow's milk protein hydrolysate, electrolytes, vitamins and minerals. Before protein supplementation is introduced, the analysis of breast milk should be carried out and the protein concentration level should be determined. According to the recommendations, milk enhancers are used in newborns with a body weight of < 1500g, which receive about 100ml/kg bw/day of breast milk through the digestive system [2,7,8]. The indication for expressing breast milk after preterm delivery is the need to initiate and maintain lactation when the baby is unable to suckle the breast due to health condition and separation from the mother The purpose of pumping is to ensure exclusive breastfeeding, regardless of how it is obtained and administered. In 2014, the "*Programme of early lactation stimulation for neonatological and obstetric centers of III reference level*" was published. The recommendations contained herein are aimed at unifying the rules applicable to breastfeeding and ensuring continuity of breastfeeding for women. The medical personnel have a duty to provide emotional support to parents and to convey reliable knowledge. Responsible for ensuring safe conditions for the collection and storage of breast milk, providing access to the resources of the milk bank for high-risk infants and supporting the lactation process through skin-to-skin contact, kangarooing and sharing care of the baby [9].

Premature mothers use full, regular suction, imitating the frequency, rhythm and length of breastfeeding. For full pumping, hospital-grade electric breast pumps with media separation are used. Lactators have a lactation initiation program with irregular suction rhythm, which is based on the physiology of sucking the child in the first days of life. Physiologically, the baby starts sucking quickly (120 sucks/min), then sucks more slowly as the food flows out (60 sucks/min). The described way of initiation gives the best results, provides comfort to the mother, saves time and allows to achieve full lactation in 2 weeks. Studies confirm the highest efficiency in pulling 8-12 times a day, but such frequent stimulation requires a lot of mobilization and efficient time management from the woman. Excess milk can be collected during the freezing process or given away to a milk bank. [10,11]. According to the latest organizational standard of perinatal care in force since 2019, premature newborn, including those with significant immaturity, which cannot be fed with the biological mother's milk, are recommended to recive milk from a human milk bank. [12].

During the lactation, women experience many lactation problems requiring intervention and support from a midwife or lactation counsellor. In women who are pumping, there are additional problems caused by the use of a breast pump. Intense stress or pain can generate lactation problems and affect the amount of milk Expressem. In addition, strict hygienic rules for the use of the equipment, the high frequency of pumping and the need to ensure proper protection and storage of the feed, make mothers overloaded and find it difficult to reconcile pumping with other duties. [10,13]. A woman needs time to get used to the new situation and find herself in it. This is a difficult time for the whole family. The optimal solution is to be able to stay in the hospital after the birth as long as the condition of the child requires. Unfortunately, in most Polish hospitals this kind of option is impossible and the mother is forced to commute to the hospital. Kangarooing even the smallest premature babies supports the bond between mother and child and significantly affects the development of lactation. Breastfeeding plays a special role for a premature mother. The woman who sucks the baby's food becomes part of the therapeutic team. She is aware of the benefits of breastfeeding and gives her maximum sense of support for her baby.

The milk collection procedure is time-consuming. Under such circumstances, the mother functions even for several weeks. Some women describe working with a breast pump as a arduous and unpleasant process. Additionally, there is a longing for home, for family. A mother experiencing extreme emotions expects support and understanding from those around her. In hospital wards, comprehensive care of lactation advisors and psychological assistance should be provided. Psychological support is also provided by other mothers of premature infants who share their feelings and experiences [10,13-15].

AIM

The aim of the study is to assess the type of psychosomatic lactation problems after premature birth and to determine the type of need for specialized obstetric and psychological care in line with the expectations of parturients.

MATERIAL AND METHODS

The survey was conducted in the group of 260 women after premature birth using Google form in the period from February to April 2020. The following were assumed to be the criteria for inclusion in the survey: completed childbirth before the 37th week of pregnancy, single pregnancy, natural feeding, and filling in the questionnaire with 100% of the correct questions. The research tool was a proprietary questionnaire containing questions concerning opinions on psychosomatic problems of lactation after premature birth. 245 questionnaires were finally analysed. Statistical analysis of the data was carried out using the R program in version 3.6.3. The significance level $p = 0.05$ was assumed.

RESULTS

The average age of the examined women was 31.44 years (SD ± 5.26), median 31, the youngest woman was 19 years old, the oldest 48 years. The majority of the examined group (40.4%) were women living in cities with more than 100 thousand inhabitants and married (72.9%).

The average number of pregnancies was 1.82 (SD ±1.02), median 2. Primaries constituted 48.6% of the examined group of women giving birth. Among the surveyed, births ended in 77.6% of women by caesarean sections.

The average for the week of completion of pregnancy was 30.83 (SD ± 3.19), median 31. Most preterm infants (47.8%) were classified as a moderate preterm delivery. Extremely premature labor occurred in 16.7% of women, while very premature labor occurred in 35.5% (fig. 1).

The average body weight of the born child was 1617.9g (SD ± 646.27), median 1580. The smallest born child weighed 490g. Newborns with low birth weight constituted the most numerous group (41.6%), 9.8% of preterm infants reached birth weight above 2500g. (fig.2.).

The average time of hospitalization of a newborn was 46.78 days (SD ± 39.94). The longest hospitalization was 270 days. Shorter than a month, 39.6% of preterm infants were hospitalized, up to 3 months - 49.8%, longer than 3 months - 10.6% (fig. 8). 93.1% of newborns required hospitalization in the Neonatal Intensive Care Unit. (fig.3.).

The majority of women (59.2%) waited for the discharge of the child at home. The reason for such a decision was most often the lack of possibility of 24-hour hospitalization in the ward with the child (61.2%) and the bad influence of the hospital environment on mental health (11.8%). The mothers of prematurely born children stayed in one room with mothers of healthy newborns, which had an adverse effect on their well-being and lactation (fig. 4.). The women who had the opportunity to stay as patients of the maternity ward and wait for the discharge of the child argued their decision to stay with the child and work on the lactation under the care of the medical personnel.

In 13.9% of the women surveyed, the procedure of manual colostrum collection was not carried out within 6 hours after childbirth, and 38% of mothers did not have the possibility to use a hospital breast pump during their stay in the hospital ward. The need for expert support (midwives, lactation advisors) in initiation of lactation was declared by 64.9% of respondents. Half of preterm births (51.4%) did not have permanent contact with the lactation counselor.

Figure 5. presents lactation problems occurring in women after premature birth. Too little food (52.7%), nipple soreness (29%) and the need to pump with a breast pump (63.3%) were more common during hospitalisation. The problems that the examined women struggled with more often at home were milk stasis (28.2%) and breast inflammation (15.1%).

Almost all women (92.7%) were aware of the beneficial effects of breastfeeding on the development of a premature baby. At the same time 49.8% of mothers perceived breastfeeding as a necessity rather than a pleasure. The fear of too little milk during lactation was expressed by 80.8% of the women and 94.7% were satisfied with the increasing amount of breastfeeding.

The influence of the information on the health of the child on the course of lactation is presented in Figure 6. If the obtained information was positive, the amount of milk was increasing (22.5%), and this fact motivated women to continue working on lactation (31%). Parents, together with the improving health of the baby, noticed the sense of expressing and

Fig. 1. Week of pregnancy termination

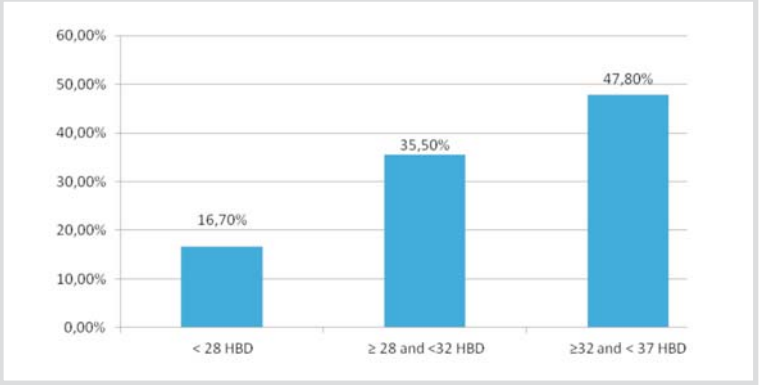


Fig. 2. Birth weight

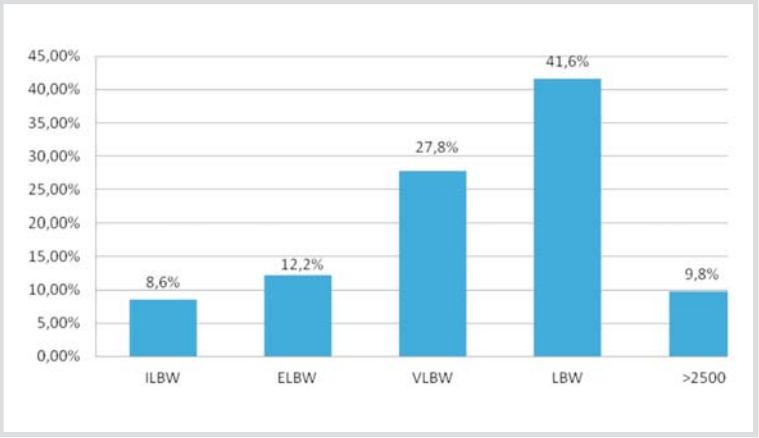


Fig. 3. Hospitalization time of newborns

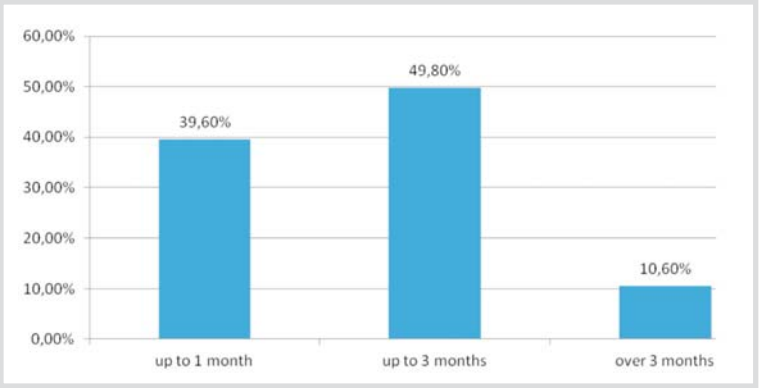
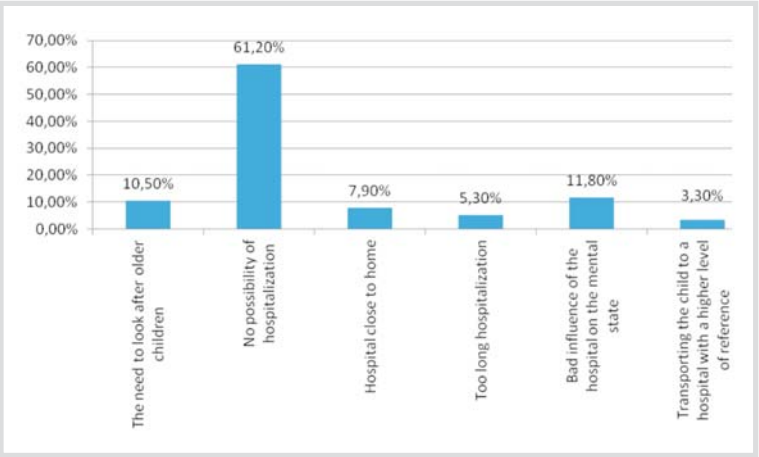


Fig. 4. Reasons for discharge of mothers of premature babies from hospital



treated their food as a cure. The receipt of unfavorable information increased stress and anxiety, which reduced the amount of food or problems with its outflow (46.5%).

Among the respondents, 54.7% of women felt reluctance to work with a breast pump and 55.1% of mothers found it difficult to pump with a breast pump. All women indicated sev-

Fig. 5. The frequency of occurrence of lactation problems in the hospital and at home

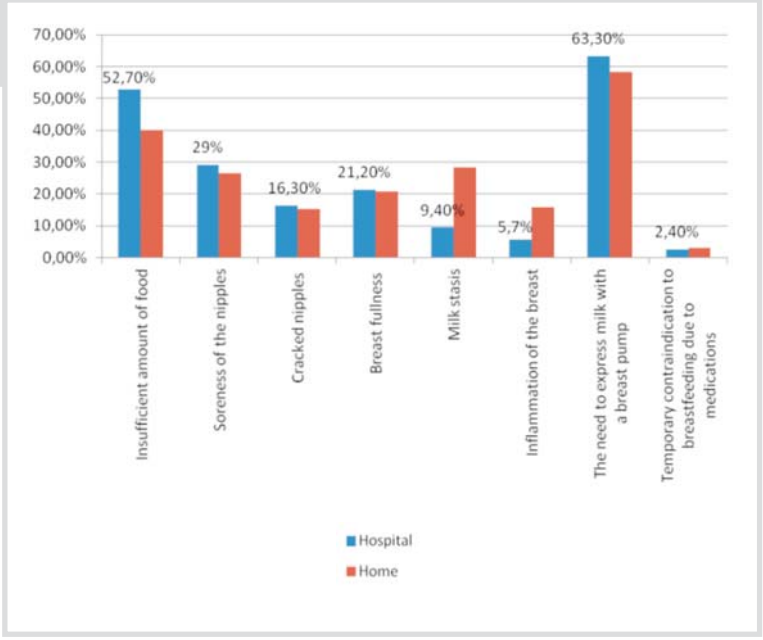


Fig. 6. Influence of information about the child's health on the course of lactation

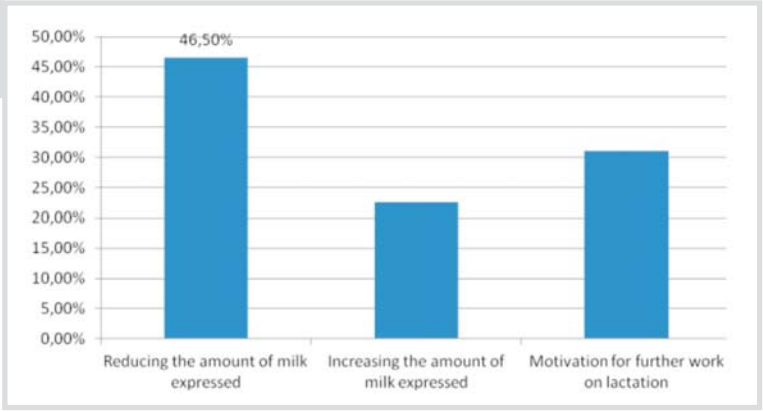
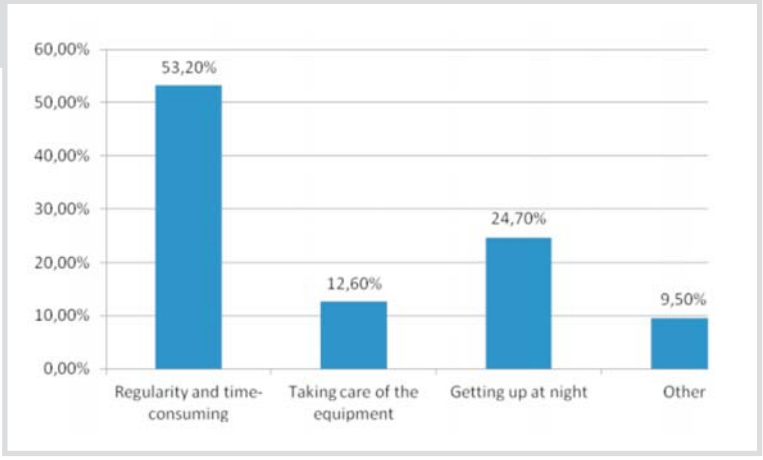


Fig. 7. Problems with constant expression of breastmilk



eral factors that made "breastfeeding differently" difficult for them. The biggest problem (53.2%) was the necessity of regular pumping every 3 hours and long sessions, which forced them to reorganize the remaining duties. Another difficulty was getting up to the breast pump at night (24.7%), which caused fatigue due to lack of sleep. The necessity of washing the breast pump and bottles and taking care of proper food storage was another difficulty (12.6%). The 9.5% of women felt they lost the time they could spend with their babies or felt pain while expressing milk (Fig. 7).

After premature birth, 49% of the respondents stated that their mood was significantly reduced and 21.2% of parturients said „rather yes". (Fig. 8). Lack of faith in coping with the new situation was declared by 48.6% of respondents.

The Kruskal-Wallis test showed a relationship in which, as the time of the child's hospitalization increased, the mood of women decreased ($\div 2 = 14.8$, df = 3, p = 0.002) (Fig. 9.). Women whose children stayed in NICU for a longer period of time more often declared a lack of faith in coping with the new situation.

Fig. 8. Depressed mood after childbirth

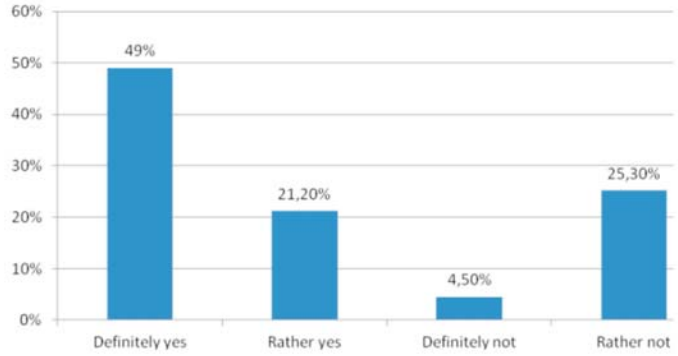


Fig. 9. Duration of hospitalization and depressed mood

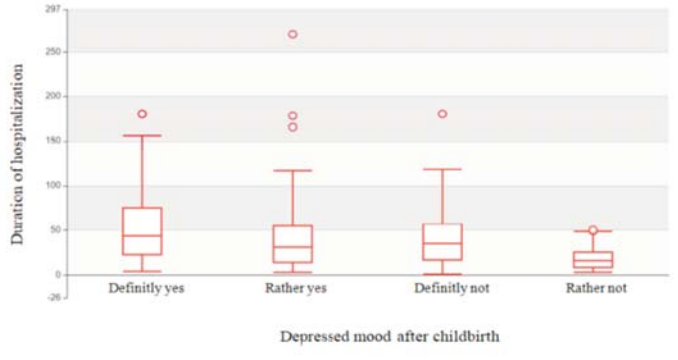
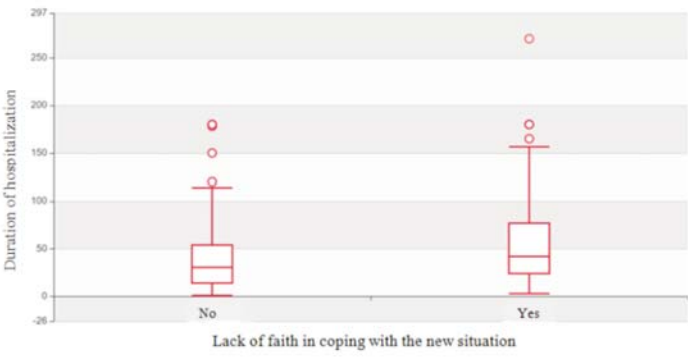


Fig. 10. Duration of hospitalization and lack of faith in coping with the new situation



Wilcoxon's test values (W = 5830, p = 0.003) confirm a significant relationship between the variables described (Fig. 10.).

The difficulty of finding oneself as a mother was declared by 33.1% of women. Family support during lactation received 95.1% of the women surveyed. The highest support (77.7%) was given to women by their husbands/partners (Fig. 11.).

The lack of possibility to obtain support from a hospital psychologist and lactation advisor was declared by 44.5% and 30.6% of women respectively (Fig. 12). More than one interview with a hospital psychologist was held by 11% of women and 46.5% with a lactation counsellor. The lack of need for psychological support was indicated by 28.6% of women, while only 4.9% of parturients expressed no need for a lactation counsellor (Fig. 13).

It was found that women were less likely to use lactation counselors as the duration of neonatal hospitalisation increased (Wilcoxon Test; W = 8000, p = 0.028) (Fig. 14).

It was also found that with the increase in the number of past pregnancies, the feeling of lack of faith in coping with the new situation was more frequent (Wilcoxon's Test; W = 6370, p = 0.028) (Fig. 15), while this group of women had less need for midwife support and lactation counseling during lactation (W = 8870, p < 0.001) (Fig.16).

Figure 17 presents women's opinion on the need to provide continuous psychological and

Fig. 11. Participation of people supporting women

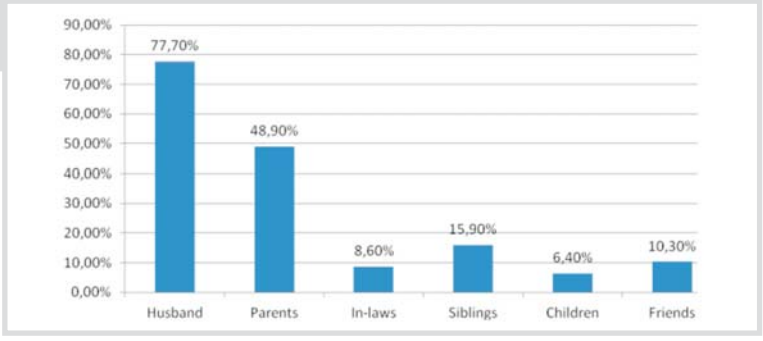


Fig. 12. Availability of a hospital psychologist and lactation consultant on ward

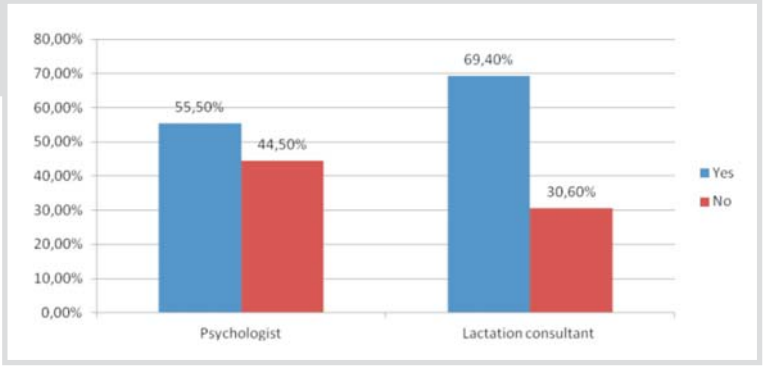
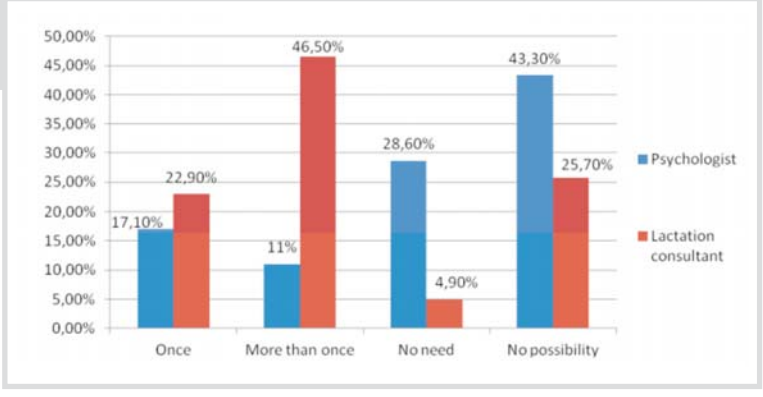


Fig. 13. The frequency of meetings with a hospital psychologist and lactation consultant



lactation care to mothers after premature birth during lactation.

Women living in rural areas significantly less often needed the support of lactation advisors than women living in urban agglomerations ($\div 2(2) = 12$, $p = 0.002$) (Fig.18.).

DISCUSSION

The „Golden Standard" of feeding preterm newborns is the supply of female food. According to own research, 92.7% of women are aware of the beneficial influence of natural feeding on the development process of a premature baby. In the situation of a preterm birth, the parturient has to decide how to feed her baby. Mothers who pump food with a breast pump and then give it to their children by various methods constitute a group of women „breastfeeding differently". They require special care from medical personnel: midwives, lactation counselors and doctors. The obligation to provide premature babies with breast milk and to help women during lactation is guaranteed by the Regulation of the Minister of Health of August 16, 2018 on the standard of organiza-

Fig. 14. Duration of hospitalization and the need for support from lactation consultants

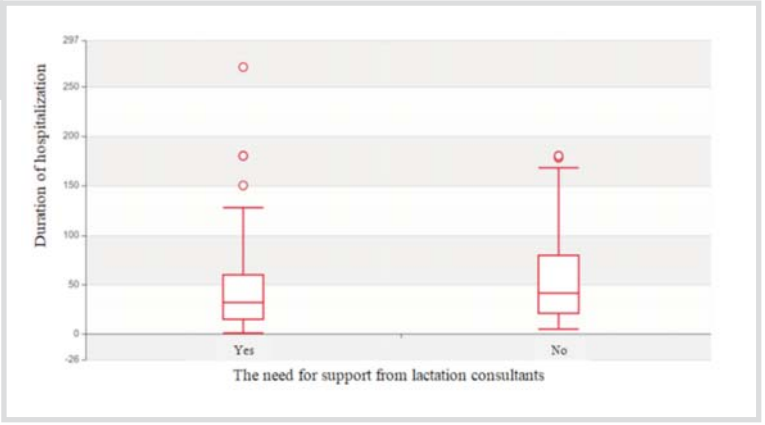


Fig. 15. The number of pregnancies and the lack of faith in dealing with the new situation

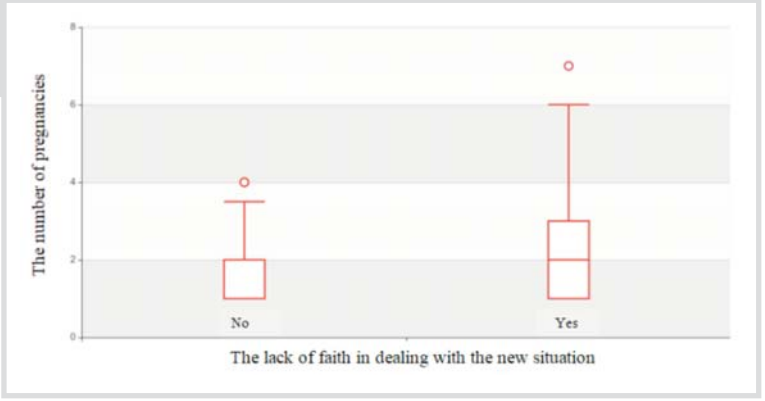
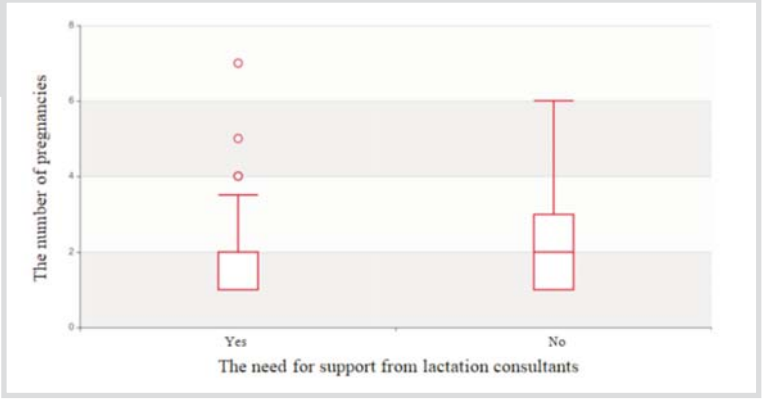


Fig. 16. The number of pregnancies and the need for support from lactation consultants



tional care of the perinatal period [12]. Our own research shows that women expect the support of experts (midwives, lactation advisors) in the initiation of lactation. In their own research, 64.9% of the women surveyed declared the need for support, and 51.4% of women did not have permanent contact with a lactation advisor.

Among the lactation problems experienced by mothers of prematurely born babies are too little milk expressed despite regular work (52.7%) and nipple soreness resulting from mechanical breast pumping (29%). Studies on Osuch et al. show that the biggest problem for women is the pain in pumping out the milk and the difficulty in stimulating milk at the right level [13]. Our own research has confirmed that breast pumping is challenging for 55.1% of women. The difficulty was due to the time-consuming nature of this method and the regularity of the pumping. Additionally, the act of pumping was accompanied by the process of washing, sterilization of equipment and proper labeling and storage of milk. For 24.7% of women the problem was the need for nighttime pulling every 3 hours, which determined fatigue and sleep deficit. The course of lactation was also influenced by the current health condition of the child. It was found that in women who received unfavorable information about the condition of the child, the level of stress increased and made the amount of pumped food decrease or the outflow of food was hindered. According to reports by Osuch et al., among the difficulties reported by mothers were also negative reactions of the environment, excessive burden and lack of understanding and support from relatives [13]. In the own research, 95.1% of women received family support. Every second mother treated breastfeeding as a necessity rather than a pleasure. In the study by Felice et al., some mothers evaluated milk extraction as a time-consuming process during which they cannot take care of the baby, while breastfeeding directly from the breast evaluated it as a time spent pleasantly, positively influencing the bond with the baby [16].

The majority (61.2%) of women were unable to wait in the maternity ward for the discharge of their child due to lack of space or

Fig. 17. The need for constant care provided by a psychologist and lactation consultant in the opinion of women after preterm birth

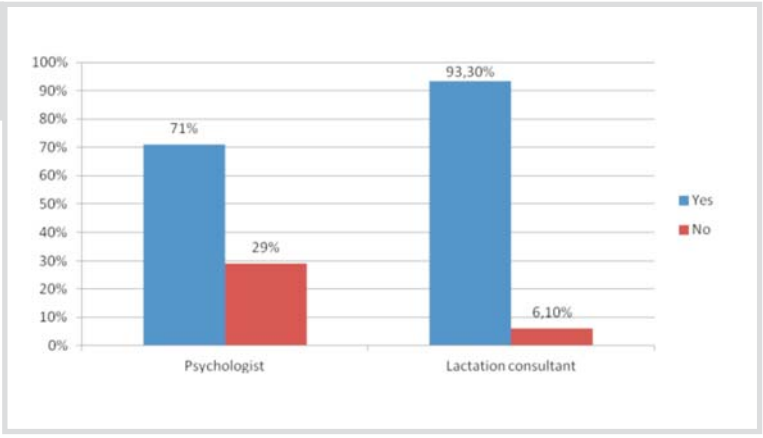
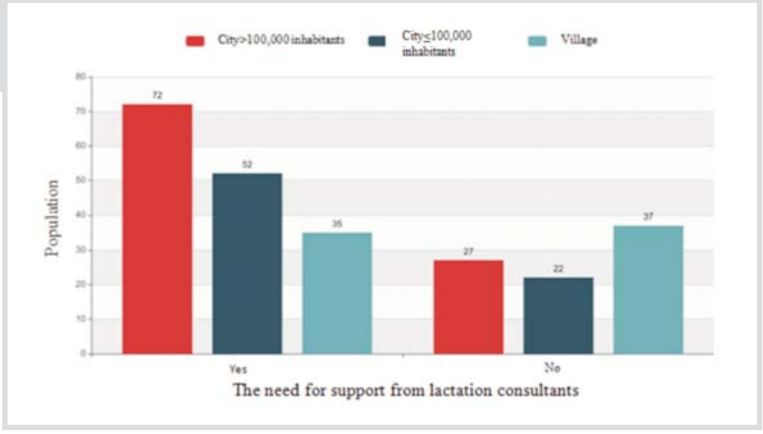


Fig. 18. Place of residence and the need for support from lactation consultants



hospital organisation. According to their own research, women who had such a possibility were less likely to suffer from nipple soreness, beast fulness, food stasis and breast inflammation. This was certainly due to better availability of specialists in hospital conditions than in outpatient ones.

The emotional state played an important role in the course of lactation after premature birth. Fear and anxiety of too little pumping during lactation was expressed by 80.8% of women and aversion to working with a breast pump was 54.7%. A significant decrease in mood was noted in 49% of respondents. Significant correlations between the week of finishing the pregnancy and time of hospitalization and the mood of women after the birth were shown. It has been found that the lower the week of finishing the pregnancy and the longer the duration of hospitalization, the more often there is a decline in mood and lack of faith in coping with the new situation. Lack of faith in their abilities was significantly more frequent in women who gave birth to more than two children. In 11.8% of women, relations with the husband/partner deteriorated as a result of breastfeeding.

According to our own research, psychological assistance in hospital conditions is not sufficient in relation to women's expectations. 44.5% of women reported lack of opportunity to talk to a psychologist, while 71% of women expressed the need for constant psychological care and assistance in solving emotional problems resulting from the course of lactation after premature birth. The availability of lactation counsellors is greater as 69.4% of mothers had the opportunity to seek advice in the study group, but there is still a high percentage of women who did not receive this assistance. 46.5% of women had the opportunity to talk to a lactation counsellor several times, and once - 22.9% of women. These figures show that constant lactation care is very much needed, especially in women who cannot feed directly from their breasts after childbirth due to the immaturity of a premature baby. Królak-Olejnik's study showed that there is a shortage of professional lactation staff in Polish hospitals, and only about 50% of the examined women indicated the presence of lactation attendants [17].

CONCLUSION

Not enough food is stimulated in relation to the baby's needs and the soreness and irritation of the nipples resulting from the need for mechanical pumping are the most common lactation problems for women after premature birth. The emotional problems occurring during lactation in women after preterm labor are dominated by a significant mood reduction, fear of too little expressed milk and lack of faith in coping with the new situation. Mothers hospitalised together with a prematurely born child experience less psychosomatic lactation problems. There is a great need for psychological and lactation care by mothers of prematurely born children.

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