

Postnatal mental depression in two outpatient clinics in Katowice: analysing frequency and risk factors

Anna Trzcieniecka-Green, Agnieszka Strzewiczek, Adam Pawlak

Summary

Aim. The objective of the research was the analysis of the frequency with which postnatal disorders occur in the early period after the delivery, the assessment of their character, and studying the risk features of affective symptom occurrence in women after the childbirth admitted for a check-up to the outpatients' clinic at the L. Rydygier Hospital in Katowice-Bogucice and the Central Clinic in Katowice-Ligota.

Method. A group of 80 women after childbirth were subject to an anonymous survey (40 patients from the maternity ward in the Bogucice hospital and 40 patients at the hospital in Ligota), in the period from June to August 2008. Affective disorders were diagnosed in a survey consisting of three parts: Edinburgh Postnatal Depression Scale (EPDS), Beck Depression Inventory (BDI). A self-prepared questionnaire form which included questions concerning the family conditions, social and economic factors, and the history of the women in childbirth and the delivery procedure.

Results. The average age of the tested women was between 17 to 44 years. Education structure was as follows: 43% of women had higher; 35% secondary school education; 16% vocational education; 6% elementary education. A majority of the surveyed women (69%) were married. 31% of the patients were unmarried, of which 17% were single; 9% divorced; and, the smallest group (5%) were widows. A majority of the patients, i.e. 65 women lived in towns (81.25%), and 15 recipients were from rural areas (18.75%). The largest number of surveyed women (21 persons) declared very good living conditions and 49 declared good conditions. Only 10 patients considered their living conditions as insufficient. None of the women stated that their living conditions were below their needs and anticipations. A majority of the surveyed women (67%) were professionally active. 25% of the women had given birth for the first time, while 75% of them had previously given birth. A majority of the pregnancies (82.5% of the surveyed women) proceeded normally. 65% of the survey recipients gave natural birth, and 35% gave birth by Caesarean section.

Conclusions. The research conducted on the basis of the BDI questionnaire proved that 25% of the surveyed women suffered from postnatal depression of which 15% suffered mild depression, 5% moderate depression and 5% severe depression. The results obtained on the basis of the EPDS questionnaire show that 44% of the women suffered from postnatal depression after childbirth of which 14% suffered from mild depression, and 30% severe depression. In respect to all the analysed changeable features correlating in a significant manner with postnatal depression were education, marital status and living conditions.

depression / pregnancy / childbirth

Anna Trzcieniecka-Green¹, Agnieszka Strzewiczek², Adam Pawlak¹: ¹Department of Psychology, Medical University of Silesia, Katowice, Poland. ²Student Department of Health Care, Medical University of Silesia, Katowice, Poland. Correspondence: Adam Pawlak, Department of Psychology, Medical University of Silesia, 12 Medyków Str., 40-752 Katowice, Poland. E-mail: adam.pawlak@tlen.pl

This research has not been aided by any grant.

INTRODUCTION

Mental disorders occurring in the postnatal period are relatively seldom recognised and even less frequently treated. A stereotype persists within the public awareness according to which motherhood should be a source of joy and a possibility for complete self-realisation in the role

of a woman. Meanwhile, the “baby blues” are extremely common, effecting up to 75% women. Postpartum depression it is supposed to be less common, occurring in 10-15% of births [1]. However, some of the cases are believed not to be reported. Postpartum mood disorders have the potential for significant impact on both the health of the mother and baby. The massive drop in blood levels of oestrogen and progesterone, reaching their highest levels at term to baseline levels within 2–5 days after delivery has prompted the hypothesis that postpartum mood changes are caused by the withdrawal of these hormones [2]. Counteracting depressive disorder of women’s moods is important mainly because of the influence of these unsettled moods on the child’s personality. The very first hours following childbirth are extremely significant for the infant as well as for the woman. They significantly determine the subsequent relationship of the child with the mother and this in turn has an impact on other persons and the world which the child accepts in its later life and capacity to establish permanent emotional relations [3]. The mood and disposition of the woman reaches the unborn child by means of neurohormone regulations, which have an impact on its future development. In the same manner, neurohormones also have an impact after birth. Numerous researches [4] indicate the significance of the mother’s mood in the near-natal period on both the cognitive as well as the emotional development of the child. Recognising the features which have an impact on the occurrence of mental disorders in the near-natal period has an essential significance for the proper care for the woman in childbirth and the infant. The numerical criteria for BDI: score <15: mild depression, score 15–30: moderate depression, score >30: severe depression [5]. The numerical criteria for EPDS: 12–16 mild depression, 17–24 moderate depression, 25–30 severe depression [6].

SUBJECTS STUDIED

The objective of the research was the analysis of the frequency with which postnatal disorders occur in the early period after the delivery, the assessment of their character, and studying the risk features of affective symptom oc-

currence in women after the childbirth, admitted for a check-up to the outpatients’ clinic at the L. Rydygier Hospital in Katowice-Bogucice and the Central Clinic in Katowice-Ligota.

METHODS

A group of 80 women after childbirth were subject to an anonymous survey (40 patients from the maternity ward in the Bogucice hospital and 40 patients at the hospital in Ligota), in the period from June to August 2008.

Affective disorders were diagnosed in a survey consisting of three parts:

- Edinburgh Postnatal Depression Scale (EPDS)
- Beck Depression Inventory (BDI)
- A self-prepared questionnaire form which included questions concerning the family conditions, social and economic factors, and the history of the women in childbirth and the delivery procedure. Thanks to the obtained material it was possible to differentiate the features which could have correlated with mental disorders.

The patients participated in the research between the second and fourth week, more frequently during their second and third week following delivery. After receiving comprehensive information regarding the purpose of the survey, all the patients gave their consent restricting their rights to anonymity. The obtained results were analysed according to a percentage ratio and subjected to an analysis based on the chi-square statistic test and the Pearson’s contingency coefficient.

RESULTS

The average age of the tested women was between 17 to 44 years. The largest group of the respondents (49%) were women between 26 to 35 years-of-age. 36% of women in childbirth were between 18 to 25 years, 14% of the patients were over 35 years, and only one patient was under 18 years-of-age.

At least half of the surveyed patients from both hospitals were between 26 to 35 years-of-age.

The average age of the patients from the maternity ward in the Ligota hospital was 29 and the Bogucice hospital – 28 years.

Education structure was as follows: 43% of the women had high; 35% secondary school education; 16% vocational education; 6% elementary education.

The highest percentage of patients (54%) with higher education was surveyed at the maternity ward of the Bogucice hospital, while 40% had secondary school education at the Ligota hospital.

A majority of the surveyed women (69%) were married. 31% of the patients were unmarried, of which 17 % were single; 9% divorced; and, smallest group (5%) were widows.

A majority of the patients, i.e. 65 women lived in towns (81.25%), and 15 recipients were from rural areas (18.75%). 95% of the patients at the Bogucice hospital lived in towns, and 5% in rural areas. 32.5% of patients at the Ligota hospital were from rural areas, and 67.5% from towns. The largest number of surveyed women (21 persons) declared very good living conditions and 49 declared good conditions. Only 10 patients considered their living conditions as insufficient. None of the women stated that their living conditions were below their needs and anticipations.

A majority of the surveyed women (67%) were professionally active. A majority of them performed mental work. At the Bogucice hospital 37.5% of the women were unemployed, while 27.5 % of the Ligota hospital recipients declared to be unemployed.

25% of the women had given birth for the first time, while 75% of them had previously given birth. The research included unfavourable childbirth history confirming that 20% of the patients at the maternity ward in Bogucice and 52.2% of the Ligota patients previously had at least one miscarriage.

A majority of pregnancies were planned (66.25%). This coefficient at the Bogucice hospital was 60%, and at the Ligota hospital 72.5%.

Only 38.75% of the surveyed patients attended birth school courses. The percentage of recipients that had attended birth schools at the Bogucice hospital was 38.75%, and those surveyed at the Ligota hospital 32.5%.

A majority of the pregnancies (82.5% of the surveyed women) proceeded normally. At both

hospitals this coefficient was quite similar. At the Bogucice hospital 15% of the recipients had pregnancies which proceeded abnormally, and 20% of the pregnancies proceeded abnormally at the Ligota hospital.

65% of the survey recipients gave natural birth, and 35% gave birth by Caesarean section. At the Bogucice hospital 22.5% of pregnancies were terminated by Caesarean section and 47.5% at the Ligota hospital.

Patients were requested to fill out the Beck Depression Inventory (BDI) in the third part of the questionnaire. The chart below presents the achieved results.

According to the BDI research questionnaire, postnatal depression was confirmed in 25% of the women after childbirth; 12 patients suffered from mild depression, 4 women suffered from a moderate escalating depression and 4 further patients suffered from severe depression.

10% of patients suffered from postnatal depression at the Bogucice hospital; 7.5% of patients a mild depression, and 2.5% severe depression. At the Ligota hospital 40% of the patients suffered from depression. 22.5% suffered from mild depression, and 10% suffered from postnatal moderate escalating depression, and 7.5% a severe depression.

Then, the escalation of postnatal depression was measured according to the Edinburgh Postnatal Depression Scale (EPDS). Postnatal depression was experienced in 35 of the 80 examined women. Mild depression was recognised in 11 women, and severe depression in 24 women.

At the Bogucice hospital, postnatal depression occurred in 25% of the patients, 10% suffered from mild depression, and 15% severe depression. At the Ligota hospital 62.5% of the women suffered from depression. Mild depression occurred in 17.5% of the patients, and 45% suffered from severe postnatal depression.

According to BDI postnatal depression in women occurs to ca 20% to 30% of women in each age group (only 1 patient in the age group under 18 years-of-age), and according to EPDS from 40% to 45% of women.

The lowest percentage of postnatal depression was noted among women with higher education and the highest among women with elementary education.

Based on BDI postnatal depression affected only 14.5% of married women and as many as 48% of single women. Based on EPDS this coefficient was respectively 34.5% and 64%.

14.2% of the women who declared very good living conditions suffered from depression (19% based on EPDS); 20.4% of patients with good living conditions (EPDS: 42.8%). 80% of women who declared insufficient living conditions suffered from depression (EPDS:100%).

13.5% of women according to BDI (and based on EPDS 26.3%), performing mental work suffer from postnatal depression. According to BDI 31.25% (and based on EPDS – 68.75%) of women performing physical labour suffer from depression. The coefficients are respectively 38.5% and 53.8% for unemployed persons.

Based on BDI, 35% of primipara women suffered from depression, of which 17.5% suffer from mild depression, 10% suffer from moderate increasing depression, and 7.5% severe depression; 15% of multipara women suffer from depression of which 12.5% suffer from mild depression and 2.5% suffer from severe depression. According to ESPD 50% of the primipara women suffer from depression of which 12.5% mild depression, 37.5% severe depression; 37.5% of multipara women suffer from depression of which 15% suffer from mild depression and 22.5% severe depression.

Based on BDI, postnatal depression occurs in 15.1% of women who planned pregnancy of which 9.4% suffer from mild depression, 3.8% suffer from moderate increasing depression and 1.9% severe depression; according to EPDS 32.1% of these women suffer from depression of which 11.3% suffer from mild depression and 20.8% severe depression. Based on BDI postnatal depression occurs in 44.4% of women who had not planned pregnancy of which 25.9% suffer from mild depression, 7.4% from moderate increasing depression, and 11.1% from severe depression; according to EPDS 66.7% of these women suffer from depression of which 18.5% mild depression and 48.2% severe depression.

Based on BDI 16.1% of the women who had attended birth school courses suffered from depression of which 9.7% suffered from mild depression, 3.2% from moderate increasing depression and 3.2% from severe depression; according to EPDS 29% of these women suffered

from depression of which 3.2% suffered from mild depression and 25.8% from severe depression. Based on BDI, 30.6% of women who had not attended birth school courses suffered from depression of which 18.4% suffered from mild depression, 6.1% from moderate increasing depression, and 6.1% from severe depression; according to EPDS 53.1% of these women suffered from depression of which 20.4% mild depression and 32.7% severe depression.

It was noted, based on BDI, that 22.7% of women with a normal course of pregnancy suffered from postnatal depression of which 16.7% suffered from mild depression, 3% moderate increasing depression, and 3% severe depression; according to ESPD 41% of these women suffered from depression of which 15.2% suffered from mild depression and 25.8% severe depression. In the case of women with abnormal pregnancies, based on BDI, 35.7% of them suffered from postnatal depression of which 7.1% suffered from mild depression, 14.3% moderate increasing depression, and 14.3% severe depression; according to EPDS 57.1% suffered from postnatal depression of which 7.1% mild depression and 50% severe depression.

Based on BDI, 21.2% of women whose pregnancy ended with natural childbirth suffered from postnatal depression of which 13.5% suffered from mild depression, 3.85% moderate increasing depression 3.85% severe depression; following ESPD diagnosis 40.4% of these women suffered from depression of which 11.5% suffered from mild depression and 28.9% severe depression. 32.1% of the women who gave birth by Caesarean section, based on BDI, suffered from postnatal depression of which 17.9% suffered from mild depression, 7.1% moderate increasing depression, and 7.1% severe depression; based on ESPD – 50% of which 17.9% suffered from mild depression and 32.1% severe depression. (Tab. 1 – *next page*).

The chi-square test was applied for the purpose of determining whether the occurrence of postnatal depression is independent from each of the features of the surveyed women. The Pearson C contingency coefficient was applied for measuring the impact of the existing relations.

The chi-square test results and the corrected Pearson contingency coefficient are presented in the tables below. (Tab. 2 – *next page*).

Table 1. Distribution intensity of postnatal depression based on BDI / EPDS

DISTRIBUTION	BDI	EPDS
Assessing postnatal depression	No depression – 75%, mild depression – 15%, escalating depression – 5%, severe depression – 5%	No depression – 56%, mild depression – 14%, severe depression – 30%
Assessing postnatal depression in each hospital	Ligota hospital: mild depression – 22.5%, moderate escalating – 10%, severe depression – 7.5% Bogucice hospital: mild depression – 7.5%, severe depression – 2.5%	Ligota hospital: mild depression – 17.5%, severe depression – 45% Bogucice hospital: mild depression – 10%, severe depression – 15%
The occurrence of postnatal depression depending on whether pregnancy was planned or not	Planned pregnancy: mild depression – 9.4%, moderate increasing depression, severe depression – 1.9% Not planned pregnancy: mild depression – 7.4%, moderate increasing depression, severe depression – 11.1%	Planned pregnancy: mild depression – 11.3%, severe depression – 20.8% Not planned pregnancy: mild depression – 18.5%, severe depression – 48.2%
Occurrence of postnatal depression depending on pregnancy course	Normal pregnancy: mild depression – 16.7%, moderate increasing depression – 3%, severe depression – 3% Abnormal pregnancy: mild depression – 7.1%, moderate increasing depression – 14.3%, severe depression – 14.3%	Normal pregnancy: mild depression – 15.2%, severe depression – 25.8% Abnormal pregnancy: mild depression – 7.1%, severe depression – 50%
Occurrence of postnatal depression depending on delivery methods	Natural childbirth: mild depression – 13.5%, moderate increasing depression – 3.85%, severe depression – 3.85% Caesarean section: mild depression – 17.9%, moderate increasing depression – 7.1%, severe depression – 7.1%	Natural childbirth: mild depression – 11.5%, severe depression – 28.9% Caesarean section: mild depression – 17.9%, severe depression – 32.1%

Table 2. Dependence between the occurrence of postnatal depression based on BDI / EPDS and the X feature

BDI				EPDS			
Feature X	Test result	Critical value	Corrected Pearson contingency coefficient	Feature X	Test result	Critical value	Corrected Pearson contingency coefficient
Age	3.4483	3.3251	0.2347	Age	1.8996	1.6354	0.181
Education	28.4244	3.3251	0.5912	Education	18.2417	1.6354	0.5122
Marital Status	13.983	0.3518	0.4904	Marital Status	6.7121	0.1026	0.3652
Living conditions	18.8474	1.6354	0.5191	Living conditions	19.7787	0.7107	0.5453
Type of work	8.2794	1.6354	0.364	Type of work	10.2427	0.7107	0.4126
History of births	6.4	0.3518	0.346	History of births	2.1465	0.1026	0.2122
Planned pregnancy	8.8143	0.3518	0.4005	Planned pregnancy	8.9533	0.1026	0.4165
Birth school	2.1242	0.3518	0.2045	Birth school	6.3226	0.1026	0.3553
Normal pregnancy	6.811	0.3518	0.3561	Normal pregnancy	3.3425	0.1026	0.2629
Delivery method	1.3187	0.3518	0.1619	Delivery method	0.8936	0.1026	0.138

As $\chi^2 \geq \chi_a^2$ for all statistical tests then the occurrence of postnatal depression, based on BDI and EPDS, depends on all specified X features.

The statistical tests proved that the occurrence of postnatal depression, based on BDI, among the 80 surveyed women is most dependent on

the education and marital status of the patients, and the least dependant on the delivery method, birth school, and age. Whereas, the occurrence of postnatal depression, based on EPDS, mostly depends on living conditions and education, and is least dependant on the delivery method, age, and patients' history of births.

DISCUSSION

The issue of mood disorder and of the mental disorders associated with pregnancy and delivery have been known for ages. Statistical research proves that as many as 80% of women experience mood swings during pregnancy and after giving birth to a child, however, insufficient attention has been paid to this problem. Not until the 4th edition of the DSM classification of the American Psychiatric Association has the term "mental disorders originating after giving birth" been mentioned, thus emphasising, at the same time, their different character. The first analysis and classifications appeared which allowed assessing the mental state of a woman in this particular period of her life [7].

As all scientific research, also this analysis leads to the setting of concrete conclusions, which may be used in a broader context in the future. According to the author of this paper, the conclusions obtained from such an analysis should serve as a substantial basis for formulating methods of early diagnosis of postnatal disorders and their treatment.

The frequency of postnatal depression occurrence in examined patients, based on BDI – 25%, based on EPDS – 44%, mildly differs from the data of the quoted sources (10–15%). According to Leonardou et al. [8] postnatal depression develops in 12.4% of mothers. Similarly, Fallgater et al. [9] assessed the frequency of postnatal depression occurrence from 10 to 15%. The risk of depression in women, who suffered from depression earlier, increases during the period of childbirth to 25% [10]. The observation obtained during the research indicating towards a positive correlation between affective disorders and the coexistence of psychosocial risk factors has been confirmed in literature [11]. The psycho-socio-economic risk factors discovered in a large number of women suggest the large significance

of the cognitive component in the occurrence of affective disorders as a reaction to distress [12].

It has been demonstrated that depressive disorders occur more frequently in women of a lower level of education. Some studies support this finding [13]. On the other hand, some others argue, that such a correlation does not exist [14].

The problem of postnatal depression concerns more often women of a low income status, i.e. poor living conditions. Similar conclusions were obtained by M. Wasilewska-Pordes [14]. Poor living conditions are associated with financial problems causing additional stress, decreasing the feeling of stability and safety which in consequence leads to the occurrence of affective an unsupportive partner [15].

The next factor favouring disorder occurrence is the marital status. The marital status is one of the significant factors responsible for postnatal depression occurrence, which has been confirmed by many scientists. Bilszta et al. [16] prove, that women without husbands facing single parent upbringing are placed in the high risk group of postnatal emotional disorders. However, they add that women with unsupportive partners were at an increased risk of elevated antenatal EPDS scores compared to single/unpartnered women. According to Wasilewska – Pordes the risk decisive factor is not the marital status, but the significance of a continued or discontinued marriage relation for the woman, myths associated with delivering an illegitimate child, or a continued unofficial relationship that has been transferred by the generative family.

In spite of the opinions presented by literature there is no confirmed connection between the age of the patient and the possibility of disorder development of a depressive character. The issue of age factor conditioning postnatal depression occurrence is a disputable due to the contrary results obtained by various scientists. In the paper of Boyce and Hickey the occurrence of depression in young women has been demonstrated. However, contrary results were obtained by Glavin et al. [17]. In their works, older women were more susceptible to the occurrence of postnatal depression. According to the results presented in this paper, attending birth school courses also has no impact on the frequency of postnatal depression occurrence. The next factor, which in the light of the performed analysis

does not correlate with the depression disorder complex, is the delivery method.

The analysis of the character of affective disorders sets a course for prophylactic programs aimed at pregnant women awaiting childbirth. This would generate long term benefits for newly born children who would bond their ties with their mothers. Preserving the correct character of this relationship strictly determines the emotional and cognitive development of the child. Caring for the child while in severe depression has its impact on the child's psyche. Mental disease disrupts the process of creating ties between the mother and her child. Therefore, due to these reasons, it is significant to organise prophylactic and education programs, obtain an early diagnosis of those women who bear the burden of perinatal risk disorder as well as aid and support them. The correct diagnosis of emotional disorders allows implementing effective psychotherapy.

The correct treatment of mood changes and any other forms of mental disorders associated with childbirth, and the ability to recognise each phase, which is just a short-term condition from those that lead to serious and long term mental changes, should be the key to understanding and prophylactics of any activities in this area.

CONCLUSIONS

1. The research conducted on the basis of the BDI questionnaire proved that 25% of the surveyed women suffered from postnatal depression of which 15% suffered from mild depression, 5% from moderate depression and, 5% from severe depression.
2. The results obtained on the basis of the EPDS questionnaire show that 44% of the women suffered from postnatal depression after childbirth of which 14% suffered from mild depression, and 30% had severe depression.
3. In respect to all the analysed changeable features correlating in a significant manner with postnatal depression were education, marital status and living conditions.
4. The delivery method, participation in birth school courses and the patient's age had the least impact on the occurrence of postnatal depression in the surveyed women. The surveyed women who experienced postnatal

depression stated that the main symptoms which occurred were sadness, pessimism, a feeling of unhappiness, discontent, tearfulness or anxiety.

5. The most frequent symptoms of postnatal depression occurring in the patients, based on BDI, were: sadness, loss of hope, discontent, irritation, sleeping disorder, lack of interest in sex.
6. The most frequent symptoms of postnatal depression in patients, based on EPDS, were: self-accusation, fright, and panic without cause, sleep disorder, helplessness, feeling of loneliness and unhappiness, weeping, fear and anxiety.

REFERENCES

1. Seyfried LS, Marcus SM. Postpartum mood disorders. *Int Rev Psychiatr.* 2003; 15(3): 231–242.
2. Abou-Saleh MT, Ghubash R, Karim L, Krymski M, Bhai I. Hormonal aspects of postpartum depression. *Psychoneuroendocrino.* 1998; 23(5): 465–475.
3. Poobalan AS, Aucott LS, Ross L, Smith WCS, Helms PJ, Williams JHG. Effects of treating postnatal depression on mother-infant interaction and child development: Systematic review. *Brit J Psychiat.* 2007; 191(5): 378–386.
4. Moehler E, Brunner R, Wiebel A, Reck C, Resch F. Maternal depressive symptoms in the postnatal period are associated with long-term impairment of mother-child bonding. *Archives of Women's Mental Health.* 2006; 9(5): 273–278.
5. Beck A. Beck Depression Inventory, Harcourt, 1996.
6. Cox JL, Holden JM, Sagovsky R. Postnatal Depression – Edinburgh Postnatal Depression Scale (EPDS). *Brit J Psychiat.* 1987; 150: 782–786.
7. Cox JL, Murray D, Chapman G. A controlled study of the onset, duration and prevalence of postnatal depression. *Brit J Psychiat.* 1993; 163: 27–31.
8. Leonardou AA, Zervas YM, Papageorgiou CC, Marks MN, Tsartsara EC, Antsaklis A, Christodoulou GN, Soldatos CR. Validation of the Edinburgh Postnatal Depression Scale and prevalence of postnatal depression at two months postpartum in a sample of Greek mothers. *J Reprod Infant Psych.* 2009; 27(1): 28–39.
9. Fallgater AJ, Schnizlein M, Pfuhlmann B, Heidrich H. Klinische Aspekte der Wochenbettpsychosen. *Nerv.* 2002; 73(7): 680–685.

10. Marcus SM, Depression during pregnancy: rates, risks and consequences – Motherisk Update 2008. *Can J Clin Pharmacol.* 2009; 16(1): 15–22.
11. Klier M, Rosenblum KL, Zeller M, Steinhardt K, Bergemann N, Muzik MA. Multirisk approach to predict chronicity of postpartum depression symptoms. *Depress Anxiety.* 2008; 25(8): 718–724.
12. Rich-Edwards JW, Kleinman K, Abrams A, Harlow BL, McLaughlin TJ, Joffe H, Gillman MW. Sociodemographic predictors of antenatal and postpartum depressive symptoms among women in a medical group practice. *J Epidemiol Commun H.* 2006; 60(3): 221–227.
13. Seguin L, Potvin L, St-Denis M, Loiselle J. Depressive symptoms in the late postpartum among low socioeconomic status women. *Birth.* 1999; 26: 157–163.
14. Wasilewska-Pordes M. *Depresja poporodowa u kobiet*; Kraków; 2000.
15. Segre LS, O'Hara MW, Arndt S, Stuart S. The prevalence of postpartum depression. The relative significance of three social status indices. *Soc Psych Psych Epid.* 2007; 42(4): 316–321.
16. Bilszta JLC, Tang M, Meyer D, Milgrom J, Ericksen J, Buist AE. Single motherhood versus poor partner relationship: outcomes for antenatal mental health. *Aust Nz J Psychiat.* 2008; 42(1): 56–65.
17. Glavin K, Smith L, Sorum R. Prevalence of postpartum depression in two municipalities in Norway. *Scand J Caring Sci.* 2009; 23(4): 705–710.