Original Article

The Role of Emotional Intelligence and Postpartum Depression in Predicting Mothers' Satisfaction with Quality of Co-Operation with Obstetricians and Midwives

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Abstract

Background: pregnancy is associated with numerous physical, physiological and endocrinological changes, with an immediate impact on the psychological status of women, during pregnancy and postpartum period. Postpartum depression is the most common psychological disorder that negatively affects any activity that a pregnant woman has to deal with, possibly the perceived quality of the perinatal healthcare services provided as well. The association of emotional intelligence with satisfaction and perceived quality of perinatal healthcare services is an area in which great interest has been attributed internationally.

Aim: The aim of this study was to explore the impact of postpartum depression and emotional intelligence on women's satisfaction with perinatal healthcare services and perceived quality of the cooperation between women and obstetrician/midwife.

Sample and methods: An anonymous and self-administered questionnaire that included the Edinburgh Postnatal Depression Scale (EPDS) and the Wong Law Emotional Intelligence Scale (WLEIS) has been distributed to a sample of 543 women while they were at the outpatient waiting room to have their regular postpartum assessment, six weeks following their delivery.

Results: postpartum depression's prevalence in our sample reaches 28%. Women's labour experience is perceived to be worse in women with postpartum depression, as well as perceived quality of co-operation with the obstetricians and midwives. Furthermore, women with post-partum depression, record lower levels of emotional intelligence. It was found that EPDS score predicts satisfaction with quality of midwives' services in the sample of women who have delivered (either by caesarean section or normally), while WLEIS and ROE scores predict satisfaction with quality of obstetricians' services. In the sample of women who delivered their child by caesarean section EPDS and WLEIS score predict satisfaction with quality of obstetricians' services.

Conclusion: Post-partum depression and emotional intelligence are major components of mothers' satisfaction with the quality of co-operation with obstetricians and midwives.

Keywords: Emotional Intelligence, Post-partum Depression, Perceived Quality, Perceived Satisfaction, Perinatal Healthcare Services, Obstetricians, Midwives

Background

Pregnancy is associated with numerous physical, physiological and endocrinological changes, with an immediate impact on the psychological status of women, during pregnancy and postpartum period (Areias et al., 1996). Postpartum depression is the most common psychological disorder and negatively affects any activity that a pregnant woman has to deal with, possibly the perceived quality of the perinatal healthcare services provided as well (Smith, 2001).

The clinical onset of postpartum depression is rapid while the majority of episodes are developing within the first two weeks after delivery. The symptomatology is similar to that observed in adults with major depressive disorders (Stamouli, 2001). The most prominent characteristics of postpartum depression include: major depressive mood, decreased cognitive and motor functions, increased concern and anxiety even about insignificant matters, difficulty in commanding everyday duties, hyperarousal, feeling of guilt and suicidal tendencies (Sadock BJ & Sadock V, 2001).

Postpartum depression is a common and severe disorder that can endanger mothers' and neonates' lives. The prevalence of postpartum depression in Cyprus ranges between 13.7%-21.3%, varying according to the diagnostic tool used for its assessment (Moraitou et al., 2010). The prevalence is usually underestimated, since women with postpartum depression, instead of seeking for social and psychological support, tend to get isolated. Consequently, it is precious for the healthcare providers (midwives, obstetricians, paediatricians), who come across and work together with the new mothers, to be able to detect these signs early in an effort to prevent and early diagnose and treat this disorder (Stamouli, 2001).

Psychosocial factors that exist during pregnancy and postpartum, like depression and decreased social support, may lead to decreased perceived satisfaction with the care provided. In addition, labour's anxiety in association with an anxious personality of the mother, contribute to a negative labour experience and dissatisfaction with the emotional aspects of the care provided (Britton, 2006; Haines et al., 2013). It is also evident that, women with postpartum depression report lower levels of satisfaction with perinatal healthcare services provided (Smith, 2001).

The association of emotional intelligence with satisfaction and perceived quality of perinatal healthcare services is an area in which great interest has been attributed internationally. Emotional intelligence is a chain of capabilities (verbal or not) that enable a person to override, recognise, express, understand and evaluate his own and other people's feelings, in an effort to direct his thoughts and responses in a successful direction of adjustment to the requirements and pressures exerted by the environment (Van Rooy & Viswesvaran, 2004; Kafetsios & Zampetakis, 2008). It is the ability to rationalise feelings, facilitating thought, promoting the emotional and cognitive maturation (Mayer et al., 2004). It consists of four dimensions: self-emotion appraisal (SEA), other's emotional appraisal (OEA), regulation of emotion (ROE), use of emotion (UOE) (Wong et al., 2002).

People with higher levels of emotional intelligence, monitor better their own and other people's feelings, use them to capitalize their thoughts and deal with them in a more effective way. They possess better social skills and interactions, while usually they deviate away from problematic behaviours (aggressive, drug abuse etc.). They more easily achieve aims and goals set, especially if they are strongly motivated (Mayer, 2004).

The levels of emotional intelligence obviously vary among different people and among different healthcare settings. In the literature, it was found that healthcare providers' individual emotional intelligence is relating to the provision of individualised care, based on the individual needs and particularities of each patient (Wong & Law, 2002) and with higher scores of patients' satisfaction and perceived quality of healthcare services provided.

The role of emotional intelligence as a factor that influences success in life events was established in 1990. It may have a major impact in the field of healthcare, influencing the individual health care provider's characteristics or level of intelligence (Birks &Watt, 2007). There is definitely a great prospect of research in this area. It is evident from the literature review, that women's low satisfaction scores with healthcare services, is due to inadequate psychosocial (23%), rather than medical services (18%) (Hildingsson & Rådestad, 2005). Healthcare providers with higher levels of emotional intelligence, are able to comprehend the emotion language of their patients, thus facilitating history taking, setting the correct diagnosis and providing early the most appropriate treatment.

The patients' compliance to the suggested treatment is expected to be higher in this way, as this will be more individualized, fitting patient's own personality characteristics (Birks &Watt, 2007).

The ability of healthcare providers to regulate emotions in both themselves and in others to understand and manage patients' emotions is a vital skill. It reinforces individualized care, which is client-centered and upgrades the relationship between the patient/user and provider of healthcare services (Wagner et al., 2002; Birks &Watt, 2007).

The aim of this study was to explore the impact of postpartum depression and emotional intelligence on women's satisfaction with perinatal healthcare services and perceived quality of the cooperation between women and obstetrician/midwife.

Methods

Study design

This is a descriptive correlational study. An anonymous and self-administered questionnaire has been used, which was distributed to the women while they were at the outpatient waiting room to have their regular postpartum assessment and was returned anonymously in the provided boxes allocated at the midwives' working station to assure anonymity of the participants.

Ethics

The Cyprus National Bioethics Committee granted ethical approval for this study (EEBK/EP/2013/01/08). Women were approached by the researchers and were given a brief explanation for the purpose and the aim of the study. A written informed consent has been provided.

Setting and sample

A convenience sample was used in this study. Mothers who met the following inclusion criteria were selected to participate in this study: (1) willingness to participate; (2) age ≥ 18 years old; (3) ability to speak and read Greek; and (4) gave birth in a public hospital in any of the five districts of Cyprus Democracy (Nicosia, Limassol, Larnaca, Paphos and Famagusta). The participants' informed consent was obtained by signing a covering letter that explained the purpose of this research. Data collection was conducted between January-December 2014).

Procedure

An anonymous and self-administered questionnaire was used, which was distributed to the women while they were at the outpatient waiting room to have their regular postpartum assessment. The face and content validity of the questionnaire were explicitly assessed through feedback from a panel of experts (researchers, health-care professionals, and academics) who reviewed the questionnaire and confirmed its final version with minor wording changes. A pilot test of the questionnaire was carried out before its implementation in our study. The questionnaires collected for the pilot study were not used in the present paper.

Measures

The first part of the questionnaire included questions about the sociodemographic characteristics of the sample such as age, gender, education, marital status (Sapountzi et al., 2009) and the second part included the Edinburgh Postnatal Depression Scale (EPDS) and the Wong Law Emotional Intelligence Scale (WLEIS) that have been provided six weeks following delivery. Since 1980, while research in the field of

postpartum depression began, a number of reliable and valid tools were used for its assessment. The more frequently used questionnaires were the Beck Depression Inventory (BDI) (Beck et al., 1961) and the Edinburgh Postpartum Depression Scale (EPDS) (Cox et al., 1987). The latter tool, is used to assess the risk of a woman in developing postpartum depression, while the use of different tools in combination, increases the accuracy of the results (Moraitou & Galanakis, 2006).

The Edinburgh Postpartum Depression Scale, EPDS, is self-completed by the women and evaluates depressive symptoms in women during postpartum period. It consists of 10 statements that describe symptoms relevant to postpartum depression by using a four-point scale for each statement. Each statement is graded between 0-3, with the final total score ranging from 0-30. Scores ≥ 12, indicate high risk for developing postpartum depression (Cox et al., 1987). Leonardou et al. in their validation study in a Greek speaking population found 11/12 as the optimal cut-off point for the use of the scale by primary care physicians, in order to detect postpartum depression (Leonardou et al., 2009). On the contrary in another research (Vivilaki et al., 2009), the authors have proposed a cut-off value 8/9 that is considered to be low enough and may include a lot of false positive cases (Leonardou et al., 2009).

For the assessment of the emotional intelligence, the Wong and Law Emotional Intelligence Scale (WLEIS) was used. It evaluates the four different factors that evaluate emotional intelligence. The participants are called to rate each item by using a Likert that ranges from 1-7 (1=completely disagree and 7=completely agree). The higher the score, the higher is the level of emotional intelligence [20, 21]. Cronbach's alpha coefficient for the EPDS was **0**.82 (95%CI: 0.79-0.84, p<0.001) while for the WLEIS was 0.80 (95%CI: 0.76-0.82, p<0.001).

Women were also asked to answer to the following questions: "from 0 (very difficult) to 10 (very easy) how do you rate the experience of labour?", "from 0 (very dissatisfied) to 10 (very satisfied) how do you rate quality of maternity services provided to you?", "from 0 (very dissatisfied) to 10 (very satisfied) how do you rate quality of obstetrician services provided to you?", "from 0 (very dissatisfied) to 10 (very satisfied) how do you rate quality of midwifery services provided to you?" and "from 0 (very dissatisfied) to 10 (very satisfied) how do you rate quality of administrative services provided to you?"

Statistical analysis

All items were coded and scored, and the completed questionnaires were included in the data analysis set. Individual unanswered items were excluded from the analysis. IBM-SPSS Statistics 22 was used to analyze the data. The chi-square test was used to explore the existence of a statistically significant relationship between the categorical variables. The t-test was used to assess whether the means of two groups were statistically different from each other. Values < 0.05 were considered to be statistically significant, unless otherwise stated. A series of linear regression analyses were undertaken.

Results

Participants

A total of 543 women participated in this study, six weeks after their delivery. As it can be seen in Table 1, the majority of the women were Cypriots, employees in the private sector, married and of high education level. The mean age of the sample was 28.94±5.21 and the median was 29 years old. Half of the participants (n=260, 48%) had given birth for the first time while 34.7% for the second time, and 17.3% over the third. One in three women (35%) has reported a premature delivery. For 306 (56.7%) mothers, their last childbearing was a vaginal birth and 234 (43.3%) delivered their child by caesarean section (CS).

In total the mean experience of women from the labour was 6.25±2.73, while the mean satisfaction from the obstetrician and midwifery services was high (8.55±1.69 vs 9.08±1.40) as opposed to satisfaction with administrative services (7.79±2.12).

Emotional intelligence

The mean score in WLEIS scale is 90.68±14.87 (Min: 16 and Max: 112). According to Table 2, women with a depressive symptomatology had statistically significant lower emotional intelligence (83.70, 93.58; p<0.001), self-emotional appraisal, other emotion appraisal, use of emotion and regulation of emotion. Their labour's experience was worse (5.73, 6.46; p=0.006), as well as their satisfaction with the quality of obstetricians' (8.45, 8.68; p=0.036) and midwives (8.86, 9.21, p=0.031) services.

Prevalence of postpartum depression and its relation with emotional intelligence

Based on the validation of EPDS Scale to a Greek population the cut-off score for postpartum depression is 11/12 (Leonardou et al., 2009). According to this, postpartum depression's prevalence in our sample reaches 28%. On Table 3, a negative correlation is noted between the scores of the Edinburgh Postnatal Depression Scale and the total score in WLEIS scale and its subscales. The correlation of the WLEIS scale with the cooperation with the obstetric and midwife was slightly positive, as well as with WLEIS' subscales. The correlation of WLEIS scale was also weak with age, labour's experience.

Table 3 shows that there is a negative correlation between the total score of Edinburgh Postnatal Depression Scale and the total scores of WLEIS factors, while the age of women is not correlated with OAE and ROE. Women's satisfaction with quality of obstetricians' care correlates positively with WLEIS score and total scores of WLIES factors. On the contrary women's satisfaction with quality of midwifery care correlates positively only with WLEIS and SEA.

In Table 4, it was found that EPD score predicts satisfaction with quality of midwives' services in the sample of women who have delivered (either by caesarean section or normally), while WLEIS and ROE scores predict satisfaction with quality of obstetricians' services. In the sample of women who delivered their child by caesarean section EPD and WLEIS score predict satisfaction with quality of obstetricians' services. Additionally in the sample of women who had a vaginal birth OAE and ROE score predict satisfaction with quality of midwives' services.

Table 1: Sample's demographic characteristics

Variable	N	%
Hospital		
Nicosia	343	48.0
Limassol	166	23.2
Larnaca	65	9.1
Paphos	72	10.1
Famagusta	69	9.7
Profession		
Civil Servant	119	16.7
Private Servant	201	28.2
Unemployed	180	25.2
University student	52	7.3
Worker	88	12.3
Housewife	45	6.3
Other	28	3.9
Marital status		
Cohabiting	148	20.8
Widowed	80	11.3
Divorced/separated	6	0.8
Married	403	56.8
Unmarried	73	10.3
Education		
Elementary	12	1.7
Secondary (gymnasium)	23	3.2
Secondary (lyceum)	153	21.5
College	278	39.0
University	194	27.2
Master degree	49	6.9
PhD degree	4	0.6

ROE: Regulation of Emotion

Table 2: differences in mean scores between women with and without postpartum depression

Parameter	Depression		
	YES (n-mean value)	NO (n-mean value)	p-value
Age	148 (29.21±5.31)	380 (28.88±5.19)	0,512
Labour's experience	144 (5.73±2.79)	375 (6.46±2.67)	0.006
Satisfaction with quality of Obstetrics' services	145 (8.45±1.82)	377 (8.68±1.54)	0.036
Satisfaction with quality of Midwives' services	146 (8.86±1.79)	376 (9.21±1.13)	0.031
WLEIS	133 (83.70±16.14)	349 (93.58±13.44)	<0.001
SEA	140 (21.77±4.76)	371 (24.11±3.89)	<0.001
OAE	140 (21.70±4.33)	371 (23.22±3.87)	<0.001
UOE	144 (20.56±4.78)	366 (23.31±4.06)	<0.001
ROE	140 (19.88±4.20)	369 (22.64±4.38)	<0.001

SEA: Self Emotional Appraisal

OAE: Other Emotion Appraisal

UOE: Use of Emotion

Table 3: correlations with WLEIS scale and its subscales

Scales	WLEIS	SEA	OAE	UOE	ROE
Total Score in Edinburgh Postnatal Depression Scale	-0.348 (<0.001)	-0.318 (<0.001)	-0.212 (<0.001)	-0.304 (<0.001)	-0.342 (<0.001)
Age	0.123 (0.006)	0.102 (<0.019)	NS	0.107 (0.014)	NS
Childbirth's experience	0.110 (0.015)	0.097 (0,027)	NS	NS	0.107 (0.015)
Satisfaction with quality of perinatal healthcare services	NS	0.086 (0.049)	NS	NS	NS
Satisfaction with obstetrics' services	0,169 (<0,001)	0.174 (<0.001)	0.088 (0.043)	0.136 (0.002)	0.152 (0.002)
Satisfaction with midwives' services	0.103 (0.003)	0.145 (0.001)	NS	NS	NS

SEA: Self Emotional Appraisal

OAE: Other Emotion Appraisal

UOE: Use of Emotion

ROE: Regulation of Emotion

Table 4: EPD, WLEIS and WLEIS factors as predictors of women's satisfaction with quality of obstetrics and midwifery care

	EPD	WLEIS	OAE	ROE
Total sample				
Satisfaction with obstetrics' services		beta=0.159, p=0.001		beta=0.150, p=0.029
Satisfaction with midwives' services	beta=-0.130, p=0.007			
Caesarean section delivery				
Satisfaction with obstetrics' services	beta=-0.124, p=0.076	beta=0.179, p=0.011		
Normal delivery				
Satisfaction with obstetrics' services				
Satisfaction with midwives' services			beta=0.364, p=0.001	beta=-0.171, p=0.050

EPD: Edinburgh Postnatal Depression Scale, SEA: Self Emotional Appraisal, OAE: Other Emotion Appraisal, UOE: Use of Emotion, ROE: Regulation of Emotion

Discussion

Despite the great interest and research that has taken place in the field of quality and women's perceived satisfaction by the perinatal healthcare services worldwide, to our knowledge, this is the first study to explore the role that emotional intelligence and postpartum depression play in this field. The role of emotional intelligence and postpartum depression in predicting mothers' satisfaction with quality of co-operation with her obstetrician and her midwife, arise from this work, which is of global interest.

In this quite large and representative sample of women from all the public hospitals of Cyprus, the demographic profile of the women-consumers of the perinatal healthcare services is assigned. The vast majority were from Nicosia, where a tertiary perinatal healthcare unit exists and coexists at the same hospital with the only tertiary Neonatal Intensive Care Unit in Cyprus, where all the complicated obstetrical cases with high risk of premature delivery, are referred.

Most of the women were employed in the private sector (28.2%), while a significant percentage of them were unemployed (25.2%), reflecting the social status of women in Cyprus who use the public healthcare services, following the financial crisis, combined with the percentage of unemployment in Cyprus for 2014 varied from 15.44% to 16.6% (European Central Bank, 2015). This finding was expected since in Cyprus, women of higher socioeconomic status tend to deliver at the private sector with their private obstetrician, while the public sector is mainly used by the unemployed, the women with a lower socioeconomic status or even by public employees who have free of charge access to the healthcare services.

Almost half the women were married, with only 10.3% being single, indirectly suggesting that Cyprus, due to its smaller scale as a country compared to other European countries, is more conservative. A very high proportion though (73.7%), have tertiary education. During the last year, following Cyprus' unfortunate first place in caesarean section deliveries in the global ranks (WHO, 2011), there has been a great initiative by the Cyprus Midwives Association, towards to informing women about the benefits of vaginal delivery and thus, empowering them in seeking for vaginal delivery instead of caesarean section. Despite the fact that this initiative has contributed to changing women's views about vaginal delivery and thus becoming more supportive for this mode of delivery, *statistics suggest there is still a long way to go*. It is generally accepted, that the percentage of caesarean sections in the private sector is much higher than that in the public sector (43.53%), which is the main factor that raises our national percentage range in caesarean sections to 50.9% (WHO, 2011, Tsetsila et al, 2010).

The aetiology for the high prevalence in caesarean sections could vary among different countries and cultures. Generally, caesarean is widely preferred by pregnant women who may be afraid of pain during birth due to uterine contractions, or because they can arrange it at their or their obstetrician's more convenient time, or because they decrease in this way the risk of developing urinary incontinence problems due to prolapse and can also earlier return to sexual life. It is also considered a very safe procedure without any specific unpredictable complications and because of the high incidence of law sues; obstetricians tend to prefer it (Sapountzi-Krepia et al., 2011, WHO, 2015).

In Cyprus, the main reason for so high prevalence in caesarean sections is the shortage of midwives and thus the failure to staff the private perinatal healthcare units with adequate number of midwives, to support women during the time consuming procedure of vaginal delivery. As a result, the obstetricians, due to their busy sketchual, more easily tend to take women to a caesarean section (Wang et al., 2012, Sapountzi-Krepia & Vehviläinen-Julkunen, 2006).

Post-partum depression is expected to negatively affect certain different parameters in the field of perceived satisfaction and quality of perinatal healthcare services (Rudman & Waldenstrom, 2007). This is obviously seen in this work. The satisfaction

from the obstetrician is significantly lower among women with post-partum depression, compared to those without (8.45 vs 8.68; p<0.036). Lower satisfaction from the midwives' services is observed (8.86 vs 9.21; p=0.031) and the general labour's experience is lower in women with postpartum depression, compared to those without (5.73, vs 6.46; p=0.006).

Postpartum depression is a condition that appears within two weeks following delivery (Stamouli, 2000) and thus may not be present at the period of pregnancy and especially when a woman is in labor. Thus, her labour's experience was good and as such is graded. It is after the delivery, that the stress due to all the increased duties in bringing up a newborn arises, that may stimulate the appearance of postpartum depression, with all the associated negative feelings. After all, the fact that all the emphasis of the perinatal healthcare services is based on the period of pregnancy and the experience of labour, leaving completely behind the postpartum period, is widely discussed in the literature (Rudman & Waldenstrom, 2007, Sapountzi-Krepia et al., 2010). This is something that needs to be changed and should be seriously taken into account by people responsible for implementing changes in the healthcare system that afford the perinatal services. Midwives can visit new mothers at their houses, as part of community service, offering to them both practical (breastfeeding assistance and guidance, episiotomy care, care of the newborn etc.) and psychosocial support.

Despite the weak but statistically significant correlation between emotional intelligence scores and the satisfaction with the obstetricians and midwives' services (r=0.169, p<0.001; r = 0.103, p=0.003), this can be used only for women who delivered by a caesarean section (b=0.179, p=0.011). This could probably arise from the fact that healthcare providers with higher levels of emotional intelligence may more effectively offer individualised care, based on the individual needs and particularities of each patient (Birks & Watt, 2007), but also from the fact that higher scores of emotional intelligence are positively related to the

quality of interactions with other people (Mayer et al., 2004).

The negative relation that holds between the emotional intelligence levels and postpartum depression (r =-0.348, p<0.001), has already been verified in the literature (Ebrahimi et al., 2014). Nevertheless, this may have an important practical implication. Emotional Intelligence can be used by healthcare workers as a screening tool, to identify expectant mothers who are in high risk for developing postpartum depression. Thus, healthcare workers should be trained to interpret emotional intelligence tests that may be carried out to pregnant women, in order to early detect women at high risk for developing postpartum depression, and provide appropriate individualized care.

It may be useful to train healthcare workers and pregnant women to use emotional information to guide thinking and behavior especially after such a stressful event as pregnancy and delivery. This may help to reduce the prevalence of postpartum depression, by developing skills in handling stressor stimuli like infant care, that usually appear in the postpartum period and to buffer the effects of stressful events (Ebrahimi et al., 2014), in the case of pregnant women. On the other hand, healthcare workers may develop skills to offer more individualized care to women. Further research is needed in this area in order to verify its effectiveness.

Strengths and Limitations

Strength of this study is its large sample size as well as the long duration for which the research was held. Furthermore, the sample lacks racial diversity as the questionnaires were in Greek and were not translated in English. Thus, only Greek-Cypriot women could respond and not foreign women, which is a significant portion (almost 50%) of the women who use the public perinatal healthcare services. Moreover, women who suffered from an intrauterine embryo death, or those whose newborn died in the neonatal intensive unit, were excluded from the research. If they were not, the results could be different in all dimensions: perceived satisfaction from the perinatal healthcare services, postpartum depression and emotional intelligence levels.

Conclusions

Emotional intelligence and post-partum depression are predictors of women's satisfaction with the quality of co-operation with the obstetricians and midwives. Women's labour experience is perceived to be worse in women with postpartum depression, as well as their co-operation with the obstetricians and midwives. Furthermore, women with post-partum depression, record lower levels of emotional intelligence. Emotional Intelligence is positively correlated with the labour's experience and the satisfaction with the obstetricians' and midwives' services.

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