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ORIGINAL ARTICLE

Body image in breastfeeding women with depressive symptoms: a prospective study

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Abstract

The purpose of this prospective study was to investigate the relationship between body image perception and breastfeeding in puerperae with postpartum depression symptoms. The participants (147 healthy puerperae) completed The Edinburgh Postnatal Depression Scale (EPDS) and the Body Uneasiness Test (BUT-A and BUT-B), investigating body image perception and specific worries about particular body parts or functions. One month after discharge, new mothers participated in telephone interview concerning postpartum lactation practices. The subset of puerperae with EPDS score >9 also participated in psychological EPDS and BUT 6-month follow up. Mothers with EPDS score >9 (28/147, 19.04 %) had significantly higher scores on BUT-A Global Severity Index (0.69 ± 0.64 versus 0.37 ± 0.31, $p < 0.0001$) and on BUT-B Positive Symptom Distress Index (0.74 ± 0.57 versus 0.41 ± 0.42, $p < 0004$). In addition, the mothers with symptoms of depression were more likely (1:2) to interrupt full breastfeeding in the first month postpartum. At the 6-month follow up, the subset of new mothers with depression symptoms maintained elevated BUT-A and BUT-B scores, while EPDS >9 persisted in one-third of these. In conclusion, mothers with symptoms of depression have longlasting negative body image perception, persistent depressive symptoms, and they interrupt early full breastfeeding.

Keywords

Body image, lactation, postpartum depression

History

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Introduction

Women undergo adaptive physical and psychological changes during pregnancy and puerperium [1]. One frequently reported expression of these adaptations is that the breastfeeding pattern of women with depressive symptoms and negative body image is adversely affected [2].

This is relevant, considering that 9–16% of women suffer from postpartum depression [3] and that during pregnancy women experience substantial changes in their body shape and weight that result in significant alterations of their body image [4]. It has been hypothesised that during pregnancy, because of the body changes that occur, women's appraisals of their bodies are activated [5]. These appraisals draw upon extant body image attitudes and ideals. In drawing upon these ideals, the differences between how women ''perceive'' their appearance and their ''ideals'' of appearance are highlighted [5]. Given the current western ideals about body shape, which suggest that thin women are more beautiful [6]), during pregnancy women find themselves falling further from the cultural ideal of beauty. Thus, while body image satisfaction may decline, in turn, body dissatisfaction may lead to depression, increasing the risk of poor health outcomes for both mothers and their offspring and of adverse breastfeeding-related adaptations [5].

General body image research has documented a positive correlation between body dissatisfaction and stress [7]. Stress, may be physical and/or psychoemotional, is problematic in nursing mothers. Stress impairs the onset of lactation [8] as well as possibly affecting the success women have in maintaining a favourable milk supply. Moreover, depression associated with stress and negative body image may be mediated by breastfeeding, or breastfeeding may not be initiated because of stress and depression. One hypothesis is that postpartum depression develops when psychological stress in adaptation to pregnancy, delivery, and child care is added to insufficient social support and a biased attachment style that the woman originally has as a predisposing factor [9]. Other researchers remark that body dissatisfaction may lead to depression [10].

Research on this subject is scarce and the impact on reciprocal relationships between depressive symptoms, body image, and lactation is directly linked to puerperium, a period during which previously dormant psychological issues such as fears about physical changes, role adaptation, psychosocial stress, and mothering abilities come to the surface, resulting

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also of great importance to the psychology of lactation [11,12]. Nevertheless, evidence as to the nature of these changes is equivocal and reciprocal relationships should be studied to determine their validity. Based on previous research, we hypothesized that depressive symptoms would be negatively associated with great body image dissatisfaction and lactation discontinuation and that depressive symptoms and body image dissatisfaction would recover together. Therefore, the purpose of this study was to examine the associations between and the extent to which depressive symptoms and body image dissatisfaction affect breastfeeding success during the first month of life, according to WHO recommendations [13].

Methods

This prospective case control study was performed at the maternity wards of the Division of Perinatal Medicine of Policlinico Abano Terme, Abano Terme, Italy, performing approximately 1000 births per year with a caesarean delivery rate of 23%, between November and December 2013. The hospital where the study took place is located in an industrialized area supporting advanced educational levels, good socio-economic status, occupation, and low and late fertility. Institutional Review Board approval (Policlinico Abano Terme, Abano Terme) was obtained from all institutions before the study began.

The study group consisted of 147 consecutive mothers of singleton, healthy neonates delivered at term. Foreign women, women undergoing general anesthesia, women with psychological disorders in treatment, and women with infants hospitalized in NICU were excluded from the study.

After informed consent was obtained, they answered sociodemographic questions before and after pregnancy, obstetric history, smoking, psychological care, plane to lactate an infant without medical or obstetrical complications precluding routine discharge. The following data were also collected for the babies: gestational age, birth weight, sex and mode of delivery. For those willing to participate, the purpose of this study, the measurement of their psychological changes and the relationship with lactation performance was explained to them. A trained interviewer subsequently administered the EPDS [14] and the BUT [15].

The Edinburgh Postpartum Depression Scale, EPDS is a self-report questionnaire composed of 10 items scored in a four-point Likert scale (0–3), with a total score of 0–30 points, designed to assess pregnancy and postpartum depression. A higher score refers to a higher tendency for postpartum depression. A score >9 indicated to screen for a major depressive symptoms. Accordingly, the cutoff score was set at 9 points in the present study [14].

The BUT is a 71-item, self-administered questionnaire specifically designed to explore body shape and/or weight dissatisfaction, avoidance and/or compulsive control behaviors, detachment and/or estrangement feelings toward one's body, and specific sensations with regard to body parts, shapes, or functions in clinical and non-clinical populations. The term ''body uneasiness'' was used to describe not only body dissatisfaction but also other associated emotions, such as anxiety, alarm, trepidation, worry, mistrust, misgiving, doubt, suspicion, and embarrassment. The questionnaire is made up of two parts:

(1) BUT-A consists of 34 statements to which the participant gives a rating between 0 (never) and 5 (always). The scores are combined in a Global Severity Index and in 5 subscales resulting from factorial analysis: Weight Phobia (fear of being or becoming fat), Body Image Concerns (worries related to physical appearance), Avoidance (body image-related avoidance behavior), Compulsive Self-Monitoring (CSM, compulsive checking of physical appearance), and Depersonalization (feelings of detachment and estrangement toward the body).
(2) BUT-B is made up of 37 items arranged in eight factors concerned with specific aspects of particular body parts or functions. The scores are combined in a Positive Symptom Total, the number of symptoms rated higher than zero, in a PSDI, Positive Symptom Distress Index, the average rating of those items constituting the Positive Symptom Total and in 8 subscales resulting from factorial analysis: BUT•B, I Mouth, II Face Shape, III Thighs, IV Legs, V Harms, VI Moustache, VII Skin, and VIII Blushing [15].

The study on 2-day postpartum was performed while the mother waited for. The mother received a copy of the postpartum consent form, EPDS, and BUT questionnaires. Telephone interview on breastfeeding was done at 1 month post-partum. At interview, the mothers were asked to indicate with a yes/no response if they were still following exclusive breastfeeding, complementary breastfeeding or formula feeding. Despite recalls, 17 (14.22%) mothers did not respond to interviews. For EPDS and BUT follow up on 6-month postpartum, we mailed the questionnaires to the mothers, who presented at discharge symptoms of depression (EPDS >9), during the week of the 6-month postpartum and requested a return within 1 week. For those who did not return questionnaire after 2 weeks, the mothers were asked by phone to ensure the completeness of data. Despite recalls, 11 (39.28%) mothers did not respond to inventories.

All of the mothers taking part in the study were encouraged to breastfeed even while in the delivery room during the first minutes following delivery and in the rooming-in regimen organized by the hospital. Infants were breast-fed *ad libitum* and weighed every day. Mothers' extra milk was given by bottle to supplement breastfeeding. Infant feeding data were recorded according to the World Health Organization's classifications (exclusive breastfeeding was defined as feeding only maternal milk and nothing else; complementary breastfeeding was defined as offering breast milk and infant formulas; and exclusive formula feeding was defined as offering exclusively bottle-fed formula) (WHO, 1991) [13].

According to standard maternity routines, all healthy newborns are placed skin-to-skin with their mothers immediately after birth. The newborn remains on the mother's chest until the first breastfeeding is established or until the newborn falls asleep. Usually the partner of the woman is present during and after childbirth. Rooming-in is practiced at the maternity ward. Maternity rooms are created to facilitate an ''at-home-feeling'' and to allow parents to interact with

their newborn. Skin-to-skin contact with the newborns and frequent breastfeedings are encouraged.

Statistical analysis

For statistical analysis, categorical data were analyzed by the χ^2 test, while continuous data were analyzed by the Student's *t*-test using the Statistical Package for Social Sciences software for Windows, version 15.0 (SPSS Inc., Chicago, IL). A $p < 0.05$ was considered statistically significant.

Results

Table 1 lists the attributes of the participants according to the symptoms of postpartum depression scored by EPDS >< 9. We found that 28/147(19.04%) puerperae presented EPDS >9. Although comparable in anthropometrical and clinical characteristics and in breastfeeding practices at discharge, the mothers with symptoms of depression were more likely (1:2) to early interrupt full breastfeeding in the first month postpartum (53.57 versus 83.3%, $p < 0.001$).

Table 2 lists the BUT-A and BUT-B characteristics at discharge of the participants according to the symptoms of postpartum depression scored by EPDS >< 9. Mothers with EPDS score >9 had higher scores on BUT-A Global Severity Index (GSI, 0.69 ± 0.64 versus 0.37 ± 0.31, $p < 0.0001$) and on all of the BUT-A subscales, except subscale avoidance. Moreover, they had higher BUT-B scores, and the Positive Symptom Distress Index was significantly higher (PSDI, 0.74 ± 0.57 versus 0.41 ± 0.42, $p < 0.0004$) and on BUT-B related subscales, except subscales I (Mouth), II, (Face Shape), and VII (Skin).

Table 3 lists the BUT-A and BUT-B characteristics at discharge and at the follow up of the puerperae with symptoms of postpartum depression (EPDS >< 9). At the 6-month follow up, the subset of new mothers with depression symptoms maintained elevated BUT-A and BUT-B scores. At the same time, one third of these (5/17, 29.41%) maintained EPDS scores >9 (Table 1).

Table 1. Anthropometrical and clinical characteristics of new mothers with and without postpartum depressive symptoms.

Puerperae: 147	EPDS >9	EPDS <9	*p*
N (%)	28 (19.04)	119(80.95)	
Age (years)	$33.00 \pm 5{,}78$	33.50 ± 5.01	ns
Nulliparae	18 (64.28)	80 (68.97)	ns
Cesarean delivery	7 (25.00)	24(20.16)	ns
Male	16 (57.14)	65 (56.03)	ns
Breastfeeding at discharge:			
Exclusive	23 (74.19)	108 (93.10)	0.01
Complementary	5 (16.13)	7 (6.03)	ns
Formula	3 (9.68)	1 (0.87)	0.03
Breastbfeeding at 1st month:			
Missing		17 (14.22)	
Exclusive	15 (53.57)	85 (83.33)	0.001
Complementary	4 (14.28)	10 (9.80)	ns
Formula	9 (32.14)	7 (16.82)	0.001
EPDS 6-month follow up:			
Missing	11 (39.28)		
EPDS >9	5 (29.41)		

EPDS, Edinburgh Postnatal Depression Scale. ns, not significant.

Discussion

Focusing on body image and breastfeeding practices in mothers with depressive symptoms living in an industrial area of North-Eastern Italy, characterized by late and low fertility and high education and occupation, we found that new mothers with symptoms of depression tend to discontinue breastfeeding their infants and advert six months after postpartum longlasting body image dissatisfaction and in one-third of participants persistent depression symptoms.

Research on this subject is scarce and the impact on reciprocal relationships between depression symptoms, body image, and lactation is poorly understood [16]. There is evidence in non-pregnant populations that depressive symptoms are associated with greater body image dissatisfaction [17,18]; however, the relationship between these psychological constructs in newly delivered women is not well explored. Strang and Sullivan established that body dissatisfaction contributes to the ''critical nature of the postpartum period [19]. Thus, if during pregnancy, conflicts about body changes, alterations in roles, additions of responsibility, and concerns about a woman's own mothering abilities are prevalent, many of these concerns are directly linked to puerperium, a time during which previously dormant psychological issues such as fears about physical changes, role

Table 2. Body uneasiness Test-A and Test-B scores in new mothers with and without postpartum depressive symptoms.

Puerperae: 147	EPDS >9	EPDS <9	*p*		EPDS >9	EPDS <9	*p*
N (Mean ± SD)	28	119			28	119	
BUT-A:				BUT-B:			
GSI	0.69 ± 0.64	0.37 ± 0.31	0.0001	PSDI	0.74 ± 0.57	0.41 ± 0.42	0.0004
WP	1.03 ± 0.90	0.59 ± 0.57	0.001	I	0.45 ± 0.53	0.30 ± 0.42	0.09
BIC	0.85 ± 0.85	0.45 ± 0.42	0.0005	II	0.22 ± 0.40	0.17 ± 0.33	0.43
A	0.30 ± 0.49	0.12 ± 0.24	0.006	III	1.21 ± 1.00	0.58 ± 0.79	0.0002
CSM	0.69 ± 0.64	0.44 ± 0.34	0.003	IV	0.92 ± 0.90	0.49 ± 0.66	0.003
DD	0.41 ± 0.46	0.18 ± 0.24	0.0001	V	0.57 ± 0.77	0.30 ± 0.51	0.02
				VI	1.97 ± 2.09	1.28 ± 1.55	0.04
				VII	0.73 ± 0.84	0.50 ± 0.69	0.11
				VIII	0.99 ± 0.87	0.51 ± 0.62	0.0005

Data expressed as Mean ± Standard Deviation. EPDS, Edinburgh Postnatal Depression Scale. BUT, Body Uneasiness Test-A: GSI, Global Severity Index.

Subscales: WP, Weight Phobia; BIC, Body Image Concerns; A, Avoidance; CSM, Compulsive Self-Monitoring; D, Depersonalization.

BUT, Body Uneasiness Test-B: PSDI, Positive Symptom Distress Index.

Subscales: I, Mouth; II, Face Shape; III, Thighs; IV, Legs; V, Arms; VI, Moustache; VII, Skin; and VIII, Blushing.

Table 3. Six-months body uneasiness Test-A and Test-B follow up in new mothers with postpartum depressive symptoms.

EPDS >9	At discharge	At follow up*	*p*
Puerperae N (%)	28	17 (60.71)	
BUT-A:			
GSI	0.69 ± 0.64	0.78 ± 0.65	0.23
WP	1.03 ± 0.90	1.10 ± 0.78	0.36
BIC	0.85 ± 0.85	1.05 ± 0.85	0.08
A	0.30 ± 0.49	0.28 ± 0.34	0.44
CSM	0.69 ± 0.64	0.65 ± 0.48	0.85
DD	0.41 ± 0.46	0.34 ± 0.5	0.99
BUT-B:			
PSDI	0.74 ± 0.57	0.56 ± 0.33	0.279
I	0.45 ± 0.53	0.45 ± 0.41	0.716
II	0.22 ± 0.40	0.08 ± 0.23	0.230
III	1.21 ± 1.00	1,12 ± 0.85	0.733
IV	0.92 ± 0.90	0.57 ± 0.48	0.140
V	0.57 ± 0.77	0.33 ± 0.36	0.415
VI	1.97 ± 2.09	2.00 ± 1.94	0.956
VII	0.73 ± 0.84	0.88 ± 0.86	0.224
VIII	0.99 ± 0.87	0.51 ± 0.49	0.071

Data expressed as Mean ± Standard Deviation. EPDS, Edinburgh Postnatal Depression Scale.
BUT, Body Uneasiness Test-A: GSI, Global Severity Index.
Subscales: WP, Weight Phobia; BIC, Body Image Concerns; A, Avoidance; CSM, Compulsive Self-Monitoring; D, Depersonalization.
BUT, Body Uneasiness Test-B: PSDI, Positive Symptom Distress Index.
Subscales: I, Mouth; II, Face Shape; III, Thighs; IV, Legs; V, Arms; VI, Moustache; VII, Skin; and VIII, Blushing.
*Missing 11.

adaptation, psychosocial stress, and mothering abilities come to the surface, resulting also of great importance to the psychology of lactation [20].

Postpartum experience can be an emotional struggle for new mothers as they deal with maternal role demands and physical changes of postpartum [21] and depressive symptoms give an important indicator of women's emotional well-being. Research, indeed, shows depressive symptoms are higher for women in the first 6 weeks of postpartum [21]. Noteworthy, in this study, EPDS cores >9 were found in about 20% of new mothers delivered at term and at the start of breastfeeding and, differently than expected, at the 6th month depression symptoms persisted in one third of mothers. This study's findings are instead consistent with the larger body of research looking at a variety of female populations in which depressive symptoms early in puerperium have consistently been associated with body dissatisfaction [19,21]. In particular, Sullivan established that body dissatisfaction contributes to the ''critical nature of the postpartum period'' [19]. These findings are also congruent with Rubin's treatise in which childbearing is viewed as an embodied experience during which physical changes are intimately linked to perceptions and feelings about the body self [20]. Sudden and uncontrollable changes in body image, according to Rubin, are critical daily concerns during pregnancy and the early postpartum period [20]. The shape and sheer size of the body, muscle tone, and physical balance are among features that may vary on a daily and weekly basis. These unexpected changes force the new mother to adjust posture, daily activities, and even her dress. Body boundaries, that area psychologically separating self as a separate entity from the surroundings, change as a result of these physical changes. However, the nature of these disparities between newly delivered women with and without depressive symptoms is not clear [22].

In this study, we chose to use early in puerperium and at the follow up six months later the ''body uneasiness'' test, which defines not only body dissatisfaction but also other associated emotions, such as anxiety, alarm, trepidation, worry, mistrust, misgiving, doubt, suspicion, and embarrassment, in new mothers with depressive symptoms (EPDS >9). To our knowledge, persistence of body image dissatisfaction over the 6th postpartum month was not reported in the literature and thus no comparison could be made. Thereafter, this finding suggests that any program designed to provide breastfeeding support to new mothers with depressive symptoms should take into consideration the longlasting risk of body image disorders and change feeding pattern from breastfeeding to formula milk.

These considerations may have potential clinical implications. The literature has shown that psychosocial factors such as self-efficacy, postpartum depression, intention to breastfeed, attitude towards breastfeeding, and social support were associated with exclusive breastfeeding duration beyond four months postpartum [23,24]. Poor body image or dissatisfaction with one's body has a negative implication for infant health as those with greater body image concerns tend not to initiate breastfeeding and formula-feed instead [25]. Our analysis, in particular, indicates that a direct approach to body image might be a potential way to breastfeeding in new mothers with depressive symptoms.

This study has a number of potential limitations. First, the value of this research would increase with additional quantitative measures of body image and qualitative information on women's attitudes toward their bodies as they experience their new role as breastfeeding mothers. Body image is a complex concept and it is difficult to comprehensively capture it in a small number of questionnaire items. The particular choice of BUT to address body image may have influenced the results. It is also possible that the questions we chose to capture body image and confidence, may be less sensitive and valid measures of these constructs during pregnancy than during the postpartum period. Further research to establish better reliability is desirable. Evaluation of basic, educational, and socioeconomic features might lead to a better identification of women at risk of postpartum depression and to a more accurate follow up of their neonates.

Conclusion

In conclusion, this study has indicated that new mothers with depressive symptoms have a longlasting negative body image perception and they tend to discontinue breastfeeding. Given the prevalence of maternal postpartum depression and its associations with poorer body image and breastfeeding outcomes, further research in this interplay is needed to identify effective ways to enhance mothers' body image and confidence levels from the perinatal period. Doing so may improve interventions aimed at supporting lactation in depressed women, so that more mothers and infants realize the full benefits of breastfeeding.

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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