Research article
Ερευνητική εργασία

Maternal screening for early postnatal vulnerability

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Research has highlighted the wide impact of maternal mental health problems during and beyond the postpartum period and the public health role of community health professionals in early detection of women who may be at risk. This paper aims to describe, explore and test an a priori hypothesised conceptual model of postnatal experience, identifying the relationships between postnatal mental vulnerability and postnatal adjustment to maternal roles and attitudes, marital/partner-relationship and sense of coherence. Three validated self-report questionnaires (WAST, MAMA, SOC) measuring the variables of the encompassing framework and EPDS were administered in random order. The conceptual models were tested using the software IBM SPSS Statistics and LISREL and the tests performed were: Student's t-test, chi-square tests, Explanatory factor analysis using a Varimax rotation Principal Components Method, Confirmatory analysis –known as structural equation modelling– of principal components. Psychometric scores indicate high correlation between WAST, MAMA, SOC and EPDS. An exploratory factor analysis confirmed the role of SOC, specific MAMA subscales (maternal roles and attitudes, body image, sex, breasts, nausea) and WAST (relationship tension and emotional and physical abuse) subscales (KMO measure of sampling adequacy=0.735 and Bartlett's test of sphericity=184,786, df=36, p<0.0005). The latent variables confirmed with SEM were marital relationship, maternity experience and self-efficacy (Chi-square=28.45, df=24, P-value=0.24, RMSEA=0.046

p<0.05). Marital Relationship (Factor I: Eigenvalue=3.066) concerning lack of or disappointment with partner support, poor marital relationship and emotional/physical abuse has been associated with high levels of postpartum anxiety and depression. Maternity Experience (Factor II: Eigenvalue=1.280) representing postnatal roles and attitudes towards their infant can be as useful as mood changes for evaluation of mothers. Self-Efficacy (Factor III: Eigen- value=3.144) and especially attitudes regarding body image, sex and coping resources and options of dealing with the stressor, has been demonstrated that serve as a mediator or buffer for psychological distress. The results of this study have implications for the prevention and intervention of postnatal adjustment difficulties both of which need to be intensified in order to minimise perinatal mental vulnerability.

Key words: Depression symptoms, postpartum, abuse, maternity experience, self-efficacy.

Introduction

A considerable number of women experience mental health symptoms after childbirth.[1,2] During the early postpartum period the incidence of depressive symptoms affects from 8.5–84%[3–6] of women, and the wide variation in incidence could be justified due to the timing of identification of symptoms and how this was undertaken. Depression has been determined to be a major global public health concern, contributing to poor physical and mental health in affected women.[1,7] However, early postpartum depression symptoms often go unrecognized with several consequences for the woman, the newborn and the family.[8–11]

To this end, efforts to meet these health needs are considered, as a potential benchmark of establishing an effective primary care system.[3,12] Recent studies attempted to identify psychosocial factors that may contribute to depression symptoms during the early postpartum period.[3,7,11–14] In order to explore the determinants of postpartum depressive symptomatology a comprehensive conceptual framework was constructed.

The first level of the framework concerns the postnatal adjustment to maternal roles and attitudes (MAMA). The perception of psychosocial adaptation during the postpartum period and its effects on women requires consideration due to the many psychosocial risk factors that may affect a woman's experience.[15–16] Women who appear to adjust with much difficulty to their new maternal roles may have a specific postnatal vulnerability to mental health problems.[17] Postnatal roles and attitudes regarding body image, sex, somatic symptoms, marital relationship and attitude towards their infant can be as useful as mood changes for evaluation of women.[15,18,19]

The second level of the framework represents the attachment in the marital/partner-relationship (WAST). These concepts can determine, in part, "the quality" of attachment in the partner-relationship –the individual's typical pattern of relating to their partner– was included in the framework to represent the link between the couple's relationship and symptoms of depression. The partner is usually highly valued as a source of support for childbearing women.[3,13] In addition, previous studies have revealed that support from a partner facilitated women to adapt to maternal roles during postpartum period, for example when making decisions to continue to breastfeed.[20,21] Lack of or disappointment with partner support has been associated with high levels of postpartum anxiety and depression.[3,22] Poor marital relationship and emotional/physical abuse[13,23–26] has been consistently reported as an important predictor of postpartum depression. Women who lack partner support and women who experience psychological abuse are more likely to

sustain a negative impact on their mental health after birth.[13,27,28]

A third level of the framework concerns Sense of coherence (SOC). This may be the most direct expression of the self efficacy, self-concept as a personal force. It refers to the perception or experience of oneself as a causal agent in the family setting. Sense of coherence is an important factor in various health related behaviours, such as overcoming phobias and anxieties, eating disorders and alcohol or smoking addictions.[29–34] It is also congruent with emphasis on self-reliance, mastery and individualism. Sense of coherence describes the confidence the woman feels about performing a particular activity, including confidence in overcoming barriers to performing maternal attitudes/roles and it is the most important prerequisite for behavior change because it affects how much effort could be invested in the specific task and what level of performance is attained.[29–34] Stressful events are construed as person-environment transactions around two critical processes, namely primary and secondary appraisal. Primary or cognitive appraisal is a person's evaluation of the significance of a stressor. For example, the postnatal period is likely to be perceived as stressful period by those for whom parenthood is viewed as a central life goal, whereas those for whom parenthood is not viewed this way, the postnatal period might be appraised as a not particularly stressful time. These individuals might be less susceptible to psychological distress. Secondary appraisal is an assessment of the person's coping resources and options of dealing with the stressor, for example, parents might seek support from postnatal groups or talk about their emotions with their friends or relatives to deal with their difficulties. It has been suggested that coping may serve as a mediator or buffer for psychological distress.[3]

Consequently, the general aim of this exploratory study was to describe, explore and test a self-constructed conceptual framework to help understand the relative impact of postnatal adjustment to maternal roles and attitudes (MAMA), marital/partner relationship (WAST) and sense of coherence (SOC) on levels of depressive symptoms during early postpartum period.

Subjects and methods

Study setting, sampling and target population

The translated, culturally adapted versions of the EPDS, WAST, MAMA and SOC were administered throughout the postnatal units of the four Hospitals. Women who gave birth from June 2009 to August 2009 in these hospitals were eligible for participation, provided they were: (1) 18 to 45 years old (2) remained at the unit for their postnatal stay (3) able to separate themselves from individuals who accompanied them (4) fluency in spoken and written Greek language (5) who were well and (6) able to provide informed written consent. Women were excluded if they had experienced an episode of depression within the previous 2 years or if they had received pharmacological or psychotherapeutic treatments for depression that lasted 3 continuous months (minimum treatment of once a week). The study flow diagram is shown in the figure 1.

Data collection and instruments

In addition to standard socio-demographic questions, the mothers completed the EPDS, WAST, MAMA and SOC questionnaires in the presence of a midwife during their stay at the postnatal ward with alternative order of completion of the four questionnaires. There was no reference to the terms "abuse" or "violence" until the study subject was in a private room, where the study aims were explained and informed consent was obtained.

Edinburgh Postnatal Depression Scale (EPDS)[35]

EPDS, a 10 item self report scale, each item scoring 0–3, depending on the severity or duration of each symptom as experienced in the previous 7 days. The Greek version of the EPDS showed high internal consistency (Chronbach's alpha=0.804 and Guttman split-half coefficient 0.742) and was significantly correlated (Pearson r=0.66, p<0.0005) to the validated Greek version of BDI-II (Beck Depression Inventory II).[36] A threshold score of 8/9 fitted the

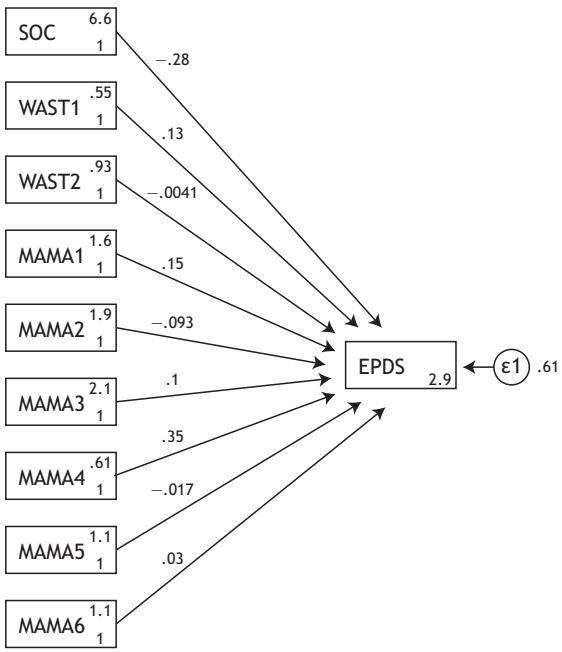

Figure 1. Correlation between EPDS, SOC and the subscales of WAST AND MAMA.
WAST 2 (Relationship tension)
WAST 1 (Emotional and Physical Abuse)
MAMA1 (Marital Relationship)
MAMA 4 (Motherhood), MAMA 6 (Breasts)
MAMA 5 (Nausea)
MAMA 3 (Body Image)
MAMA 2 (Sex)
SOC (Sense of Coherence).

model sensitivity at 76.7% and model specificity at 68.3%.[37]

Women Abuse Screening Tool.[24] The original English version of the WAST consists of 8 short questions and it is a self-report scale consisting of statements describing forms of abuse (physical, sexual and emotional). Each question has three possible answers, graded depending on the severity or duration of each form of abuse. It has good internal consistency (Cronbach α coefficient of 0.95), and it is well accepted by the women.[24–25] The first two questions of the WAST form the WAST-Short, which has been very useful for screening for abuse and most convenient questions to be asked according to the women.[24] The other questions contribute to the final assessment of the emotional abuse. In the validation study significant differences were found between the abused and non abused women on the mean overall the WAST scores (18 vs 8.8, respectively, p<.001).[24] A threshold score of 0/1 fitted the model sensitivity at 99.7% and model specificity at 64.4%.[38]

Maternal Adjustment and Maternal Attitudes (MAMA).[39] MAMA is a 60-item self-administered scale designed to measure key psychosocial dimensions related to the maternity experience.[39] A lower score indicates more positive maternal attitudes toward the pregnancy and baby and positive postnatal adjustment. The scale includes a pre- and postnatal component (here it was used the postnatal one). Internal consistency for the subscale was identified through test-retest reliability (r=0.84) and splithalf- reliability (r=0.73).[39] Construct validity has been demonstrated by finding expected relationships between the Attitudes to Pregnancy and the Baby scale and a woman's expressed feelings toward her baby, her perception of how difficult her baby is[39,40] and maternal-fetal attachment.[39–41] Alpha reliability was 0.64.

Multidimensionality of the Greek version demonstrated a six-factor structure and a threshold score of 57/58 fitted the model sensitivity at 68% and model specificity at 64.6%.[42]

Sense of Coherence (SOC).[43] The SOC scale includes of 29 items. The responses to each question are rated on a seven-point scale (scores 1 to 7) and the total score is calculated. A higher total score indicates that the individual is more likely to demonstrate coping abilities in terms of comprehensibility, manageability and meaningfulness. The scale ranges from 0 to 203 points. The Greek version of SOC[44] was used in this study.

Ethics

The study was approved by the Research Ethics Boards of Hospitals (protocol number #217/2008). All participants provided verbal informed consent prior to enrolment. Along with the questionnaires there was a cover letter explaining the purpose of the study, providing the researchers' affiliation and contact information, and clearly stating that an-

swers would be confidential and anonymity would be guaranteed in the final data reports.

Data analysis

Statistical analysis was performed using IBM SPSS Statistics version 20 and LISREL (Linear Structural Relations). Differences between participants and non-participants were assessed by Student's t-test for continuous variables and chi-square tests for categorical variables after ensuring normality, homogeneity and independent cases of the sample. The underlying levels of the comprehensive conceptual framework were checked with an explanatory factor analysis using a Varimax rotation and Principal Components Method.[45] This analysis was carried out to determine the dimensional structure of conceptual framework using the following criteria: (a) eigenvalue >1,[46] (b) variables should load >0.50 on only one factor and on other factors less than 0.40, (c) the interpretation of the factor structure should be meaningful, (d) Screeplot is accurate in the case that the means of communalities are above 0.60.[47] Computations were based on covariance matrix, as all variables were receiving values from the same measurement scale.[48] A Bartlett's test of sphericity with $p<0.05$ and a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.6 were used in performing this factor analysis. A factor was considered as important if its eigenvalue exceeded 1.0.[49]

Additionally, a Structural Equation Modelling (SEM) was conducted by LISREL (Linear Structural Relations) to confirm that subscales principally load on to that psychosocial factor and correlate weakly with other factors, to assess tests for significance of factor loadings and orthogonality of factors,[48,50,51] a mode –based on a priori information of exploratory factor analysis– was built in order to specify latent factors, their component variables and the intercorrelations of the response variables, maximum likelihood LISREL estimates, t-values, error terms, correlation of independent variables and goodness of fit-test for the specified model were performed. Consistent with the assumption of multivariate normality, a maximum-likelihood (ML) approach to model estimation was adopted.[52–54] Multiple goodness-of-fit tests[54] were used to evaluate the models, these being the Comparative Fit Index,[55,56] and the root mean squared error of approximation (RMSEA). A CFI greater than 0.90 indicates an acceptable fit to the data [51,54,55,57,58] while a CFI equal to or greater than 0.95 indicates a good fit to the data.[51] An RMSEA with values of less than 0.08 indicate an acceptable fit to the data,[59] while values of less than 0.05 indicate a good fit to the data.[60] A statistically significant x^2 indicates that a significant proportion of variance within the data is unexplained by the model,[55] however, trivial and inconsequential variations in the data can promote a significant x^2 statistic[51] hence model evaluation is almost universally determined by model fits statistics such as CFI and RMSEA.[52,61] Goodness of fit statistics are used not to judge fit in absolute terms but instead to compare the fit of different models. Smaller values indicate a better fit. CFI and TLI, two indices such that a value close to 1 indicates a good fit. CFI stands for comparative fit index. TLI stands for Tucker–Lewis index and is also known as the non-normed fit index.[52–54]

Results

Sample characteristics

The mean age of the women was 29.76 years (Standad Error of Mean, SEM 0.537, range 20–40 years), a high (46%) proportion of women had university or even postgraduate studies. Ninety-two percent of women were in paid employment, 50% had other children and in only 2% of cases the newborn were out of wedlock (table 1). Univariate independent t tests and Chi-square test revealed that non-responders did not statistically differ from the respondents with regard to age, educational level, work status, marital status and parity. The mean scores for the validated tools were:

a. MAMA score 57.21 (SEM 2.21, SD 20.97 and range 8–150 score).

b. EPDS score 8.24 (SEM 0.50, SD 4.82 and range 0–25 score).

c. WAST score 1.38 (SEM 0.17, SD 1.67 and range 0–9 score).

d. SOC score 146.30 (SEM 2.34, SD 22.27 and range 104–198 score).

Table 1. Characteristics of the Study Sample.

	No (%)
EPDS	
No Depressive symptoms	51 (55.4)
Depressive symptoms	41 (44.6)
Mode of Delivery	
Vaginal Birth	42 (45.7)
Caesarean Section	50 (54.3)
Gravida	
Primigravida	45 (49.4)
Multigravida	46 (50.5)
Marital Status	
Married	90 (98.9)
Single	1 (1.1)
Education	
Elementary & junior high	11 (12.0)
High School	38 (41.7)
University/College Education	35 (38.4)
Postgraduate Studies	7 (7.6)
Work Status	
Housewife	32 (34.7)
Unemployed	7 (7.6)
Student	2 (2.1)
Public Sector	15 (16.3)
Private Sector	24 (26.0)
Independent	12 (13.0)
Religion	
Christian Orthodox	91 (98.9)
Catholic	0 (0.0)
Muslim	1 (1.0)
Family income per month	
500–1000 Euros	20 (23.2)
1000–2000 Euros	29 (33.7)
2000–3000 Euros	20 (23.2)
>3000	17 (19.7)

Models and correlation

Exploratory Factor analysis

The exploratory factor analysis on the items of the MAMA, WAST, SOC revealed three orthogonal factors (KMO measure of sampling adequacy=0.735 and Bartlett's test of sphericity=184.786, df=36, p<0.0005). Descriptive statistics, communalities and the correlation matrix for the validated Greek psychometric tools are presented in table 2. The correlation Matrix of EPDS and the subscales of WAST, MAMA and the SOC scale as shown in table 3 and figure 1 confirm the significant relation that was specified and implied. As the screeplot and component plot in rotated space (figure 2) indicate there are three factors in the model, explaining 60.89% of the variance (table 4). The first factor (F1) includes the WAST 2 (relationship tension), WAST 1 (emotional and physical abuse) and MAMA 1 (marital relationship) subscales, the latter includes specific questions that describe the marital relationship. The second factor (F2) is composed of subscales MAMA 4 (maternal roles and attitudes), MAMA 6 (Breasts) and MAMA 5 (Nausea), representing in a way the 'Maternity Experience'. The third factor (F3) is composed the MAMA 3 (body image), MAMA 2 (Sex) and SOC (Sense of Coherence) subscales and is considered to represent "Self Efficacy".

Table 2. Correlation Matrix of the subscales of WAST, MAMA and the SOC scale.

	SOC	WAST1	WAST2	MAMA1	MAMA2	MAMA3	MAMA4	MAMA5	MAMA6
SOC	1.000	–0.082	–0.204	–0.237	–0.145	–0.177	–0.215	–0.158	–0.049
WAST 1	–0.082	1.000	0.508	0.402	0.028	0.014	0.272	0.321	0.090
WAST 2	–0.204	0.508	1.000	0.696	0.166	0.252	0.183	0.286	0.123
MAMA 1	–0.237	0.402	0.696	1.000	0.344	0.370	0.288	0.416	0.207
MAMA 2	–0.145	0.028	0.166	0.344	1.000	0.259	0.243	0.297	0.228
MAMA 3	–0.177	0.014	0.252	0.370	0.259	1.000	0.100	0.098	0.236
MAMA 4	–0.215	0.272	0.183	0.288	0.243	0.100	1.000	0.392	0.340
MAMA 5	–0.158	0.321	0.286	0.416	0.297	0.098	0.392	1.000	0.357
MAMA 6	–0.049	0.090	0.123	0.207	0.228	0.236	0.340	0.357	1.000

SOC: Sense of Coherence, WAST: Women Abuse Screening Tool, MAMA: Maternal Adjustment and Maternal Attitudes

Table 3. Correlation Matrix of EPDS and the subscales of WAST, MAMA and the SOC scale.

Fitting target model:
Iteration 0: log likelihood= –1918.0868
Iteration 1: log likelihood= –1918.0868
Structural equation model Number of obs=90
Estimation method=mL
Log likelihood= –1918.0868

	OIM					
Standardized	**Coef.**	**Std.**	**Err.**	**z**	**p>z**	**(95% Conf. Interval)**
Structural						
EPDS ≤						
SOG	–0.2765715	0.0829228	–3.34	0.001	–0.4390973	–0.1140457
WAST 1	0.1307664	0.1005598	1.30	0.193	–0.0663272	0.3278599
WAST 2	–0.0041329	0.1236818	–0.03	0.973	–0.2465448	0.238279
MAMA 1	0.1535831	0.1292531	1.19	0.235	–0.0997483	0.4069145
MAMA 2	–0.0925046	0.0920739	–1.00	0.315	–0.2729661	0.0879569
MAMA 3	0.103431	0.0925566	1.12	0.264	–0.0779766	0.2848386
MAMA 4	0.3506101	0.0901382	3.89	0.000	0.1739424	0.5272777
MAMA 5	–0.0167306	0.1009798	–0.17	0.868	–0.2146473	0.1811861
MAMA 6	0.0304421	0.933061	0.33	0.744	–0.1524345	0.2133186
_cons	2.942241	0.6574962	4.47	0.000	1.653573	4.23091
var (e. EPDS)	0.6096703	0.0720399			0.4836323	0.7685546

LR test of model vs saturated: chi2 (0)=0.00

SEM analysis

Confirmatory factor analysis was conducted to determine whether the data were consistent with the a priori specified model that was suggested by exploratory factor analysis in order to evaluate whether the data adequately fit the model. The three factor-model was based on correlated factors that derived from the factor analysis using principal component analysis with varimax rotation. The three latent variables Marital Relationship (Subscales WAST 2, WAST 1, MAMA 1), Maternity Experience (Subscales MAMA 4, MAMA 6, MAMA 5) and Self Efficacy (MAMA 3, MAMA 2, SOC) were significantly related (Chi-square=28.45, df=24, P-value=0.24, RMSEA=0.046 p<0.05) with Maximum Likelihood method (figure 3). LISREL estimates, standard error, t-values, error terms and r^2 for all the questions that consisted each latent variables are presented in table 5. The error terms correlated significantly (with a range of: 0.32 to 421.37) Expected Cross Validation Index (ECVI)=0.79, ECVI for Saturated Model=1.01 Goodness of Fit Statistics were also estimated, Non-normed Fit Index (NNFI)= 0.96, Comparative Fit Index (CFI)=0.98, Incremental Fit Index (IFI)=0.98, Relative Fit Index (RFI)=0.92, Goodness of Fit Index (GFI)=0.93, Adjusted Good-

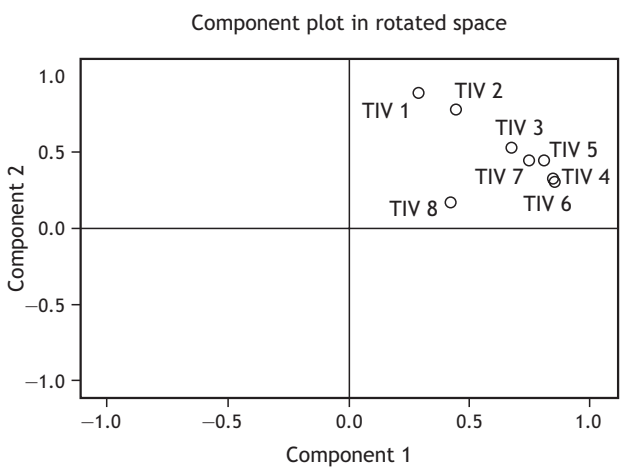

Figure 2. Component plot in rotated space.

Table 4. Exploratory factors and explained variance after rotation.

Factors		Rotation sums of squared loadings					
		Rescaled loadings	Eigen-values	(%) of variance	Cummulative variance	Cronbach's alpha	Standardised alpha
Factor I (*Marital Relationship*)	*WAST 2* (Relationship tension)	0.825	3.066	34.070	34.070	0.542	0.769
	WAST 1 (Emotional and physical abuse)	0.819					
	MAMA 1 (Marital relationship)	0.681					
Factor II (*Maternity Experience*)	*MAMA 4* (Maternal roles and attitudes)	0.735	1.280	14.226	48.296	0.628	0.630
	MAMA 6 (Breasts)	0.728					
	MAMA 5 (Nausea)	0.698					
	MAMA 3 (Body image)	0.821					
Factor III (*Self Efficacy*)	*MAMA 2* (Sex)	0.560	3.144	12.591	60.887	–0.708	–0.66
	SOC (Sense of coherence)	–0.443					

ness of Fit Index (AGFI)=0.88 (figure 3). The structure of the thematically derived 3-factor model was found to be improved, with an acceptable model fit.

Discussion

Main findings

This study has attempted for the first time to jointly use three screening tools assessing postnatal adjustment to maternal roles and attitudes (MAMA), marital/partner relationship (WAST) and sense of coherence (SOC) mediated levels of depressive symptoms during early postpartum period (indexed by EPDS). The integrated model including direct effects of marital relationship, maternal experience and self-efficacy proved to be the best model. Epidemiological research of psychosocial factors that contribute to postnatal depressive symptomatology is important in order to provide information about which populations are most at risk and can also be helpful in informing decisions and healthcare services.[3,12]

Previous literature has suggested factors that might mediate the development of postnatal depressive symptomatology.[1,3,12] This exploratory study has described, explored and tested a self-constructed conceptual framework to help understand the relative impact of postnatal adjustment to maternal roles and attitudes (MAMA), marital/partner relationship (WAST) and sense of coherence (SOC) on levels of depressive symptoms during early postpartum period. Our results suggest that screening for postnatal mental vulnerability favours the use of combination of validated psy-

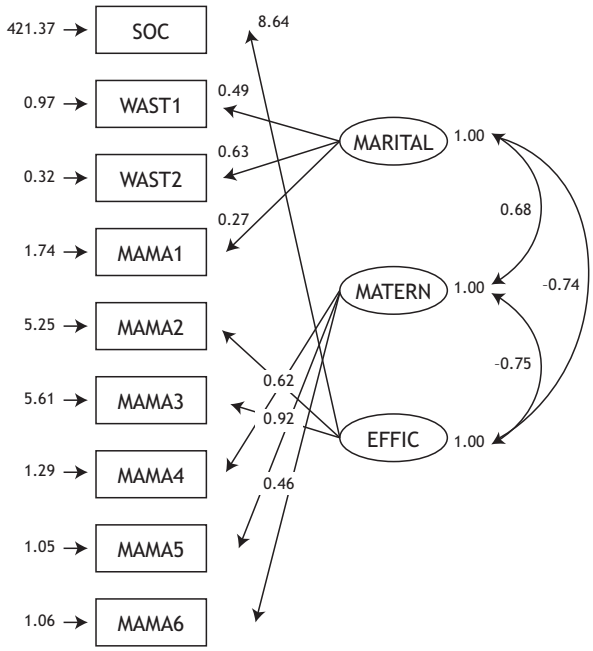

Figure 3. Confirmatory Factor Analysis for the model.
Factor I (Marital Relationship)
WAST 2 (Relationship tension)
WAST 1 (Emotional and Physical Abuse)
MAMA1 (Marital Relationship)
Factor II (Maternity)
MAMA 4 (Motherhood)
MAMA 6 (Breasts)
MAMA 5 (Nausea)
Factor III (Self Efficacy)
MAMA 3 (Body Image)
MAMA 2 (Sex)
SOC (Sense of Coherence)

chometric tools such as MAMA, WAST and SOC. Marital relationship, maternal experiences and self-efficacy have been significantly associated with levels of depressive symptoms during early postpartum period.[3,7,12,62] Previous studies[6,12,15,63,64] have shown a strong correlation between the depressive symptomatology and other screening instruments used.

Moreover, results of this study replicate and further highlight previously published data that underlines that the presence of the specific psychosocial risk factors increases the risk of perinatal mental vulnerability.[7,12,62] In particular, the structural equation modelling (SEM) supported the relationship between positively and negatively valued screening instruments (SOC, WAST, MAMA) and the following latent variables: the marital relationship, maternity experience and self-efficacy.[7,12,15,17,62–63]

Firstly, Marital Relationship (Factor I≥as described by WAST subscales and MAMA1 subscale) and especially lack of or disappointment with partner support, poor marital relationship and emotional/physical abuse has been associated with high levels of postpartum anxiety and depression.[3,13,22–26] Secondly, Maternity Experience (Factor II≥as described by MAMA subscales) and especially postnatal roles and attitudes towards their infant can be as useful as mood changes for evaluation of mothers.[15,18,19] Thirdly, Self-Efficacy (Factor III≥as described by SOC and MAMA subscales) and especially attitudes regarding body image, sex and coping resources and options of dealing with the stressor, has been demonstrated that serve as a mediator or buffer for psychological distress.[3] Therefore, early postnatal mental health screening and a comprehensive psychosocial assessment would be beneficial for the clinical practice in primary care settings.[12,28] The combined use of these three tools is recommended in daily practice in cases that the health professional would like to explore borderline depressive symptomatology during postnatal period. The additional benefit would be to provide a woman centred care to the new mother.

Limitations

There are a number of limitations that should be taken into account for the interpretation of our results. The design of the study was of cross sectional nature entailing only one point assessment in the early postpartum period, whereas psychosocial factors may also affect depression symptoms during pregnancy and persist in later life periods critical for the mother and the newborn, such as during lactation. Moreover, the depressive symptomatology, the maternal experience, the emotional abuse and sense of coherence were assessed with only paper-and pencil measures (i.e. the EPDS, MAMA, WAST and the SOC) without further assessment. Additionally, the administration of psychometric questionnaires during the early

Table 5. LISREL estimates (maximum likelihood) for the conceptual framework.

Independent variables		Measurement equations				
		Estimates	Standard error	t values	Error terms	R^2
	WAST 2 (Relationship tension)	0.63	0.086	7.31	0.32	0.55
Factor I (*Marital Relationship*)	*WAST 1* (Emotional and physical abuse)	0.49	0.12	4.10	0.97	0.19
	MAMA 1 (Marital relationship)	3.27	0.35	9.44	1.74	0.86
	MAMA 4 (Maternal roles and attitudes)	0.62	0.16	3.82	1.29	0.23
Factor II (*Maternity Experience*)	*MAMA 6* (Breasts)	0.46	0.14	3.25	1.06	0.17
	MAMA 5 Nausea)	0.92	0.18	5.06	1.05	0.45
	MAMA 3 (Body image)	−1.13	0.34	-3.30	5.61	0.18
Factor III (*Self Efficacy*)	*MAMA 2* (Sex)	−1.34	0.35	-3.79	5.25	0.26
	SOC (Sense of coherence)	8.64	2.88	3.00	421.37	0.15

postpartum period (on average three days after giving birth) may have caused inconvenience to the new mothers[65] and may not have reflected the ability to distinguish women who did and did not have psychosocial problems a short time following delivery. However, EPDS has been validated for use soon after the birth.[7]

In this study, we relied on retrospective maternal reports for the timing of postpartum difficulties, and recall bias may also have adversely affected our findings. In spite of the above concerns, the size of our sample was satisfactory for explanatory and SEM analysis.[65–67] On the positive side as well, the study was conducted in a rather culturally homogeneous prefecture of Greece that captured all maternity units from which intensive efforts were made to recruit a representative sample, validated instruments were used to assess exposures and outcomes, whereas the study was coordinated by a single midwife, who succeeded in collaboration with her colleagues to minimize refusal rates and losses.

Conclusion

The results of this study signify the need to remove the stigma around perinatal mental disorders, postpartum adjustment difficulties and abuse as identified in the postpartum period. The main effort when intervening in order to prevent perinatal mental disorders should come from screening, so as women who are positive on screening are to have appropriate and timely care. Results of this study have implications for the prevention and intervention of postnatal mental vulnerability both of which need to be intensified in order to minimise perinatal mental morbidity and mortality.

List of abbreviations used

WAST: Women Abuse Screening Tool

SOC: Sense of Coherence

EPDS: Edinburgh Postnatal Depression Scale

MAMA: Maternal Adjustment and Maternal Attitudes

Πρώιμη ανίχνευση της επιλόχειας ψυχικής ευπάθειας

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Ένας αυξανόμενος αριθμός ερευνών έχει αναδείξει τον αντίκτυπο των προβλημάτων ψυχικής υγείας των μητέρων κατά τη διάρκεια της λοχείας και τον σημαντικό ρόλο των επαγγελματιών υγείας που εργάζονται στην Πρωτοβάθμια Φροντίδα Υγείας για την έγκαιρη ανίχνευση των γυναικών που μπορεί να διατρέχουν κίνδυνο. Η παρούσα μελέτη είχε ως πρωταρχικό στόχο να περιγράψει, να ερευνήσει και να δοκιμάσει ένα *a priori* υποθετικό εννοιολογικό μοντέλο για την εμπειρία κατά τη διάρκεια της λοχείας, τον προσδιορισμό των σχέσεων μεταξύ επιλόχειας ψυχικής ευπάθειας και την επιλόχεια προσαρμογή σε μητρικούς ρόλους και στάσεις, τη συζυγία και την αίσθηση συνοχής. Τρεις σταθμισμένες αυτοσυμπληρούμενες ψυχομετρικές κλίμακες (WAST, MAMA, SOC) χρησιμοποιήθηκαν για την αξιολόγηση των μεταβλητών του εννοιολογικού πλαισίου. Τα εννοιολογικό μοντέλο ελέγχθηκε με τη χρήση του λογισμικού IBM SPSS. Χρησιμοποιήθηκαν οι κάτωθι στατιστικές δοκιμασίες: Student's t-test, chi-square tests, Explanatory factor analysis using a Varimax rotation Principal Components Method, Confirmatory analysis. Η παραγοντική διερευνητική ανάλυση επιβεβαίωσε τον ρόλο της κλίμακας SOC, συγκεκριμένων υποκλιμάκων της MAMA (οι μητρικοί ρόλοι και στάσεις, το σεξ, η εικόνα του σώματος, συμπτώματα όπως ναυτία) και των υποκλιμάκων της WAST (ένταση στη συζυγία και συναισθηματική και σωματική κακοποίηση), (KMO μέτρο για την επάρκεια της δειγματοληψίας=0,735 και η δοκιμή του Bartlett για σφαιρικότητα=184.786, d=36, p=0,0005). Οι λανθάνουσες μεταβλητές που επιβεβαιώθηκαν με την ανάλυση SEM ήταν: η φύση της συζυγίας, το βίωμα της μητρότητας και η αίσθηση αυτο-επάρκειας (Chi-square=28,45, df=24, P-value=0,24, RMSEA=0,046 p<0,05). Η φύση της συζυγίας (παράγοντας I: Eigenvalue=3,066) και ιδιαίτερα η αίσθηση έλλειψης υποστήριξης ή η απογοήτευση από τον σύζυγο, η μη ποιοτική συζυγία και η συναισθηματική/φυσική κακοποίηση από τον σύντροφο φαίνεται να έχουν σημαντική συσχέτιση με το άγχος και την κατάθλιψη κατά τη διάρκεια της λοχείας. Το βίωμα της Μητρότητας (παράγοντας II: Eigenvalue=1,280), δηλαδή οι ρόλοι και οι στάσεις απέναντι στο νεογνό, θα μπορούσε να είναι χρήσιμη παράμετρος για την εκτίμηση των αλλαγών της διάθεσης την περίοδο της λοχείας, για την αξιολόγηση των μητέρων. Η αίσθηση αυτο-επάρκειας (παράγοντας III: Eigenvalue=3,144) περιλαμβάνει τις στάσεις των λεχωίδων όσον αφορά στην εικόνα του σώματος, στο σεξ και στις μεθόδους αντιμετώπισης του άγχους, και φαίνεται να έχει σημαντική συσχέτιση με ψυχικές διαταραχές κατά τη λοχεία. Τα αποτελέσματα αυτής της μελέτης συμβάλλουν στην πρόληψη και στην παρέμβαση όταν υπάρχουν δυσκολίες προσαρμογής κατά τη διάρκεια της άμεσης λοχείας, με στόχο να ενισχυθεί το πλαίσιο των δραστηριοτήτων των επαγγελματιών υγείας στην Πρωτοβάθμια Φροντίδα Υγείας, προκειμένου να ελαχιστοποιηθεί η περιγεννητική ψυχική ευπάθεια.

Λέξεις ευρετηρίου: Καταθλιπτικά συμπτώματα, λοχεία, κακοποίηση, μητρική εμπειρία, αυτο-επάρκεια.

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