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An Exploration of Perinatal Distress in Pakistan: A Mixed Methods Study

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ABSTRACT

Objectives: To develop an indigenous perinatal distress model (PDM) for couples, measured with the indigenously developed Perinatal Distress Inventory (PDI), and verified via statistical regression analysis.

Methodology: An exploratory sequential mixed method research design was used. In Phase-I, an item pool of 209 items was generated by reviewing the literature and conducting semi-structured interviews with experts and perinatal couples at high risk of distress. Reflexive thematic analysis and interpretative phenomenological analysis were used to construct the PDM. In Phase II, the face and content validation of 209 items in the PDI was carried out and 200 items were finalized. The try-out (50 couples) and pilot study (2080 participants) was carried out via purposive sampling technique, from hospitals. Exploratory factor analysis yielded 194 items in PDI with Parental Perinatal Distress Scale (PPDS), Parental Perinatal Distress Expression Scale (PPDES), and Parental Perinatal Distress Aetiology Scale (PPDAS), with acceptable Cronbach's alpha reliability coefficients 0.90, 0.97, and 0.91 respectively.

Results: PDM showed reciprocal interactions between assessments of distress in terms of depression, anxiety, mania, and psychosis and cultural expressions of emotions, somatization, maladaptive coping, and beliefs in religious and supernatural cognitions, and between the cultural aetiology of stressful and traumatic events; gender roles, mental health stigma, mental health illiteracy, family support, perinatal cognitions, emotional attachment, and bonding, all of which contributed to perinatal distress in couples. The regression analysis revealed that cultural expression and cultural aetiology significantly predicted perinatal distress in couples.

Conclusion: Indigenous PDM was developed, measured with PDI, and verified via regression analysis in couples.

Keywords: Bipolar Disorder, Mental Disorders, Peripartum, Perinatal Anxiety, Perinatal Depression, Psychotic Disorder.

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Introduction

Recent empirical studies have posited the presence of distress not only in mothers but also in fathers during and after pregnancy up to one year after childbirth (Massoudi, et al, 2016; Lara, et al, 2022). The perinatal period encompasses pregnancy and the first year after childbirth (Garcia, & Yim, 2017). The perinatal period has been found to be the most vulnerable interval for the onset and aggravation of psychiatric disorders (Paschetta, et al., 2014) such as depression, anxiety, bipolar disorder and psychosis in women. However, fathers have been neglected in the international investigation of the presence of perinatal mental disorders (Wong, et al., 2016). The issues related to perinatal distress have been underrecognized in the area of research and intervention (Wilkinson, et al., 2022.). In Pakistan, a systematic review and meta-analysis revealed a prevalence of 37% antenatal depression and 30% postnatal depression in 17544 women (Atif, et al., 2021) whereas another study reported a prevalence of 29.2% antenatal anxiety and 24.4% postnatal anxiety in low- and middle- income countries, respectively, including Pakistan (Nielsen-Scott, et al., 2022). However, the overall incidence of perinatal mental disorders, as estimated by a systematic review and meta-analysis, has been reported to be 28% in Pakistan (Doraiswamy, et al., 2020). Therefore, there is a dire need for the exploration and empirical investigation of psychosocial determinants of perinatal mental health in Pakistan (Husain, et al., 2011).

The Significance of the Study

Moreover, unanimous studies in Pakistan have used the Edinburg Postnatal Depression Scale and Generalized Anxiety Disorder-7 Scale to measure depression and anxiety in perinatal women (Imran, & Haider, 2010; Sadiq, et al, 2016; Hossain, et al, 2020). The Mood Disorder Questionnaire (Shafaq, et al., 2019) and unstandardized questionnaire (Irfan, & Badar, 2003) were used to screen Pakistani women for bipolar and psychotic symptoms respectively. Therefore, a need arises for indigenous development of a comprehensive instrument that can be used to assess and measure perinatal mental disorders and cultural determinants. These sociocultural factors need identification and it is possible to construct of an indigenous model to elaborate the relationships among them.

Problem Statement

In the light of the literature review, it is stated that;

1) What are the sociocultural characteristic expressions and contributing factors of perinatal distress in couples?
2) How could these sociocultural expressions and contributing factors be measured in couples?
3) How could empirical evidence be obtained for the measurement and establishment of the socio-cultural expressions and factors related to perinatal distress?

Objectives of the Study

Hence, the present study aimed to qualitatively explore of the concept of perinatal distress in Pakistan and to construct a perinatal distress model to answer the first problem statement. The second aim was to develop a reliable measuring instrument, Perinatal Distress Inventory, to answer the second problem statement. The third objective was to verify the perinatal distress model with statistical regression analysis, to answer the third problem statement.

Hypotheses of the Study

- Factors (emotions, somatization, maladaptive coping, and beliefs in religious and supernatural cognitions) related to cultural expression significantly predicts perinatal distress in couples.
- Factors (stressful and traumatic events; gender roles, mental health stigma, mental health illiteracy, family support, perinatal cognitions, emotional attachment, and bonding) of cultural aetiology significantly predict perinatal distress in couples.

Methodology

Research Design

The present study used an exploratory sequential mixed method research design (Creswell, & Clark, 2011) in two phases. Qualitative and quantitative approaches were applied in Phase I and Phase II respectively with the approval of the Institutional Review Board (IRB), of the University of Gujrat, Gujrat (reference: UOG/ORIC/2022/393, dated 22-12-2022).

Phase I

Sample

In Phase-I, an item pool of 209 items was generated for the development of the Perinatal Distress Inventory (PDI) by applying deductive and inductive approaches. With respect to the deductive approach, a detailed review of the literature was conducted. In the inductive approach, semistructured interviews were conducted with five psychiatrists, four clinical psychologists and eight high-risk couples experiencing distress during the perinatal period. Professionals with less than two years of clinical experience were excluded. The inclusion criterion for health professionals were two to five years of experience in the health field. The inclusion criterion for couples was the presence of either an antenatal or postnatal period, or both with at least three months of marriage or a confirmed pregnancy.

Instrument

A semistructured interview schedule with sixteen primary semistructured questions for the experts was developed. Another semistructured interview schedule with six primary semistructured questions for the high risk couples screened for perinatal distress, was developed. The probe questions were used during the interview based on the responses of the experts and high-risk screened couples for perinatal destress.

Procedure

The four couples were screened with the Edinburg Postnatal Depression Scale, Urdu version (Muneer, et al., 2009) which has a cutoff score ≥11, and the Generalized Anxiety Disorder-7, Urdu version (Ahmad, et al., 2017), which has a cutoff score ≥10. The indigenously developed Structured Clinical Interview for Diagnostic Statistical Manual, 5TR (SCID- 5TR) was used for the diagnosis of major depressive disorder and generalized anxiety disorder in screened high risk couples. The forward-backward translation of the Washington Early Recognition Center Affectivity and Psychosis Screen (Mamah, et al, 2014) was carried out and the Urdu version with >20 for bipolar disorder, and >13 for psychotic disorder cutoff scores was used to screen another four high risk couples. They were further diagnosed with bipolar disorder and psychotic disorder with the indigenously developed SCID- 5TR. In addition, the Simplified Negative and Positive Symptoms Interview (Østergaard, et al., 2017) was administered to the couples after receiving permission for Urdu version (Opler, 2023).

The semistructured interviews, with the experts and high risk couples for perinatal distress, were carried out with critical method (Piaget, 1973) that provided grounds for probes based on expressed opinions and ideas of the professional experts and screened high risk couples. To explore cultural expressions related to perinatal distress (Bhugra, et al., 2021), reflexive thematic analysis (Braun, & Clarke, 2019) was used to assess the precepts of psychiatrists and clinical psychologists whereas interpretative phenomenological analysis (Eatough, & Smith, 2017) was used to evaluate the lived experiences of the screened high-risk perinatal couples. The results obtained after reflexive thematic analysis and interpretative phenomenological analysis were used to construct indigenous perinatal distress model (Figure 1) and 209 items were generated for the development of the PDI.

Phase II

In Phase II, the face validation of 209 items for the PDI was conducted with a separate sample of ten couples screened and diagnosed with the method stated above. The finalized 204 items along with 7 items for information about episodes were analyzed by nine experts, content validation (Lynn, 1986; Lawshe, 1975) was carried out and 200 items were finalized.

Sample

In tryout, 50 couples were selected with a purposive sampling technique from gynecological wards of public and private hospitals in Gujrat. The inclusion criteria focused on mothers who were pregnancy and the postpartum period with a child up to one year of age, who came for routine checkups along with their husbands and were willing to participate in the study.

In pilot study, out of 2500 participants, 2080 (80.6% wives and 19.4% husbands) aged 18 to 52 years (M=28.61±5.02), were contacted through a purposive sampling technique for the administration of 200 items from the PDI visiting gynecological ward of Aziz Bhatti Shaheed Teaching Hospital, Irfan Hospital, and Robina Sajid Hospital, Gujrat. The inclusion criteria included wives who were willing and came either with their husbands or a relative for gynecological checkups. They had either confirmed pregnancy or a child up to one year of age. The exclusion criteria focused on unwilling wives and husbands, ambiguity in the status of the pregnancy, a child older than one year of age; and wives visiting in emergency situations.

Instrument

The indigenously developed Perinatal Distress Inventory (PDI) was used in the present study. Exploratory factor analysis (EFA) and Cronbach's alpha reliability (α) analysis were carried out and found to be acceptable for 194 finalized items in the PDI with three scales namely Parental Perinatal Distress Scale (PPDS) with $\alpha = 0.90$, Parental Perinatal Distress Expression Scale (PPDES) with $\alpha = 0.97$, and Parental Perinatal Distress Aetiology Scale (PPDAS) with $\alpha = 0.91$. The PPDES has four subscales, namely emotions, somatization, maladaptive coping; and religious and supernatural cognitions. The PPDAS has 8 subscales namely, stressful and traumatic events; gender roles, mental health stigma, mental health illiteracy, family support, perinatal cognitions, emotional attachment, and bonding.

The convergent, divergent, and discriminant validity of the PPDS was acceptable. PPDS has four subscales, major depressive disorder, generalized anxiety disorder, bipolar disorders, and psychotic disorders. The convergent validity in PPDS of Major Depressive Disorder Subscale with Depression Subscale of Hospital Anxiety and Depression Scale (Zigmond, & Snaith, 1983) was 0.42, $p<0.01$; of Generalized Anxiety Disorder Subscale with Anxiety Subscale of Hospital Anxiety and Depression Scale ((Zigmond, & Snaith, 1983) was 0.52, $p<0.01$; of Mania-Hypomania Subscale with Urdu forward-backward translated version Mania Subscale of Altman Mania Rating Scale (Altman, et al., 2001) was 0.31, $p<0.05$; of Psychotic Disorder Subscale with Urdu forward-backward translated version Psychosis Subscale of Altman Mania Rating Scale (Altman, et al., 2001) and Brief Positive and Negative Syndrome Scale-Urdu version (Ranjah, 2023) was 0.78, $p<0.01$ and 0.85, $p<0.01$ respectively. The divergent validity in PPDS of Major Depressive Disorder Subscale with Flourishing Scale-Urdu version (Choudhry, et al., 2018) was 0.02; of Generalized Anxiety Disorder Subscale with Flourishing Scale-Urdu version (Choudhry, et al., 2018) was 0.04; of Mania-Hypomania Subscale with Flourishing Scale-Urdu version (Choudhry, et al., 2018) was 0.04; of Psychotic Disorder Subscale with Flourishing Scale-Urdu version (Choudhry, et al., 2018) was -0.19. The discriminant validity in PPDS of Major Depressive Disorder Subscale for patients diagnosed with Major Depressive Disorder and healthy individuals was $t= 50.11$, $p<0.001$; of Generalized Anxiety Disorder Subscale with patients diagnosed with Generalized Anxiety Disorder and healthy individuals was 42.84, $p<0.001$; of Mania-Hypomania Subscale with patients diagnosed with Bipolar Disorders and healthy individuals was $t=62.40$, $p<0.001$; of Psychotic Disorder Subscale with patients diagnosed with Psychotic Disorders and healthy individuals was $t=70.15$, $p<0.001$.

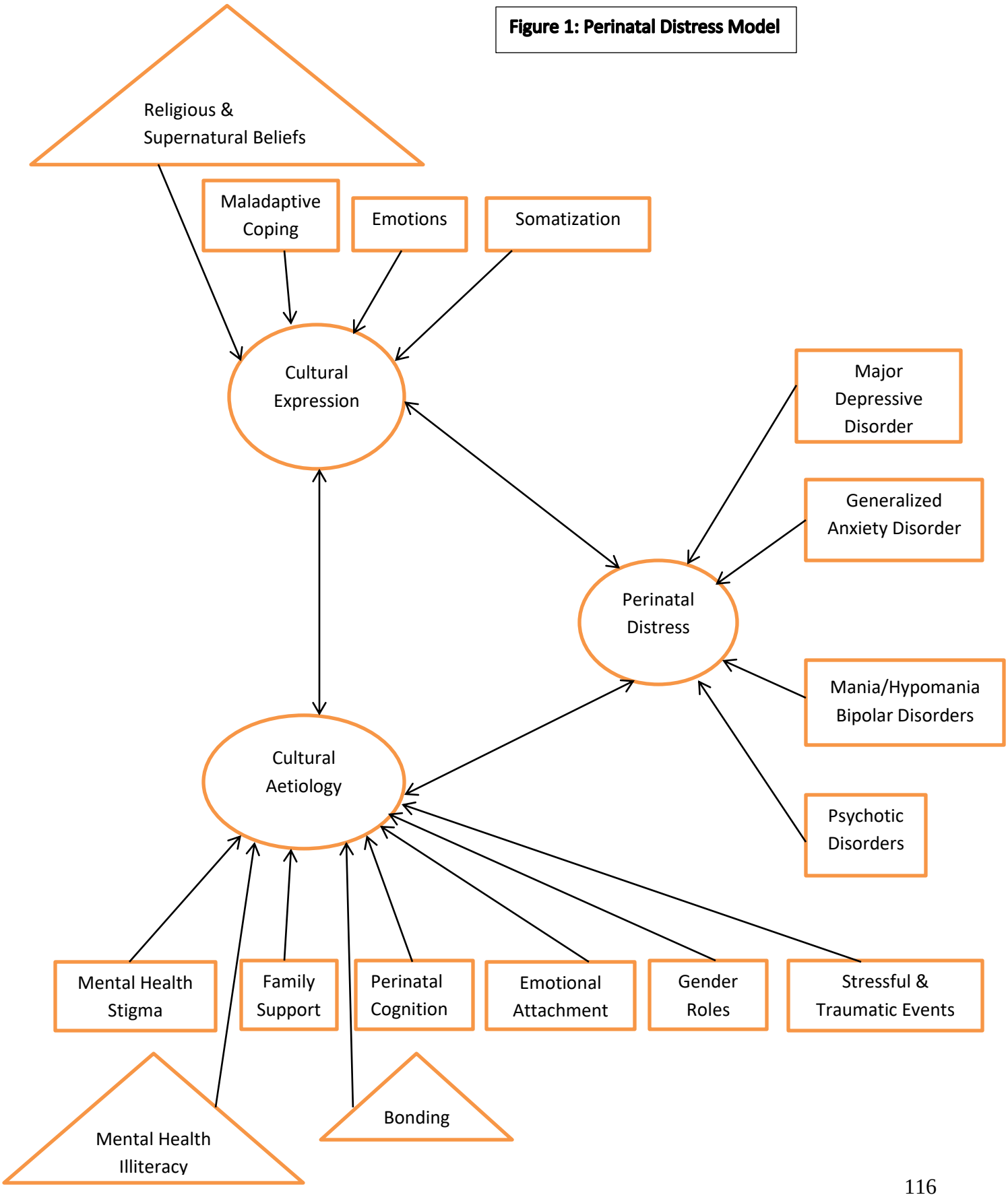
Procedure

After content validation, 200 finalized items of PDI, was administered on 2080 participants selected by purposive sampling technique who visited Aziz Bhatti Shaheed Teaching Hospital, Irfan Hospital, Robina Sajid Hospital, and Gujrat Hospital. Informed consent, confidentiality and privacy were maintained. Along with the investigator, four research assistants who were trained, collected the data from May, 2023 to July, 2023. The EFA yielded 194 items in the PDI. The Statistical analyses such as multiple linear regression analysis and simple linear regression analysis were carried out to investigate the impact of PPDES and PPDAS on PPDI scales of PDI.

Results

The perinatal distress model was constructed from the qualitative approach yielded three distinct components of perinatal distress in Pakistan. These are psychiatric disorders for assessment, cultural articulation, and cultural aetiology. The psychiatric disorders for assessment in perinatal couples included generalized anxiety disorder, major depressive disorder, mania-hypomania, and psychotic disorders. The cultural articulation included psych-physical means of expressing perinatal distress and included Emotional expression, somatic expression, beliefs in religious and supernatural cognitive expression, and maladaptive emotive-behavioural coping expression. The emotions, somatization, and maladaptive copings are classified as proximal factors whereas religious and supernatural cognitions are classified as distal factor. The cultural aetiology for perinatal distress referred to factors that are considered responsible for the onset of the perinatal distress. These are classified as precipitating factors such as presence of the stressful and traumatic events and beliefs in traditional gender roles. However, perpetuating proximal factors included mental health stigma and family support (with or without empathy), whereas perpetuating distal factor included mental health illiteracy. Finally, the perinatal cognitions and emotional attachment with foetus and infant are present proximal factors and bonding with foetus-infant is included in the present distal factor (Figure 1).

Figure 1: Perinatal Distress Model



The perinatal distress assessed via major depressive disorder, generalized anxiety disorder, mania-hypomania episode (bipolar disorder), and psychotic disorder was culturally expressed in reciprocal interactions of emotions, somatization, maladaptive coping, and religious and supernatural beliefs thereby surrounded by the cultural causal factors of beliefs in traditional gender roles, onset of stressful or traumatic events, mental health stigma and illiteracy, family interaction in terms of provision of support and facilitations, perinatal thoughts, and foetus-infant attachment and bonding.

These factors were evaluated for their contribution to the perinatal distress of couples via regression analysis and the results are presented below.

Table 1: *Multiple Linear Regression for Determinants of Cultural Expression (Proximal Factors) (n=2080)*

Model	**Unstandardized Coefficients**		**Standardized**	**T**	**Sig.**
	B	**Std. Error**	**Coefficients Beta**		
(Constant)	21.782	.881		24.727	.000
Emotions	.580	.067	.179	8.693	.000
Somatization	.508	.029	.393	17.467	.000
MC	.191	.022	.211	8.633	.000
R	0.68				
R^2	0.47				
F	601.78***				

***p<0.001

The multiple linear regression analysis revealed that proximal factors involved in cultural articulation, such as emotions, somatization and maladaptive coping has significantly and positively predicted perinatal distress in couples (R^2 = 0.47, F (3, 2076) = 601.78, p<0.001) and explained 47% of the variance in perinatal distress. Taken together, these findings imply that the greater the levels of emotions, somatization tendencies, and usage of maladaptive coping strategies are, the greater the symptoms of perinatal distress expressed in couples (Table 1).

Table 2: *Simple Linear Regression for Determinant of Cultural Expression (Distal Factor) (n=2080)*

Model	**Unstandardized Coefficients**		**Standardized**		
	B	**Std. Error**	**Coefficients Beta**	**t**	**Sig.**
(Constant)	44.316	.702		63.089	.000
Religious & Supernatural Beliefs	.691	.041	.349	16.958	.000
R	0.35				
R^2	0.12				
F	287.58***				

***p<0.001

The simple linear regression analysis showed that distal factors in cultural articulation, the religious and super natural beliefs significantly and positively predicted perinatal distress in couples (R^2 = 0.12, F (1, 2078) =287.58, p<0.001) and explained 12% of the variance in perinatal distress. The findings suggested the couples with greater beliefs about religious and supernatural explanations of perinatal distress had greater symptoms (Table 2).

Table 3: *Multiple Linear Regression for Determinants of Cultural Aetiology (Precipitating Proximal Factors) (n=2080)*

Model	Unstandardized Coefficients		Standardized		
	B	Std. Error	Coefficients Beta	t	Sig.
(Constant)	39.657	1.246		31.831	.000
Stressful & Traumatic Events	.684	.031	.437	22.028	.000
Gender Roles	.215	.051	.083	4.177	.000
R	0.44				
R^2	0.19				
F	244.45***				

***p<0.001

The multiple linear regression analysis showed that precipitating proximal factors associated with cultural aetiology, such as stressful and traumatic events and gender roles has significantly and positively predicted perinatal distress in couples (R^2 = 0.19, F (2, 2077) = 244.45, p<0.001) and explained 19% of the variance in the perinatal distress. Taken together, these findings imply that the greater the presence of stressful events and beliefs in traditional gender roles is, the greater the symptoms of perinatal distress expressed in couples (Table 3).

Table 4: *Multiple Linear Regression for Determinants of Cultural Aetiology (Perpetuating Proximal Factors) (n=2080)*

Model	Unstandardized Coefficients		Standardized		
	B	Std. Error	Coefficients Beta	t	Sig.
(Constant)	45.131	1.164		38.772	.000
Mental Health Stigma	.512	.065	.166	7.871	.000
Family Support (with Empathy)	-.212	.052	-.091	-4.095	.000
Family Support (without Empathy)	.778	.054	.338	14.386	.000
R	0.46				
R^2	0.21				
F	187.71***				

***p<0.001

The multiple linear regression analysis showed that perpetuating proximal factors involved in cultural articulation, such as mental health stigma and family support significantly predicted perinatal distress in couples (R^2 = 0.21, F (3, 2076) = 187.71, p<0.001) and explained 21% of the variance in perinatal distress. Taken together, these findings imply that the greater the belief in stigmatization of psychological disorder and lack of empathy in family support, higher are the symptoms of perinatal distress expressed in couples. However, couples with greater empathetic family support had fewer symptoms of psychological distress (Table 4).

Table 5: *Simple Linear Regression for Determinants of Cultural Aetiology (Perpetuating Distal Factor) (n=2080)*

Model	Unstandardized Coefficients		Standardized		
	B	Std. Error	Coefficients Beta	t	Sig.
(Constant)	53.449	.773		69.169	.000
Mental Health illiteracy	.181	.084	.047	2.156	.031
R	0.05				

R^2	0.002
F	4.65***

***p<0.001

The simple linear regression analysis showed that perpetuating distal factor involved in cultural articulation, the mental health illiteracy significantly and positively predicted perinatal distress in couples (R^2 = 0.002, F (1, 2078) =4.65, p<0.001) and explained 0.2% of the variance in perinatal distress. The findings suggested that a lack of knowledge of perinatal distress was associated with more symptoms in couples (Table 5).

Table 6: *Multiple Linear Regression for Determinants of Cultural Aetiology (Present Proximal Factors) (n=2080)*

Model	**Unstandardized Coefficients**		**Standardized**		
	B	**Std. Error**	**Coefficients Beta**	**T**	**Sig.**
PC	37.216	.670		55.574	.000
Emotional Attachment	.449	.019	.477	23.366	.000
PC	1.151	.192	.123	6.010	.000
R	0.54				
R^2	0.29				
F	429.16***				

***p<0.001

The multiple linear regression analysis showed that present proximal factors associated with the cultural aetiology, such as perinatal cognitions and emotional attachment significantly and positively predicted perinatal distress in couples (R^2 = 0.29, F (2, 2077) = 429.16, p<0.001) and explained 29% of the variance in perinatal distress. Taken togather, these findings imply that the greater the presence of faulty thoughts related to perinatal period and attachment with foetus-infant are, the greater the symptoms of perinatal distress expressed in couples (Table 6).

Table 7: *Simple Linear Regression for Determinant of Cultural Aetiology (Present Distal Factor) (n=2080)*

Model	**Unstandardized Coefficients**		**Standardized**		
	B	**Std. Error**	**Coefficients Beta**	**t**	**Sig.**
(Constant)	59.420	.992		59.874	.000
Bonding	-.593	.124	-.105	-4.790	.000
R	0.11				
R^2	0.01				
F	22.95***				

***p<0.001

The simple linear regression analysis showed that present distal factor in cultural articulation, the bonding has significantly and negatively predicted perinatal distress in couples (R^2 = 0.01, F (1, 2078) =22.95, p<0.001) and explained 1% of the variance in the perinatal distress. The findings suggested that bonding with foetus-infant is lacking in the presence of perinatal distress in couples (Table 7).

Discussion

The presence of perinatal distress has been observed not only in women (Mayor, 2017) but also in men (Baldoni & Giannotti, 2020). The present study has explored not only the cultural conception of the perinatal distress among the experts and the couples in Pakistan, but also the use of indigenously developed Perinatal Distress Inventory (PDI) and empirically verified the model via the regression analysis.

The results of the qualitative approach revealed that the perinatal distress model (Figure 1) is a multidimensional construct that is composed of three prominent components namely psychiatric disorder assessment such as depression, anxiety, mania/hypomania, and psychotic disorders, cultural expression of perinatal distress (such as emotional expression, somatization, maladaptive coping, and beliefs in religious and supernatural contributors), and precipitating, perpetuating, and present explanations in cultural aetiology of perinatal distress. The PDI was also developed on the basis of reflective thematic analysis and interpretative phenomenological analysis of the verbatim transcripts from the experts and the high risk couples screened for perinatal distress respectively, in addition to a literature review. Initially the PDI contained 209 items but after face validation, content validation, and EFA, a reliable version of the PDI with 194 final items and 7 items for information about the episodes was constructed.

The first hypothesis of the study was stated, "The factors of cultural expression (emotions, somatization, maladaptive coping, and beliefs in religious and supernatural cognitions) will significantly predict the perinatal distress in couples". The results of the present study confirmed the hypothesis. The emotions, somatization, maladaptive coping, and religious-supernataural beliefs significantly predicted the psychological distress in the couples during perinatal period (Tables 1 & 2). Previous studies have shown that emotions (Jones, Harrison, Moulds, & Lazard, 2022), somatization (Buthmann, Gotlib, Buthmann, 2021) and maladaptive coping (Wagner, et al., 2023) are associated with perinatal distress.

The second hypothesis of the study was stated, "The factors of cultural aetiology (stressful and traumatic events; gender roles, mental health stigma, mental health illiteracy, family support, perinatal cognitions, emotional attachment, and bonding) will significantly predict the perinatal distress in couples". The results of the present study confirmed the hypothesis. The determinants of cultural aetiology such as stressful and traumatic events; gender roles, mental health stigma, mental health illiteracy, family support, perinatal cognitions, emotional attachment, and bonding with foetus-infant, significantly predicted the psychological distress in the couples during perinatal period (Tables 3, 4, 5, 6 & 7). Pervious empirical evidences showed that perinatal distress is effected by stressful events (Kingston, et al., 2012) and gender roles (Raghavan, et al., 2022). Perinatal distress in women has been found to be effected by the associated mental health stigma (Law, et al, 2021). The level of mental health literacy is found to be low in association with the perinatal mental disorders (Fonseca, et al., 2017). The low level of family support has been found to be associated with high psychological distress during the perinatal period (Jonsdottir, et al., 2017; Enlander, et al., 2022). Cognitions and thoughts in the perinatal period are contributing factors to the aggravation of symptoms of psychological distress (Callahan, & Denis, 2013; Leach, 2018). Attachment (Meuti, et al., 2015) and bonding (Tokuda et al., 2021; O'Dea, et al., 2023) with foetus-infant are inversely related to the presence of perinatal distress in the couples.

Conclusions

PDM was built on the reflective thematic analysis and interpretative phenomenological analysis of the verbatim transcripts of the experts and the high risk couples screened for perinatal distress respectively. PDM generated three discrete constituents for the perinatal distress conception and expression as perceived in Pakistan. The first constituent of PDM is the occurrence of perinatal distress in terms of psychiatric disorders. The second constituent of PDM is cultural articulation which includes psychophysical means of expressing perinatal distress. The third constituent of PDM is the cultural aetiology for perinatal distress which refers to factors that are considered responsible for the onset and maintenance of the perinatal distress.

PDI containing PPDS, PPDES, and PPDAS was developed. The PPDS comprises four subscales, used to measure the first constituent of the PDM. The total score represented the perinatal distress and served as the dependent variable in the statistical regression model. The PPDES comprises four subscales, used to measure the second constituent of PDM. The four subscales of the PPDES served as the independent variable in the statistical regression model and regression analysis revealed that these were the positive and significant predictors of the perinatal distress. The PPDAS comprises eight subscales, used to

measure the third constituent of PDM. The eight subscales of the PPDAS served as the independent variables in the statistical regression model and regression analysis revealed that these were the significant predictors of the perinatal distress in the couples.

Conclusively, the indigenous perinatal distress model was developed, measured with indigenously constructed Perinatal Distress Inventory, and verified with regression analysis in the perinatal couples of Pakistan.

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Conflict of Interest

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