Perceived Social Support as Predictor of Peripartum Mental Illness in Gilgit, Pakistan

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This study was conducted to assess perceived social support as predictor of peripartum mental illness in Gilgit region of Pakistan. Peripartum mental illness was defined as antenatal and postnatal depression and anxiety while significant other's support, family's support, and friends' support constituted the concept of perceived social support. Research data were collected from 250 women of ages between 20 and 48 years (*M* = 28.02 & *SD* = 5.57) grouped into five categories: first trimester, second trimester, third trimester, four weeks postpartum, and one year postpartum. Participants' perceived social support, depression, and anxiety were assessed using Multidimensional Perceived Social Support Questionnaire (Akhtar, et al., 2010), Patient Health Questionnaire (Ahmad et al., 2018), and Generalized Anxiety Disorder Scale (Ahmad et al., 2018). Kruskal-Wallis test results indicated that there were insignificant differences in all levels of depression and anxiety across five categories. Depression and anxiety were significantly and negatively correlated with significant other's and family's support. Women's occupation was significantly associated with both depression and anxiety; age was significantly correlated only with depression; while living area and monthly income were significantly associated with anxiety. Hierarchical regression analyses revealed that after controlling the effect of demographic variables only family's support out of the three main variables of social support made significant and independent contribution to women's depression and anxiety.

Keyword. Peripartum mental illness, significant others support, family support, friends' support

Mental health is widely considered component of reproductive health and it contributes significantly to the global burden of illness on

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healthcare community (Ishtiaq et al., 2017). Particularly, initial motherhood years - pregnancy to postpartum - a major transition in women's life, make them highly susceptible to develop psychological disorders like depression, anxiety, obsessive compulsive disorder, and posttraumatic stress disorder (Hamed & Attiah, 2019). In response, various special culturally competent perinatal services such as special diet, rest, and organized support to the subjected women are exercised in many cultures across the countries (Dennis et al., 2007). Researchers have identified number of risk/protective factors associated with peripartum mental illness like neurotransmitters, obstetric factors, pregnancy and delivery complications, general health condition, family/personal psychiatric history, sex of fetus, age, education, childbearing stages (pregnancy to postpartum), socioeconomic class, gender inequality, rituals, environment, life events, violence, hope, social support, personality characteristics etc. Hamed and Attiah (2019) have categorized all these factors into biological and psychosocial stressors, which interact with genetic vulnerability to constitute biopsychosocial view of peripartum mental disorders. The present study was intended to assess the role of perceived social support along with demographic variables in women's peripartum mental illness.

Pregnancy has long been considered as a blessed time and free of psychiatric disorders (Gisele et al., 2011) but overall childbearing years (pregnancy to the first 6-12 months postpartum) are characterized by marked biological, psychological, and social changes making women highly vulnerable to develop depression and anxiety (Hamed & Attiah, 2019). By considering the unrelenting impacts of those changes and resultant psychopathology among women, the term "*peripartum*" is introduced in the fifth edition of Diagnostic and Statistical Manual of Mental Disorders as specifier to include prepartum and postpartum episodes as well as hypomanic episodes of mood disorders (American Psychiatric Association, 2013). There is no diagnostic condition or specifier yet available to address peripartum anxiety but the prevalence of peripartum anxiety is more than depression (Osborne et al., 2019). Peripartum mood and anxiety disorders (PMAD) are the most frequent peripartum psychological distressing conditions with prevalence rate of 20% to 40% and 20% to 60% respectively even some countries have high prevalence (Hamed & Attiah, 2019). Falah-Hassani et al. (2017) have conducted meta-analysis and found higher level of comorbidity between peripartum (antenatal & postnatal) depression and anxiety.

According to systematic review findings, the prevalence of antenatal and postnatal depression in low and lower middle-income

countries ranged 15-65% and 5-35% respectively (Halim et al., 2018). In Pakistan different studies reported different levels of antenatal and postnatal depression but the overall prevalence is at alarming level. The prevalence of antenatal depression ranged 18.0% to 80.0% (Jafri et al., 2017; Rabia et al., 2017; Sabir et al., 2019; Saeed et al., 2016). Shah et al. (2011) found that Pakistani women reported higher level of antenatal depression as compared to their Canadian counterparts but another study reported moderate level of depression during pregnancy in Pakistan (Ghaffar et al., 2017). The prevalence of postnatal depression ranged 17.3% to 41.0% (Anjum & Batool, 2019; Sadiq et al., 2015; Saeed et al., 2017; Shah & Lonergan, 2017). Another study reported that the prevalence of postpartum depression in Pakistan is highest in Asia with the prevalence range 28-63% (Gulamani et al., 2013). While other studies reported contradictory findings, i.e. non-pregnant women reported higher level of moderate (Sonia & Sonia, 2019) and mild depression (Ishtiaq et al., 2017) as compared to pregnant women.

Unlike maternal depression (peripartum), maternal anxiety (peripartum) is poorly understood in low and middle-income countries (Bright et al., 2018). Nevertheless, the available evidences suggest that the prevalence of antenatal and postnatal anxiety is also higher in low to middle-income countries (Dennis et al., 2017). In Pakistan, like depression, the prevalence of peripartum anxiety also varies from study to study. For example, Sonia and Sonia (2019) found that pregnant women reported moderate and severe anxiety more frequently than non-pregnant women while Ghaffar et al. (2017) reported moderate level of anxiety among pregnant women. Rabia et al. (2017) reported 25.0% antenatal anxiety while Waqas et al. (2015) revealed different levels of antenatal anxiety such as: normal (29%), borderline (22%), and anxious (49%). Regarding postnatal anxiety Ali et al. (2009) reported 28.8% postpartum anxiety in Pakistan.

By acknowledging the harmful long-term impacts of peripartum mental illness on mother and child, researchers have identified several personal and psychological and social risk factors. The personal and psychological risk factors are: younger age, low self-esteem, low hope, personality traits, family history of peripartum mental illness and general mental illness while social factors consist of low education, low socioeconomic status, and poor social provision (Hamed & Attiah, 2019). In Pakistan researchers have identified a number of risk factors for antenatal depression and anxiety, such as socioeconomic status, domestic violence, husband's employment (Sonia & Sonia, 2019), number of sons and daughters, rural background, history of harassment, and pregnancy and delivery

complications (Waqas et al., 2015), illiteracy, history of psychopathology, housewives, rural areas, highly religious, poor, and husband away for job (Irfan & Badar, 2003), age (Ghaffar et al., 2017), marital status, health status, stressful life events (Ishtiaq et al., 2017), and stress (Gul et al., 2017). Rabia et al. (2017) found that occupation (working women), domestic violence, difficult relationship with in-laws, and unplanned pregnancy for anxiety while occupation, domestic violence, difficult relationship with in-laws, unplanned pregnancy, unsatisfactory relationship with husband, stressful life events in previous year, and level of education (tertiary education) for depression, but another study inferred that gender inequality, gender preference of fetus, and domestic violence contextualized prenatal anxiety in South Asia (Bright et al., 2018). For postpartum depression the risk factors are; elderly age and occupation, like working women are at higher risk to develop postpartum depression (Ramji et al., 2016; Sadiq et al., 2015). Anjum and Batool (2019) have grouped the risk factors of postnatal depression into two major categories. First is biological/medical factor like pregnancy and delivery complications and abortions, and second is psychological factor, which includes violence and social support. Higher level of violence and lower level of social support were reported as strong predictors of increasing prevalence of postpartum depression. Ali et al. (2009) found domestic violence, breastfeeding issues, and unplanned pregnancy as risk factors of postpartum anxiety in Pakistan.

Social support as protective (if high) or risk (if low) factor is a widely studied variable in association with peripartum depression and anxiety. Lack of social support has also been reported as a risk factor of antenatal depression and anxiety (Waqas et al., 2015), postpartum depression (e.g. Afzal & Khalid, 2014; Anjum & Batool, 2019; Kazmi et al., 2013; Naveed & Naz; 2015) while other researchers have reported the higher level of social support as protective factor against postnatal depression (Sadiq et al., 2015). Peripartum depression among British Pakistani mothers was significantly associated with their social isolation, poor social support, and severe and persistent social difficulties (Husain et al., 2012). Poor relationship with husband was significantly associated with postpartum depression among Pakistan women living in Norway (Bjerke et al., 2008). Another study reported that women with postpartum depression conveyed lower level of friends support as compared to women without postpartum depression however, insignificant differences were observed in significant other's support and family's support between both groups (John, 2017). On the basis of systematic review findings, Biaggi et al. (2016) concluded that lack of support has been found as the strongest

risk factor of antennal anxiety and depression. While another study from Pakistan reported contradictory findings, i.e. lack of social support was not found to be a risk factor of antenatal depression (Humayun et al., 2013).

Reviewed literature revealed that the prevalence of antenatal and postnatal depression and anxiety and associated risk/protective factors, particularly social support are well addressed in developed nations including mainstream Pakistan but there is scarcity of scientific literature in Gilgit-Baltistan, necessitating the execution of current study in this far-flung region of Pakistan.

Research Objectives

This research was conducted to assess the role of social support (significant other's support, family's support, & friends' support) in women's peripartum mental illness (depression & anxiety) during childbearing period (pregnancy to one year postpartum). Moreover, it also studied the role of demographic variables in participants' peripartum mental illness.

Method

Participants

In the present study we included 250 women based on purposive sampling technique. Their ages ranged between 20 and 48 years ($M = 28.02$; $SD = 5.57$). Out of 250, 92 (36.8%) were from nuclear and 154 were (61.6%) from joint family system; 127 (50.8%) were from Hunza, 92 (36.8%) from Gilgit and rest of them (12.4%) were from other districts of Gilgit-Baltistan. The monthly income of respondents ranged between PKR. 5000 and 350000 ($M = 42604.18$ & $SD = 38226.11$). Majority of participants [184 (73.60%)] were housewives, 50 (20.0%) were working women, and 16 (6.40%) reported other occupations. Regarding education 34 (13.60%) were illiterate, and 20 (8.0%), 27 (10.80%), 66 (26.40%), 43 (17.20%), and 59 (23.60%) had primary, secondary, higher secondary, graduation, and master level of education respectively. Participants were grouped into five cohorts according to the childbearing period: first trimester, second trimester, third trimester, four weeks postpartum, and one year postpartum with 50 participants in each category.

Measures

Demographic Form

Demographic information was collected by a self-made demographics' scale that included basic information of the pregnant

women like qualification, duration of pregnancy, family system, age, monthly income etc.

Patient Health Questionnaire (PHQ-9)

Urdu version of PHQ-9 (Ahmad et al., 2018) was used to measured prevalence of depression in women. PHQ-9 is 9-item scale with four response options to be rated: never (0), sometimes (1), often (2), and always (3). Score ranges: 0-4, 5-9, 10-14, 15-19, and 20-27 indicate none, mild, moderate, moderately sever, and severe level of depression respectively. The Urdu version reportedly has good level of reliability; Cronbach's alpha of 0.91 and validity; unidimensional factor loading with the eigenvalue of 5.64 that explained 56.42% variance (Ahmad et al., 2018).

Generalized Anxiety Disorder (GAD-7) Scale

Urdu version of GAD-7 (Ahmad et al., 2017) was used to measure prevalence of anxiety among women. GAD-7 is 7-item scale with four response options to be rated: never (0), sometimes (1), often (2), and always (3). Score ranges 0-5, 6-10, 11-12, and 16-21 reflect none, mild, moderate, and severe level of anxiety. The Urdu version reportedly has good level of reliability; Cronbach's alpha of 0.92 and validity; unidimensional factor loading with the eigenvalue of 5.18 that explained 64.80% variance (Ahmad et al., 2017).

Multi-Dimensional Perceived Social Support Questionnaire (MSPSS)

Urdu version of MSPSS (Akhtar et al., 2010) was administered to assess women's perceived social support. MSPSS is 7-point likert-type scale to be rated as very strongly disagree (1), strongly disagree (2), mildly disagree (3), neutral (4), mildly agree (5), strongly agree (6), and very strongly agree (7). The scale consists of three subscales: significant other's support, family's support, and friends' support with four items in each. Mean score ranges: 1-2.9, 3-5, and 5.1-7 in each subscale show low support, moderate support, and high support respectively. The Urdu version has good level of Cronbach's alpha (.92) and all sub-scales were highly inter-correlated ranged from .65 to .78 (Akhtar et al., 2010).

Procedure

In this study we collected data from women by visiting hospitals, clinics, and homes. Both, institutional permission and individual consent was obtained before data collection by sharing research

objectives. PHQ-9, GAD-7, and MSPSS were administered on participants to assess their level of depression, anxiety, and perceived social support. Participants were assured about the confidentiality of data and they had the right to withdraw from research at any time/ stage. Data analysis was performed using SPSS (v-23).

Data Analysis

Participants were grouped into five categories based on their pregnancy and delivery status: first trimester, second trimester, third trimester, four weeks postpartum, and one year postpartum. Frequency and Kruskal-Wallis test were applied to interpret and compare different levels of depression, anxiety, significant other's support, family's support, and friends' support across different pregnancy and postpartum categories. Correlation coefficient was used to assess correlation among depression, anxiety, significant other's support, family's support, and friends' support.

Before hierarchical regression analysis, different statistical techniques were used to evaluate the role of demographic variables in women's depression and anxiety. Analysis of variance was applied to assess role of living area, occupation, education, and trimesters. Independent sample t-test was used to explore role of family system, and correlation was used to measure the relationship between age, and monthly income and depression and anxiety. Hierarchical regression was applied to control significant demographic variables in the first step (age for depression & monthly income for anxiety) and main variables; significant other's support, family's support, and friends' support were entered into second step.

Results

Frequency and Kruskal-Wallis test were applied to interpret and compare different levels of depression, anxiety, significant other's support, family's support, and friends' support across different pregnancy and postpartum categories (Table 1).

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Table 1

Prevalence of Depression, Anxiety, and Social Support for Five Periods (N = 250)

Scale	Ranges (interpretations)	1st trimeste	2nd trimester	3rd trimester	Four week	One year	Total	χ^2 (p)
		f (%)	*f (%)*	*f (%)*	Postpartum *f (%)*	Postpartum *f (%)*	*f (%)*	
PHQ-9	0-4(None)	11(22)	16(32)	11(22)	16(32)	14(28)	68(27.2)	2.53(.63)
	5-9(Mild)	17(34)	18(36)	23(46)	14(28)	22(44)	94(37.6)	4.65(.32)
	10-14(Moderate)	17(34)	9(18)	7(14)	11(22)	11(22)	55(22)	6.50(.16)
	15-19(Moderately severe)	5(10)	6(12)	8(16)	7(14)	3(6)	29(11.1)	2.87(.57)
	20-27(Severe)	0(0)	1(2)	1(2)	2(4)	0(0)	4(1.6)	3.54(.47)
GAD-7	0-5(None)	30(60)	26(52)	22(44)	25(50)	27(54)	130(52)	2.71(.60)
	6-10(Mild)	12(24)	19(38)	13(26)	11(22)	13(26)	65(26)	3.94(.41)
	11-15(Moderate)	7(14)	5(10)	11(22)	10(20)	6(12)	39(15.6)	4.05(.39)
	16-21(Severe)	1(2)	0(0)	4(8)	4(8)	4(8)	13(5.2)	6.14(.18)
SOS	1-2.9(Low support)	4(8)	9(18)	7(14)	6(12)	0(0)	26(10.4)	10.0(.04)
	3-5(Moderate support)	9(18)	19(38)	18(36)	13(26)	4(8)	60(24)	16.6(.00)
	5.1-7(High Support)	37(74)	22(44)	25(50)	31(62)	46(92)	161(64.4)	32.2(.00)
FSS	1-2.9(Low support)	3(6)	5(10)	5(10)	6(12)	1(2)	20(8)	4.33(.36)
	3-5(Moderate support)	14(28)	23(46)	20(40)	13(26)	9(18)	79(31.6)	11.6(.02)
	5.1-7(High Support)	33(66)	22(44)	25(50)	31(62)	40(80)	151(60.4)	16.5(.00)
FrSS	1-2.9(Low support)	9(18)	10(20)	4(8)	11(22)	19(38)	53(21.2)	13.9(.00)
	3-5(Moderate support)	20(40)	26(52)	23(46)	19(38)	11(22)	99(39.6)	10.5(.03)
	5.1-7(High Support)	21(42)	14(28)	23(46)	20(40)	20(40)	98(39.2)	3.77(.43)

Note. SOS = Significant Others Support, FSS = Family Support, FrSS = Friends Support

Kruskal-Wallis test results indicated that there were insignificant differences in all levels of depression and anxiety across different pregnancy and delivery categories, however, significant differences were found in all levels of significant other's support, family's support, and friends' support across different levels of pregnancy and postpartum categories except low family's support and high friends' support categories (Table 1).

Table 2

Correlation Between Depression, Anxiety and Social Support (N = 250)

S#	Scale	M	SD	α	1	2	3	4	5
1	Depression	8.0	4.95	.71	-				
2	Anxiety	6.15	4.83	.78	.65**	-			
3	Significant other Support	21.62	6.64	.85	-.24**	-.21**	-		
4	Family Support	20.88	5.87	.82	-.37**	-.40**	.53**	-	
5	Friend's Support	17.28	7.1	.88	-.06	-.08	.09	.29**	-

**$p < .01$.

Depression and anxiety were significantly and negatively correlated with significant other's support and family's support. Family's support was significantly and positively correlated with significant other's and friends' support (Table 2).

Before performing hierarchical regression, we assessed the role of demographic variables; age, occupation, living area, monthly income, education, family system, and trimesters in women's depression and anxiety. Women's occupation was significantly associated with both depression ($F = 3.3$, $p = .03$) and anxiety ($F = 3.1$, $p = .04$), age was significantly associated only with depression ($r = .15$, $p = .02$), while living area ($F = 2.4$, $p = .04$) and monthly income ($r = -.14$, $p = .02$) were significantly associated with anxiety.

In the first step of hierarchical regression, we controlled age for depression and monthly income for anxiety. Results revealed that age for depression and monthly income for anxiety were found as significant demographic variables. Age as control variable explained 2.0% unique variance in depression while monthly income as control variables explained 2.0% unique variance in anxiety. In the second step, only family's support made significant and independent contribution to women's depression and anxiety. Sixteen percent and seventeen percent of variance in women's depression and anxiety were explained by family's support respectively (Table 3).

Table 3

Hierarchical Regression Analysis Predicting Women's Peripartum Mental Illness (Depression & Anxiety)

Predictors		Model for Depression				Model for Anxiety		
		β	R^2	ΔR^2		β	R^2	ΔR^2
Step 1			.02	.01			.02	.01
Constant	4.34				6.93			
Age		.14[*]				N/A		
Monthly income		N/A				-.14[*]		
Step 2			.16	.15			.17	.15
Constant	13.00				10.65			
SOS		-.04				.00		
FSS		-.36[**]				-.40[**]		
FRSS		.08				.01		

[*]$p < .05$, [**]$p < .01$.

Discussion

In this study we assessed peripartum mental illness in association with women's perceived social support in Gilgit region of Pakistan. Study results indicated that participants' reported levels of depression and anxiety did not significantly differ across childbearing stages (from pregnancy to one year postpartum). Findings of current study are consistent with other studies reported by researchers. For instance, Podvornik et al. (2015) found that depression and anxiety across the pregnancy was not significantly different. There was stability of depression and anxiety across pregnancy and postpartum with a mean decrease in both and majority of cases of postnatal depression, and anxiety was preceded by antenatal depression and anxiety (Heron et al., 2004). In contrast, other researchers have reported different findings. For example, postnatal depression and anxiety are less common as compared to prenatal depression and anxiety (Andersson et al., 2006). Some researchers have reported decreasing patterns across trimesters and postpartum in anxiety (Rados et al., 2018) and depression (Ibrahim et al., 2014), another study found that anxiety symptoms followed U-pattern and depression symptoms decrease throughout pregnancy (Teixeira et al., 2009) while Lee et al. (2007) reported U-pattern in both anxiety and depression at different stages. Some researchers have argued that stability/fluctuation in depression is more associated with different psychological and etiological factors rather than course of pregnancy and postpartum (Gotlib et al., 1989). For example, psychiatric history, major life events, unplanned pregnancy (Truijens et al., 2017), history of depression, and old age

(Bouzari et al., 2016) were identified as risk factors in fluctuation of depression and anxiety. Hence, childbearing period as only factor cannot explain any possible stability/fluctuation in depression and anxiety but it warrants the importance of demographic, biological, psychological, and social factors for better understanding of different patterns of peripartum mental illness.

Out of the studied demographic variables age was found as significant variable to predict women's peripartum depression. Other researchers from Pakistan also reported age as significant predictor of peripartum depression. For example, Ghaffar et al. (2017), Ali et al. (2012), and Din et al. (2016) reported age as a significant factor in antenatal depression while Ramji et al. (2016) found increasing age as significant risk factor of postnatal depression. Participants' anxiety was significantly predicted by their living area and monthly income. Similar findings reported by researchers, e.g. socioeconomic status (Sonia & Sonia, 2019), poverty (Irfan & Badar, 2003), monthly income (Din et al., 2016) low income (Podvornik et al., 2015) and living area, i.e. rural background (Irfan & Badar, 2003; Waqas et al., 2015) were found as significant predictor of peripartum anxiety.

Hierarchical regression analysis revealed that after controlling significant demographic variables, only family's support was found as significant predictor for participants' peripartum depression and anxiety. Similar evidences reported by researchers where family's support was significantly associated with antenatal and postnatal anxiety (Racine et al., 2019), antenatal and postnatal depression (Rahman et al., 2003), prenatal depression (Senturk et al., 2011), antenatal depressive symptoms (Agostini et al., 2015), and postpartum stress (Hung & Chung, 2001). In the present study significant other's and friends' support was insignificant predictor of peripartum depression and anxiety. Haslam et al. (2006) also reported partner's support as unrelated with postpartum depressive symptomatology. Although a wide pool of literature provides contradictory findings. For example, lack of social or partner's support was reported as risk factor for antenatal depression and anxiety (Biaggi et al., 2016; Waqas et al., 2015), postnatal depression and anxiety (Hetherington et al., 2018), postpartum mental illness (Gjerdingen & Chaloner, 1994), postpartum depression (Leung et al., 2005), and antenatal depressive symptoms (Agostini et al., 2015). Social support was reported as a strong protective factor against perinatal depression and anxiety (Milgrom et al., 2019) and postpartum depression (Anjum & Batool, 2019; Pao et al., 2019).

To conclude, we found similar patterns in different levels of depression and anxiety across childbearing period. Among

demographic variables, age was found as significant predictor for depression and monthly income for anxiety. Only family's support was found as significant predictor of participants' peripartum mental illness. Based on our findings, we recommend mental health professionals to consider the importance of family support in addressing women's overall peripartum mental illness, increasing age for depression, and monthly income area for anxiety. Despite its vital contribution for the field, the current study had some limitations to consider, like convenient sampling and using self-report methods to generate research data.

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