Psychological Distress Experienced by Women with Primary Infertility in Pakistan: Role of Psycho-Social and Cultural Factors

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This study aims to examine the predictive role of psycho-social factors in psychological distress among women with primary infertility and to explore the nature of mental pressures faced by these women. A sample of 200 women with primary infertility was recruited from various infertility clinics in Rawalpindi and Islamabad. A demographic sheet, Urdu versions of General Health Questionnaire, Couple's Satisfaction Index-4 (CSI-4) a Self-Report Questionnaire (SCQ) were used to assess psychological distress, marital satisfaction, personal and other family members' desire for child, available social support, and nature of mental pressures faced by women. About 82% of these women reported distress. The standard multiple regression analysis showed that low marital satisfaction (β =-0.716; p<0.001); woman's non-work status (β =0.183; p<.001) and high personal desire to have child (β =0.136; p=0.006) were significant predictors. Low social support from mother-in-law (β = 0.286; p<0.001) and high personal (β = -0.188; p<.01) and husband's desire to have child (β = -0.288; p<.001) influenced marital satisfaction. Besides factors such as criticism, loneliness, inquiries made by other people, fear of husband's second marriage, quarrelsome in-laws were reported as stressors. Women with primary infertility are at increased risk to experience psychological distress attributable to several social and cultural factors.

Keywords: Primary infertility, Psychological distress, Psycho-social factors

1. INTRODUCTION

Infertility is defined as "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12months or more of regular unprotected sexual intercourse" [Zegers-Hochschild, *et al.* (2009); pg 4]. However, infertility is not only a major reproductive health problem but also a substantial social and psychological issue. It is directly linked to maintenance of women's social status and acceptance in society as wives and mothers [Bell (2009)].

The rates of infertility among Pakistani women are on the rise reaching up to almost 22%; (3.5% primary and 18.4% secondary) [Tahir, *et al.* (2004)]. A recent cross-sectional survey of 7,628 out-patients from Gynecology and Obstetrics Department at the Federal Government Services Hospital, Islamabad found that frequency of infertility in this population was 7% [Shaheen, *et al.* (2010)]. It has been commonly observed that in Pakistani society, blame for not having a child is usually placed on the women. This blame then invites more serious problems for women like husband's second marriage,

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divorce, physical and emotional harassment [Hussain (2010)].Sometimes wives who do not have children are also deprived of their share in inheritance or asked to go back to their parental home without being divorced. These consequences are reported in both primary and secondary infertility cases [Sami and Ali (2006)]. Infertility problem has been known to cause huge damage to Pakistani women as well [Bhatti, *et al.* (1999)]; however, not much attention has been given to identify and address the social, psychological and cultural factors which are associated with psychological distress among women suffering from primary infertility.

Investigating the role of these factors among infertile Pakistani women is worth researching as dynamics of infertility experiences and help-seeking behaviours of couples vary depending upon their ethnic and religious backgrounds [Culley, *et al.* (2013)]. Also differences exist in perceptions of people who are living in low-income, middle-income or advanced Western countries [Greil, *et al.* (2003)]. In many technologically advanced countries, infertility is also viewed as volitional [Sundby (1999)]. Despite of rapid globalization, Eastern women's role in home and society is actually determined by motherhood. It becomes women's responsibility to complete the family by reproducing children after marriage. In cases of failure, the women's status and position at her home becomes questionable [Sami and Ali (2006)]. To deal with these social pressures, stigmas and fear of losing one's identity at home and society, these women expose themselves to extensive infertility treatments. The availability of technologically advanced treatment methods for infertility has created hope and at the same time is a source of great distress for women due to low success rates and high costs [Jin, *et al.* (2013)]. In Pakistan, there is no well-established health insurance system and most agencies or employers also do not cover for infertility treatments. When couples from middle and lower middle classes opt for infertility treatments, it is often associated with increased financial burden, physiological complications and emotional outcomes in case of failure of treatment [Bhatti, *et al.* (1999); Hussain (2010)]. Moreover, social correlates of infertility such as complex network of social expectations, demands and relationships appears to transform this personal health problem into a social agony [Daar and Merali 2002)].

Several factors such as illiteracy, unemployment, poor work conditions are found to be associated with high rates of depression among people in low and middle income countries [Nisar,Billo and Gadit (2004)]. Local studies [Mumford, *et al.*(2000); Luni, *et al.* (2009)] have shown that rates of distress are generally high particularly among women living in low socio-economic conditions, low levels of education and unemployed. However, studies have also shown that infertility remains a significant risk factor for psychiatric morbidity when controlling other factors. For instance, findings of a comparative study showed women without children had high rating on depression scale than women with children [Guz, *et al.* (2003)]. Finding from a case-control study showed that infertile women were two times more likely to report depression then women in control group [Domar, *et al.* (2000)]. Studies have indicated that infertile women showed much

higher levels of emotional distress than their male partners and prevalence of depression ranges from 8% to 54% among infertile women [Deka and Sarma (2010)].

Marital satisfaction has been found to be associated with mental well-being among married couples [(Hashim, *et al.* (2007)]. However, it becomes more important in case of couples struggling with infertility. Western studies have also documented that women with primary infertility often report social isolation, low levels of marital satisfaction, high levels of stress and guilt [Edelmann and Laffont (1997)]. The existing literature recognizes the role of social support in promoting mental wellness in diverse populations [Wang, *et al.* (2014)]. Despite increased awareness about causes of infertility, it is also a common phenomenon in Pakistan that women are often victimized and blamed for infertility by their dear and near ones. Women with primary infertility report high levels of social alienation and isolation [Van Balen and Bos (2009)] thus looking specifically at the role of social support and is very much pertinent.

A systematic review of literature on psychiatric morbidity among infertile women suggests [Hussain (2010)] that previous studies conducted in Pakistan have broadly identified the problems faced by women due to infertility [Sami and Ali (2006); Bhatti, Fikree and Khan (1999); Begum and Hassan (2014)].However, there is limited research [Qadir, *et al.* (2015)], which have specifically examined the role of psycho-social and cultural factors by combining quantitative and qualitative modes of inquiry. Findings of study will broaden our understanding on how marital satisfaction, social support, personal and social expectations are relevant factors to address infertile women's vulnerability for psychological distress.

Theoretical Background

By laying its foundation on Social Model of Health and Stress theories, this research aims at identifying some of the significant determinants of psychological distress among infertile women. Social Model of Health [Baum, *et al.* (2001)] recognize the role of social, economic, cultural and environmental factors on people's health. The existing literature on psychological distress among infertile women calls for continued progress in the identification of role of social and cultural factors in determining women's vulnerability for psychological distress [Greil, *et al.* (2010)]. The Social Model of Health emphasizes empowerment of individuals and communities and promotion of health and well-being through targeting these specific social, cultural and environmental determinants [Baum, *et al.* (2001)]. Stress theories suggest that social stress is caused by anything which prevents a person from achieving desired goals or maintain valued roles [Aneshensel (1992)]. Infertility becomes a stressful experience as women face lot of pressures from family and society in traditional societies if they are not able to conceive within first few years of marriage. Failures to achieve success in this matter create difficulties in maintaining their valued roles as motherhood is considered as the primary role for a woman in these cultures. Women can be empowered by addressing to social, culture cultural and environmental determinants of infertility related stress.

In the light of empirical evidences and common observations, following hypotheses were developed:

1. Rates of psychological distress will be high among infertile women.
2. There will be low levels of marital satisfaction among infertile women.
3. Factors such as (woman age, education, occupational status, monthly income, family members, years of married life, marital satisfaction, personal desire to have children, husband's desire to have children, expectations of other family members and social support) will be significantly associated with psychological distress.
4. In multiple regression model, low marital satisfaction will significantly predict psychological distress independent of other factors.
5. Considering Pakistani society as a traditional society, women are likely to report different kinds of mental pressures faced by them due to infertility.

2. METHOD

Study Design

A cross-sectional study design was employed. Both quantitative and qualitative modes of inquiry were used. Quantitative data provides statistical evidence on nature and strength of relationship between study variables whereas qualitative data increased its richness by identifying any other cultural and social pressures faced by women due to infertility.

Sample

Participants were recruited from three infertility clinics of Rawalpindi and Islamabad, Pakistan. The eligibility criteria included, diagnosed with primary infertility and has not adopted any child, age range >20 and <45 years, length of marriage at least 3 years. The literature [Menken, *et al.* (1986)] suggests fertility changes with age as well there are variations in distress among women with infertility [Greil, *et al.* (2011)]. Thus dynamics of distress due to infertility are very different for women who are in their teens than those who are in late 40s [Liu and Case (2011)]. The inclusion criterion for woman's age (>20 and <45 years) was selected to gain more conclusive evidence about dynamics of distress due to infertility among married women in this age range. A total of 234 women were accessed to participate in the study out of which 212 women completed self-report questionnaires. Complete data was available on 200 survey forms.

The demographic characteristics of participants are as follow. The age range was (20-45 year) with mean and median of 32 yrs. The range for monthly income was (Rs.10,000-87,218) with median of (Rs.35,000) and mean of (Rs.64,930) thus median is a better indicator here. The mean for years of education was 12.5 with S.D. 3.5. The range

for years of married life was from 3-26 years and median was 8.7. Majority of women were living in joint family system (62%) and were housewives (58.5%).

Measures

Demographic sheet was used to obtain information about age, education, occupation, length of marital life, approximate monthly income, family system, number of total family members and numbers of earning family members. An Urdu version of General Health Questionnaire (GHQ-12) [Minhas and Mubassshar (1996)] was used to assess psychological distress. GHQ-12 is a well-known self-report psychiatric screening instrument. The General Health Questionnaire (GHQ) was originally developed by Goldberg in the 1970s which was 60-item questionnaire to assess current mental health. This scale has been translated into many different languages and has been extensively used in research and clinical settings in various countries across the world [Goldberg (1988); Jacob, *et al.* (1997); Montazeri, *et al.* (2003)]. It includes items which assess levels of depression, unhappiness, anxiety, psychological disturbance, social impairment and psychological well-being of respondents. Each item is accompanied by four response options as "*not at all*", "*no more than usual*", "*rather more than usual*", and "*much more than usual*". The cutoff score for GHQ-12 is 11. The alpha reliability reported by previous studies range from .77-.93 [Goldberg and Williams (1988); Minhas and Mubassshar (1996)]. The alpha reliability of this measure in this study was also found adequate (α=.93).

The short Urdu version of Couple's Satisfaction Index-4 (CSI-4) [Qadir, *et al.* (2005)] was used to assess martial satisfaction. It is comprised of four items. Item# 1 is scored on 0-7 Likert scale, where 0 stands for "*extremely unhappy*" and 7 stands for "*could not possibly be any happy*". Range for items 2, 3 and 4 is from 0-6, where 0 stands for "*not at all true*" and 6 stands for "*absolutely and completely true*". The scale implies that higher the scores on CSI-4, higher is the satisfaction from marriage. The scale has adequate psychometric properties with alpha reliability of .94 [Funk and Rogge (2007)]. The internal reliability of scale demonstrated in this study was (α=.96).

A self-report questionnaire (SRQ) was employed to assess social support in context of infertility experience. The scale has been used in previous study from India [D'Souza, Noronha, Judith and Nayak (2014)] and alpha reliability was .90. On this scale, women were asked a question "How much following people support you in the worry of being childlessness?" Participants were asked to rate the social support available to them from (Father, Mother, Brothers, Sisters, Father-in-law, Mother-in-law, Sister-in-law, Friends and Neighbors) on a five-point Likert scale (Very low to very high). The same questionnaire also contains items which assess personal desire, husband's desire and other family members desire to have children on a five point rating scale (Very low to Very high).

Fig.1. Conceptual Model to Illustrate Predictors of Psychological Distress and Low Martial Satisfaction Among Infertile Women
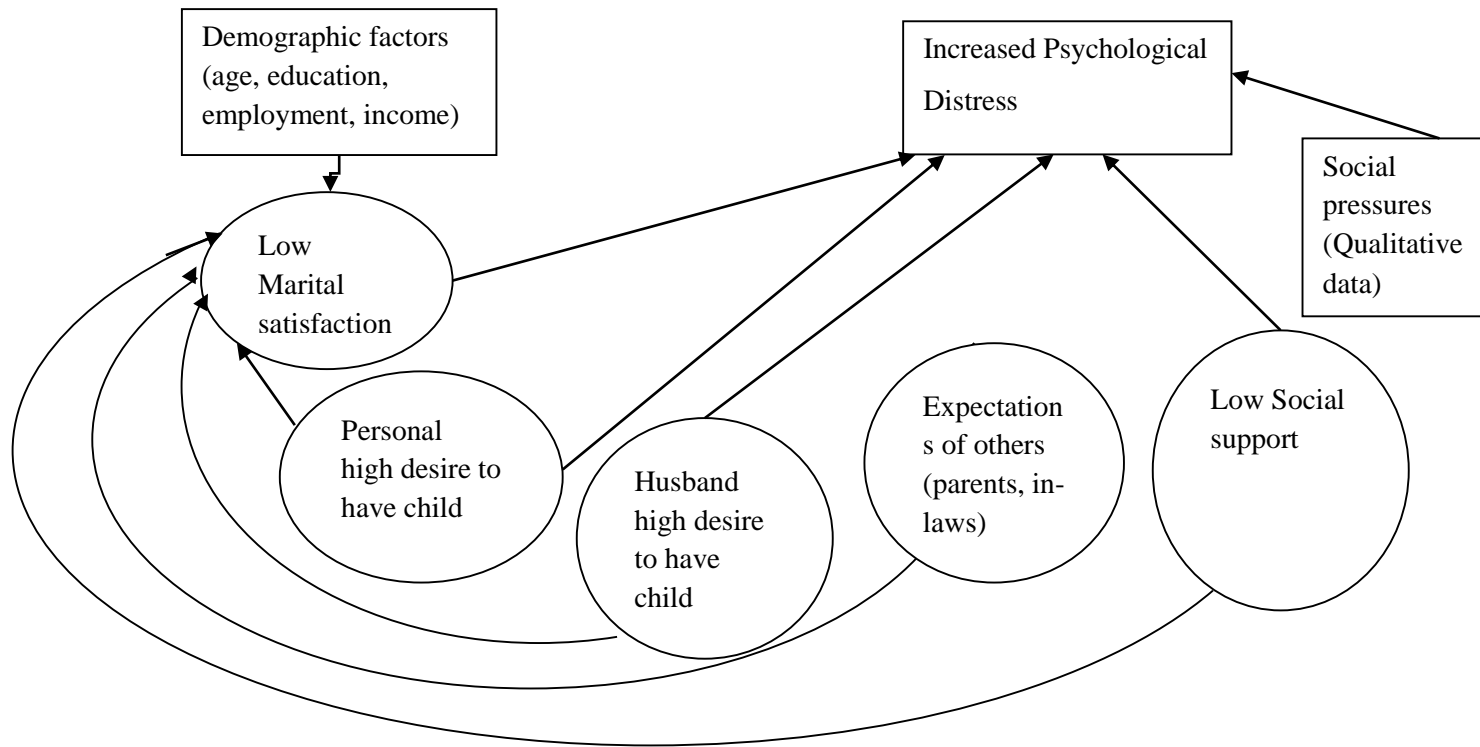
Qualitative Data

An open-ended questionnaire was used to obtain information about nature of mental pressures faced by women due to infertility. The responses were transcribed and coded by employing categorical strategy. This involves breaking down the narrative data and rearranging it to produce categories [Teddlie and Tashkori (2009)]. The codes/catego ries obtained through content analysis are then quantified by employing simple frequency counts. This analytical strategy was well-suited to attain aims of analysis for this part of study.

The study aims at assessing the role of psycho-social factors such as woman's age, education, occupational status, family system, marital satisfaction, social support and cultural factors in determining psychological distress among women with primary infertility. The use of above-mentioned tools and modes of inquiry was justified in context of study objectives. A pilot administration of questionnaire was carried out on five participants to assess and address any problems faced by participants in terms of understanding and responding to these questionnaires. Participants of pilot survey did not report any significant issue in this regard.

Ethical considerations

Prior approval was obtained from the ethical review committee of the institution. Consent was obtained from the administration of healthcare institution to conduct the study. Complete information about nature of study and information about available resour ces to seek mental health services/support was shared with study participants through Inf ormed Consent. Confidentiality and anonymity of participant was maintained by administration of questionnaires in private space and by coding of the data sets. The debriefing session at end of interview were conducted to help women cope with any stress caused by participation in this research.

3. RESULTS

General Psychological Distress and Marital Satisfaction

Analysis of responses showed that (N=164/200; 82%) scored above than cutoff score as assessed by GHQ-12, thus providing evidence that rates of general psychological distress experienced by infertile women is high. Women showed low to moderate level of marital satisfaction as assessed by CSI-4 with mean (M) of 13.5 and standard deviation (S.D) of 6.5. This pattern of findings support hypotheses 1 and 2 as majority of infertile women had psychological distress and experienced low to moderate levels of marital satisfaction.

Determinants of Psychological Distress in Infertile Women

A standard multiple regression analysis was performed to identify significant determinants for psychological distress in infertile women. Standard multiple regression was used to answer: a) what is the size of the overall relationship between psychological distress (the predicted variable) and the independent (predictor) variables i.e. socio-demographic variables (age, years of education, occupational status, family monthly income, number of earning family members, years of marital relation, family system) and psycho-social factors, i.e., (marital satisfaction, social support, personal desire to have children, husband's desire to have children, close relative's desire to have children) and b) how much does each independent (predictor) variable uniquely contributed to that relationship? All predictor variables were entered into the regression equation at once as per rules of standard multiple regression.

Inspection of correlations between independent and dependent variables showed that woman's years of education ($r=-.13$; $p<.05$), work status ($\rho=-.28$; $p<.001$), family monthly income ($r=-.16$; $p<.05$) family system ($\rho=.26$; $p<.001$), number of family members ($r=.22$; $p<.001$), number of earning family members ($r=.17$; $p<.001$), marital satisfaction ($r=-.78$; $p<.001$), woman's personal desire to have children ($r=.34$; $p<.001$), husband's desire to have children ($r=.31$; $p<.001$), social support from mother-in-law ($r=-.23$; $p<.001$), father-in-law ($r=-.17$; $p>.01$) and sister-in-law ($r=-.25$; $p<.05$) were significantly associated with psychological distress. Rest of the predictor variables (age, years of married life, parent's desire to have child, parent-in-law's desire to have child, social support from parents, siblings, neighbours, friends) showed insignificant relationship with outcome variable. These variables were thus not entered in regression model.

Inspection of inter-correlations among independent variables suggested some of the independent variables were highly and significantly associated with each other such as age with years of married life ($r=.85$; $p<.001$), family system with number of family members ($r=.73$; $p<.001$), and number of family members with number of earning family members($r=.83$; $p<.001$). Both age and years of marital relation showed very low and insignificant association with outcome variable thus excluded from multiple regression analysis. Number of family members was used as proxy for family system and number of earning family members in regression model due to high inter-correlation values among them.

Above-mentioned demographic and psycho-social variables were entered in regression model. The analysis of findings showed there was independence of residuals, as assessed by a Durbin-Watson statistic of 1.44. The partial regression analysis showed that linear relationship existed between predictors and outcome variables. The tolerance values for all variables lie between (.48-.92) and VIF were greater than 1 but less than 3 thus indicating no multi-collinearly. The inspection of P-P Plots showed little deviations thus demonstrating good model fit. A value of $R=0.82$, indicated an adequate level of prediction. Adj. R^2 value was 0.66 (66%) thus showing this much of variance in outcome

variable is explained by predictor variables. The regression model is a good fit of the data as indicated by *F (10, 189) = 40.339, p < .001*. The standard multiple regression analysis showed low levels of marital satisfaction was the most significant predictor for psychological distress (β=-.716; p<.001) followed by woman's occupational status (β=.183; p<.001) and personal desire to have children (β =.136; p=.006) (Table 2). The part correlations also suggest that 36% of variance in outcome variable is actually explained by low levels of martial satisfaction.

Another interesting observation was related to significant association of marital satisfaction with other predictor variables, i.e., work status (.15; p<.01); family system (r=.19 p<.005); number of family members (r=.09; p<.01); personal desire to have children (r=-.28; p<.001); husband's desire to have children (r=-.28; p<.001); support from mother-in-law (r=.37; p<.001); support from father-in-law (r=.27; p<.001) and support from sister-in-law (r=.30; p<.001). However, the correlation values in all cases were below (r<.39) thus these variables were entered in regression model to see their independent contributions. This pattern of findings also suggests the need to explore the role of demographic and psycho-social variables in marital satisfaction among infertile women.

Table 1.Standard Multiple Regression Analysis to Identify Determinants of Psychological Distress in Infertile Women (N=200)

Variable	Association with Psychological Distress	b	β
Years of education	-0.132*	0.114	0.021
Occupation status	-0.287***	-3.126***	-0.183***
Approx. monthly income	-0.162**	-2.38E-006	-0.025E-006
No. of family members	0.225**	0.143	0.082
Marital Satisfaction	-0.787***	-0.916***	-0.716***
Personal desire to have children	0.349***	1.87**	0.136**
Husband desire to have children	0.310***	0.113	0.009
Social Support from Mother-in-law	-0.239***	0.429	0.074
Social Support from Father-in-law	-0.178**	0.166	0.026
Social Support from Sister-in-law	-0.259***	-0.396	-0.072

*p<.01; **p<.05; ***p<.001; Occupational Status 1=Housewife 2=Working.
b=Unstandardized coefficients; β =Standardized coefficients.

Predictors of Marital Satisfaction in Infertile Women

Standard multiple regression analysis was performed to identify which (demographic and psycho-social variables) significantly influence marital satisfaction. The analysis of findings showed there was independence of residuals, as assessed by a Durbin-Watson statistic of 2.11. The partial regression analysis showed that linear relationship existed between predictors and outcome variable. A value of R=0.51, indicated an adequate level of prediction. Adj. R2 value was 0.239 thus showing (24%) of the variance is explained by predictor variables. The regression model is a good fit of the data

as indicated by $F (9, 191) = 8.79, p < .001$. Variables i.e. low social support from mother-in-law ($\beta = .286$; p<.001) and high personal desire ($\beta = -0.188$; p<.01) and high husband's desire ($\beta = -0.288$; p<.001) to have children significantly predicted marital satisfaction.

Table 2: Standard Multiple Regression Analysis to Identify Predictors of Marital Satisfaction in Infertile Women (N=200)

Variable	Association with Marital Satisfaction	b	β
Years of education	0.064	0.268	0.064
Years of married life	0.089	0.106	0.089
Monthly Income	0.175	1.322E-005	0.175
No. of family members	-0.160**	-0.219**	-0.160**
Personal desire to have children	-0.281***	-0.264*	-0.188*
Husband desire to have children	-0.288***	-0.293***	-0.288***
Social Support from Mother-in-law	0.375***	0.291***	0.286***

*p<.01; **p<.05; ***p<.001;
b=Unstandardized coefficients; β =Standardized coefficients.

Analysis of Responses on Open-Ended Question

It was hypothesized that women are likely to face variety of mental pressures faced by them due to infertility thus an open-ended question was used to inquire about the same. The responses to open-ended questions were transcribed and coded by employing categorical strategy. This involves breaking down the narrative data and rearranging it to produce categories [Teddlie and Tashkori (2009)]. The codes/categories obtained through content analysis are then quantified by employing simple frequency counts.

Nature of Mental Pressures Faced by Women Due to Infertility

Analysis of responses showed that '*inquires made by other people regarding women's infertility*' and '*tendency of people to give different kinds of advice*' were the most commonly experienced mental pressures as reported by (19%) of women. Feelings of loneliness were reported by 9% of women. Other commonly reported pressures were quarrelsome and abusive husband and in-laws (9%) and fear of husband's second marriage (8.5%). Feelings of insecurity and criticism by relatives were reported by (3.5%) of women in this sample and almost similar percentage of women (4%) reported that they feel fed up trying different treatments for infertility.

4. DISCUSSION

The percentage of population affected by infertility is on rise; reaching up to 9% to 30% in low income countries [Petraglia, *et al.* (2013)]. Various health and lifestyle factors are responsible for infertility in couples [Homan, *et al.* (2007)]. The results of the present study showed that a large segment of women (82%) in this study sample who were seeking treatments for primary infertility were experiencing general psychological distress as assessed by General Health Questionnaire (GHQ) consistent with existing evidence [Minucci (2013)]. The involuntary childlessness has been found to be significantly associated with distress in women [McQuillan, *et al.* (2003)].

The study also examined role of social, psychological and cultural factors in Pakistani society which are associated with psychological distress among women seeking treatments for infertility. Women distressed by infertility status in Pakistan often seek variety of traditional and non-traditional treatments which sometimes even complicate their existing reproductive health conditions as well as act as a source of mental distress for them [Sami and Ali (2006)]. Identification of specific social and cultural factors associated with psychological distress in infertile women will help in educating professionals as well as family members in order to address these issues; thus, enhancing the quality of life for these women and improving treatment outcomes in many cases. This is in line with the recommendations made by researchers from other parts of world [Ombelet, *et al.* (2008)].

Findings from present study revealed that low levels of marital satisfaction, non-occupational status and woman's own strong desire to have children were significant predictors of psychological distress. The pattern of findings is not an unexpected pattern of findings, keeping in view the social structure of our society and findings from other studies. Edelmann and Laffont (1997) reported that infertility has a negative impact on sexual and marital satisfaction of women. Some recent cross-sectional studies from metropolitan cities of Pakistan [Sami and Ali (2006); Sultan (2010)] reported that marital discord was more likely to be experienced by infertile women and act as a major source of psychological distress in these women.

Infertile women who are primarily living as housewives are likely to experience low levels of marital satisfactions and high personal desire for children due to role expectations and stigmas associated with infertility. Previous studies [Minucci (2013); McQuillan, *et al.* (2003)] also reported some of the social and psychological implications related to infertility which include loss of identity, low self-esteem, feelings of isolation and inadequacy. These escalate the woman's desire to have a child and increases the levels of distress. The mental pressures reported by women in this study also confirmed that infertility brings considerable sufferings to the lives of these women. These women feel more stressed when they have to face questions and blamed for infertility. They also face domestic abuse and threats of husband's second marriage. All these social factors add to their own subjective feelings of distress related to infertility. A study from Sri-Lanka

reported that psychological distress among Sri Lankan infertile women was found to be associated with their desire and importance of having children, the educational status of women, recent treatment experiences and lack of marital support or communication [Lansakara, *et al.* (2011)].

Marital satisfaction which is an important determinant of psychological distress among women in this study itself found to be predicted by other factors such as social support and personal desire to have children. In the past few years, the role of social support in dealing with life stressors has been increasingly emphasized [Martins, *et al.* (2011)]. Since the major stressor for infertile women in traditional societies are actually the societal pressures and stigmas associated with infertility, therefore, it was interesting to explore the nature of social support available to an infertile woman which is also meaningful to her in terms of decreasing her risk for psychological distress. About one fourth of participants reported that support is available to them from their own parents, siblings, friends and neighbours; even though, it did not decrease their vulnerability for psychological distress. However, support from mother-in-law and sister-in-law turned out to be a significant protective factor. This is in line with a longitudinal study which showed a relationship between unsupportive social interactions and low levels of psychological adjustment among women with fertility problems [Mindes, *et al.* (2003)]. Findings emphasize the significance of educational programs which not only address the physical but psychological, emotional and social aspects of infertility experiences.

Findings showed that employment status of women was negatively associated with psychological distress; thus emerged as strong protective factor. These results are also consistent with the literature in the late 1990s from advanced countries. For instance, [Sundby (1999)] reported that infertile women are motivated to fill the gap of childlessness in their lives. Their occupation motivates them to do something rather than just thinking about their infertility which decreases their vulnerability for psychological distress. Findings from a recent study [Lykeridou, *et al.* (2011)] concluded that factors such as low social class and maladaptive coping strategies might add risk to stress and anxiety in infertile women. Alhassan, *et al.* (2014) reported high levels of depression among infertile women in Ghana who were unemployed and had low or no formal education. While exploring health-related quality of life in Iranian infertile couples who were undergoing infertility treatments, researchers [Rashidi, *et al.* (2008)] also found that low socio-economic status is a significant risk factor for psychological distress in infertile couples. Another study found that among Indian women the impact of infertility is exacerbated due to associated stigma, socio-cultural meanings and external pressures from society. The study also identified similar patterns such as duration of marriage or infertility increases the distress. However, education and socio-economic status act as protective factors [Widge (2002)]. These evidences about role of socio-economic and occupational status also highlight the significance of considering these aspects while designing any intervention plan for such females around the globe especially in south Asian communities.

Overall the findings of study supported that specific social, psychological and cultural factors in Pakistani society play a key role in increasing women's vulnerability for psychological distress, in addition to socio-demographic factors such as disadvantageous occupational and socio-

economic status acting as universal risk factors for distress among females with primary infertility. The data for this study was collected from fertility centers which are providing relatively advanced infertility treatments in Pakistan. Such a high prevalence of psychological distress in this sample of women is alarming and requires attention from health-care professionals and policy makers.

This also indicates the need to create awareness in the society about increasing social support and social acceptance for women suffering from infertility. This further enhances the need to develop structured programmes which includes education and counselling of couples and immediate family members. Moreover, means of mass communication can be used to educate people and address the intolerance and negative attitudes shown by society at large for infertile women.

Implications for Practice and/or Policy

The positive role of psycho-social interventions in infertility treatments has been demonstrated from Western countries [Read, *et al.* (2014)]. Keeping in view the complex role of social, psychological and cultural factors, the study findings support the recommendations made by [Minucci (2013)], a need for multidisciplinary teams in infertility treatment centers comprising of a psychologist, a counsellor and a bioethicist who would cater to the specific needs of infertile couples and facilitate them in coping with infertility related stress. In Pakistan, it is even more important to understand and address these issues where a wide gap exists between social classes. Families from affording classes are ready to invest vast amounts of financial and emotional resources in the quest to have a child, whereas women from low socio-economic classes do not even have access to pre-natal and post-natal health care services. The problem of primary infertility and associated psychological distress is a universal phenomenon and findings provide insights about universal factors as well increased our understanding about role of specific social and cultural factors. Understanding the implications will guide to enhance cultural appropriateness of various interventions/treatment programs.

Limitations of Study

A comparative group would have strengthened the research design of study to gain more conclusive evidence. Cross-sectional research with only one group of infertile women provides only a glimpse of the situation. Data was collected only from infertility clinics of two cities thus it does not tell us about infertility related experiences of women unable to seek healthcare services or seeking non-medical treatments. Instead of open- ended questions, in-depth interviews could have provided deeper insight about distress related experiences of infertile women.

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