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Research Article

The Psychological and Sexual Impact of Infertility on Couples

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Abstract

Background: The study aims to identify the impact of infertility on the psychosexual wellbeing of the couples. This medical condition that have various reasons, can heavily affect men and women's life. It is considered as one of the twenty first century problems.

Methodology: A cross-sectional study was conducted with 153 participants who filled a self-administered questionnaire about socio-demographic status, anxiety, depression and overall sexual satisfaction.

Results: The majority of the participants had a university degree 89 (62.2%) and were employees 96 (64.5%). The mean age was 35.74 ± 7.05 years. One hundred twenty four (80.5%), did not have children. Infertility duration was 4.26±2.69 years. It was attributed to men 38 (31.3%), women 40 (29.7%), or both of them 42 (32.8%). The mean number of previous treatment attempts was 2.18±2.15 as reported by 82 (75.9%) participants. The participants had mild anxiety GAD-7 and moderate to severe depression as measured by GAD-7 and PHQ-9 respectively. The BDI-21 score was 7.43+5.20, which is considered to be within the 'minimal' range of depression. Sexual satisfaction was reported as high for 85 (78.7%) of the participants. Age and infertility duration were significant predictors of anxiety, while social support was a protective factor. Age, number of children alive, and infertility duration were associated with the PHQ-9 and age and desire to have children were associated with BDI-21.

Conclusion: The psychosexual burden of infertility should be managed using a holistic approach to prevent the potential negative impact of this problem on the mental and sexual wellbeing of the couples.

Key words: infertility; anxiety; depression; sexual satisfaction; couples

Introduction

Infertility is defined as the inability of couples to conceive in twelve months while having regular unprotected intercourse (Dooley, Dineen, Sarma, & Nolan, 2014; Lykeridou et al., 2011). Its prevalence is 15% globally. Failing to conceive is seen as a developmental crisis that has significant impact on men and women's emotional, psychological, financial and sexual wellbeing (Andrews, Abbey and Halman, 1992; Kushwaha, Sinha, Gupta, & Srivastava, 2018; Lykeridou et al., 2011; Monga, Alexandrescu, Katz, Stein, & Ganiats, 2004; Sexton, Byrd, O'Donohue, & Jacobs, 2010; Vizheh, Pakgohar, Rouhi, & Veisy, 2015). The psychological and sexual impact of infertility on couples varies with circumstances such as the cause of infertility, the duration of treatment, the psychosocial status of the couples, age and gender (Chiaffarino et al., 2011; Lakatos, Szigeti, Ujma, Sexty, & Balog, 2017). A study conducted in Saudi Arabia reported that depression and anxiety was present close to 22% of couples (Alosaimi, Altuwirqi, Bukhari, Abotalib, & BinSaleh, 2015). A cross-sectional study showed in Italy noted that women are more vulnerable to anxiety and depressive symptoms, 14.7% and 17.9% respectively than men, 4.5% and 6.9% (Chiaffarino et al., 2011). The stress of medical treatments and a prior history of depression can put women at high risk of depression (Pasch et al., 2012; Vahratian, Smith, Dorman, & Flynn 2011; Verhaak et al., 2007; Volgsten, Skoog Svanberg, Ekselius, Lundkvist, & Sundström Poromaa, 2008). Yet, men's reaction varies based on the cause of infertility. Men may not report being in distress when women are infertile, whereas they experience similar distress and low self-esteem as women when they are diagnosed with infertility (Schaller, Griesinger, & Banz-Jansen, 2016). It might be that infertility is potentially humiliating and emasculating to men, has a profound adverse impact on masculinity and is more stigmatizing for men than it is for women (Dudgeon and Inhorn, 2003). A study in China with 771 infertile

men found the prevalence of depression, anxiety, and a combination of both psychological symptoms at 20.8%, 7.8%, and 15.4%, respectively with higher depression in men who have been infertile for over two years (Yang et al., 2017). Women and men who were younger, anxious, living in high income countries and had a temporary job were at high risk of depression and anxiety disorders (Galhardo, Cunha, and Pinto-Gouveia, 2011; Martins, Peterson, Almeida, Mesquita-Guimaraes, & Costa, 2014; Moura-Ramos, Gameiro, Canavarro, Soares, & Santos, 2012; Peterson, Sejbaek, Pirritano, & Schmidt, 2014; Verhaak et al., 2010). Studies have also found that infertile couples report low sexual satisfaction. The review of published studies report the negative impact of infertility and its related treatment on sexual function and relations of the couples (Tao, Coates, & Maycock, 2011). Infertility alters sexual satisfaction, confidence in sexual relations and sexual desire and orgasm (Cousineau and Domar, 2007; Cwikel, Gidron and Sheiner, 2004; Damti, Sarid, , Sheiner, Zilberstein, & Cwikel, 2008). Both men and women reported low sexual satisfaction and relationship instability that were associated with male infertility and duration of 3–6 years of infertility (Drosdzol and Skrzypulec, 2009). Infertile women were more vulnerable to low self-esteem (Drosdzol and Skrzypulec, 2009).

While most studies have found that infertility can lead to depression, anxiety and sexual problems, others have not found this to be true and have attributed it to the meaning and importance that individuals' attribute to parenting and having children in one's life (Güleç, Hassa, Yalçın, & Yenilmez, 2011: Repokari et al., 2007; Yang et al., 2017;). Cultural perceptions of parenthood, role identity, and religious influences can affect the level of psychosocial and sexual strain associated with infertility. In the Arab world, family unity and parenting continue to be a core value that is held in high esteem. Often women are held responsible for infertility and bear the social costs when conception does not occur. In addition, in Muslim communities, religious beliefs make infertility assessment and treatment particularly difficult for men because masturbation is proscribed (Inhorn and Fakih, 2006). Umeora and colleagues found that, of 138 female consultations for infertility, only 63% of patients' husbands were ultimately prepared to attend the clinic (Umeora, Ejikeme, Sunday-Adeoye, & Umeora, 2008). Most of them believed that they could not be responsible for infertility. Few studies were found on infertility in the Middle East. Providing data on psychological burden and its correlation with sexual satisfaction would initiate healthcare providers to develop a comprehensive infertility management program to help infertile couples. This study was conducted to provide further evidence on the topic and identify the scores of anxiety and depression among men and women undergoing infertility treatment as well as the degree of sexual satisfaction. It also examines the association between anxiety, depression, and sexual satisfaction.

Materials And Methods

A cross sectional design was used to answer the research questions. The target population for the study are couples undergoing infertility treatment in infertility centers at two university hospital and one non-university hospital residing in Beirut. These centers receive clientele from different areas of Lebanon which allowed recruitment of participants with varied backgrounds. All couples who met the inclusion and exclusion criteria and who accepted to participate by signing a consent form were asked to fill the questionnaire. This sampling method is cost-effective. A nurse working in the infertility center or a midwife were present to assist the couples in filling the questionnaire if needed. All Lebanese couples who visit the centers for infertility problems and who read and write in Arabic were included in the study. Infertile couples who have mental health problems and severe chronic illnesses such as epilepsy, COPD, diabetes and cardiovascular problems were excluded.

Recruitment Method

The recruitment took place in the infertility centers of the three targeted hospitals. In the first step of the study, we obtained the approval of the Institutional Review Board of the

University of Balamand (ORCT/O/008-2020) and the AUB (SBS-2018-0276). An informative letter was addressed to the medical director of the centers to have access to the patients.

Data Collection instruments

Three instruments and one demographic information questionnaire were used to collect data:

Anxiety and depression were measured by the GAD-7 and PHQ-9 scales respectively.

1) The Generalized Anxiety Disorder (GAD-7), a seven-item, self-administered, validated screening instrument that measures GAD over the last 2 weeks. It is based on DSM-IV criteria (Spitzer, Kroenke, Williams, & Löwe, 2006). It includes items about feeling nervous, not being able to stop worrying, worrying about different things, trouble relaxing, restless, irritable, and afraid that something awful might happen. Response options varied from 0 to 3 with a total score 0 - 21. A high score reflects high anxiety. This instrument has also been used in different countries including Lebanon. It has 89% sensitivity and 82% specificity, good internal consistency (Cronbach $\alpha = .92$) and test-retest reliability (intraclass correlation = 0.83) (Spitzer, et al., 2006). In this study, we used the validated Arabic version with a Cronbach's alpha 0.763 (AlHadi, et al, 2017).

2) The Patient Health Questionnaire (PHQ-9) which is one of the most widely used instruments to evaluate the presence and severity of depressive symptoms. It is a self-reported measure that consists of 9 items about cognitive, emotional, and somatic symptoms of depression and it can be linked to diagnosis from the DSM-IV (Spitzer, et al., 1999). It is calculated on a Likert scale from "0" (not at all) to "3" (nearly every day). The total score ranges from 0 to 27, with higher scores indicating more pronounced depressive symptoms. A validated Arabic version was used in this study with a Cronbach's alpha 0.857 (AlHadi, et al, 2017).

3) Sexual Satisfaction was assessed by one item about the overall sexual satisfaction on a scale from 1 to 10 with the highest score indicating the highest satisfaction and the lowest score indicating the highest dissatisfaction.

Background characteristics: The questionnaire included socio-demographic information such as age per year, occupation, educational level, length of marriage per year, desire to have children, yes/no, social support from family or friends, yes/no, infertility duration per year, and any previous treatments, yes/no.

Data Management and Analysis

The questionnaires were collected every other week and introduced in the SPSS Statistical Package for the Social Sciences version 27.0. Data cleaning was performed after all questionnaires were entered to check for duplicates, missing, or conflicting information. Any questionnaire missing less than 30% of the data means were computed. Descriptive statistics such as the means, standard deviations, numbers and frequencies were conducted for the demographic variables as well as the scores on anxiety and depression for males and females. Analyses of variance were used to assess the differences in anxiety, depression and sexual satisfaction between men and women. Bivariate correlations were calculated to examine associations between the study variables for both women and men followed by multiple regression to assess the best predictors of anxiety and depression in both men and women.

Results

The sample was composed mostly of women (63.4%). The mean age was 35.74 ± 7.05 years. The majority had a university degree 89 (62.2%) and were working as employees 96 (64.5%). The infertility problem was almost divided equally between men 38 (31.3%) and women 40 (29.7%), or both of them 42 (32.8%) with a duration of 4.26±2.69 years and many treatment attempts with no positive outcomes for the majority as 80.5% had no children. Sexual satisfaction was reported as high for 85 (78.7%) of the participants [refer to table 1].

In terms of the anxiety scores assessed on the GAD-7, the mean was 7.43±5.20, indicating mild to moderate anxiety. The mean of the patient health questionnaire, PHQ-9, was 15.09±10.98, which reflects moderately severe depression [refer to table 2].

The participants who received social support provided mainly by the partner had less anxiety than those who did not, $p < 0.001$. This association was not significant for depression. Although there was no significant association between sexual satisfaction, anxiety and depression, depressive symptoms were higher among participants who had low sexual satisfaction [refer to table 3].

There was a significant association between age and anxiety with participants older than 40 were more anxious, $p = 0.009$. The participants who received social support were less anxious than those who did not. Yet, this association was significant when the support was provided by the family, mainly the partner, $p = 0.001$. A significant association was found between the source of infertility and GAD, where the highest score was observed when infertility was related to the husband. $P = 0.030$. Couples who did not get any pregnancy, birth, and child had higher scores of anxiety than those who got although the association was not significant. Similar results were found when the duration of infertility was two years and with two treatment attempts or more.

There was a significant association between age and depression with participants older than 40 reporting more depressive symptoms, PHQ-9 $p = 0.008$. A significant association was found between the number of children and PHQ-9 with the highest result found among the participants who had no children, $p = 0.004$. The longer the duration of infertility was associated with higher depression scores, $p = 0.014$. The couples who reported higher desire of to have children had more depressive symptoms; yet the p-value was just 0.05 [Refer to table 4].

In the multiple regression, age was a significant predictor of anxiety in addition to the infertility duration. If infertility was due to one of the couples, the odds of anxiety increased by 6 times more than if the cause of infertility was unknown. Social support by any family member or friends was shown to decrease the odds of anxiety by three times more. The variables that predicted the PHQ-9 were age, number of children alive, and infertility duration. Older age increased the odds of depression by four times and number of children alive decreased the odds of depression by 1.3 times [Refer to table 5 & 6].

Discussion

This study explored the mental and sexual wellbeing of men and women undergoing infertility treatment. The majority of the couples of this study were childless despite many treatment attempts. The infertility problems were almost equally divided between men and women who reported mild to moderate anxiety and moderately severe depression. These results partly corroborate the results of previous studies but they may also reflect a coping mechanism of the participants. In Middle Eastern countries, having children is highly valued and couples who are childless may suffer high levels of anxiety and depression. Other studies also highlighted the negative impact of infertility on the mental wellbeing of the couples leading to mood disorders, anxiety and depression (Peterson, et al., 2014; Volgsten, et al., 2008).

An older age, more than 40, affected the mental health of the participants and was a source of anxiety and depression. This could be explained by the fact that with an older age, the chance to have children is less likely and then the participants are more prone to mental health problems. These results are consistent with the study of Zurlo and colleagues (2018) who reported higher anxiety and depression in female and male older patients. Although the scores of anxiety and depression were higher among women in comparison to men, with no significant association. This finding is contrary to previous studies have found that men and women may have different experiences (Anderson, Sharpe, Rattray, & Irvine, 2003; Klemetti, Raitanen, Sihvo, Saarni, & Koponen, 2010; Lechner, Bolman, & van Dalen, 2007). A study in German showed that infertile women had higher scores of depression and anxiety in comparison to men (Wischmann, Stammer, Scherg, Gerhard, & Verres, 2001). Similar results were found by the study of Zurlo and colleagues (2018). The results of this study may be explained by the fact that the cause of infertility was equally divided between men and women, making both of them feel responsible of this problem.

A significant association was found between anxiety and infertility related to the husband. We may infer that the perceived stigma and threat to masculinity posed by infertility explains this association. And since women in our culture are often viewed as responsible of infertility, they are less psychologically distressed when the infertility is related to their husband and not to themselves. Adding to that, when infertility relates to the woman, it justifies the right for the husband to marry on her. Previous treatments and the number of treatments attempts were not associated with psychological problems among women and men, which confirms the results of Volgsten and colleagues (2008), but contrary to the findings of Ogawa, Takamatsu, & Horiguchi, 2011). Present study revealed that a long duration of infertility with no children were associated with higher depression scores among men and women. Adding to that, participants who had a longer duration of marriage and longer duration of infertility with no children had higher means of anxiety and depression. Some studies found significant positive association between the duration of infertility and anxiety and depression (Zurlo, et al., 2018), other studies revealed that this variable did not appear to have an impact on the participants' mental health (Ogawa, et al., 2011; Volgsten, et al., 2008). Upkong and Orji (2006) reported that women who do not have children have more mental health problems mainly depression than those who have. Another study indicated that childless women had increased risks for dysthymia and anxiety disorders in comparison to those who had children and childless men had a significantly poorer quality of life compared to men without infertility (Klemetti, et al., 2010). Further research is necessary to identify other factors that may relate to the variations in anxiety and depression among men and women receiving infertility treatment. The participants who received social support had less anxiety than those who did not particularly when the support was provided by the partner which is confirmed by a study by Zurlo and colleagues (2018) where social support was associated with less mental health problems in women.

It is worth noting that the academic and work status, and the number of pregnancies and births did not interfere with the participants' mental health. In a previous study, Ogawa and colleagues (2011) found that unemployed women had a greater tendency to experience depression as they are often asked and urged to get pregnant. Another study reported that women's education is negatively associated with anxiety and depression (Ramezanzadeh, et al., 2004). Zurlo and colleagues (2018) found that higher education was associated with lower anxiety and depression in female patients. Sexual satisfaction was reported as high for the majority of the participants and no significant association was found between this variable and anxiety and depression. However, participants with low sexual satisfaction had the highest scores of depression and those with a high score of sexual satisfaction had the lowest score of anxiety. Men and women who have infertility problems are more likely to experience sexual problems (Gao, et al., 2013; Ho, Le, Truong, Nguyen, & Cao, 2020) as the psychological burden of infertility alters sexual function of the couples (Chi, Park, Sun, Kim, & Lee, 2016). This might relate to the pressure and forced

timing of sexual intercourse to coincide with women's fertile period (Monga et al., 2004). It is plausible that the findings of this study relate to the participants' denial of sexual dissatisfaction. Finally, the multiple regression analysis found that age, infertility duration, and infertility related to one of the couples were the three factors that predicted participants' anxiety. However, social support was a protective factor. On the other hand, the variables that predicted the PHQ-9 were age, number of children alive, and infertility duration. These factors warrant attention as the burden of infertility is highly overwhelming for the couples. A caring approach and psychological counselling and follow-up would help maintain couples' wellbeing.

Limitations

Our study had some limitations. Our intention was to recruit couples and compare between spouses. The majority of the husbands who presented to the infertility centers did not accept to respond to the questionnaire. We did not use a standardized instrument to measure sexual satisfaction to avoid cultural sensitivity. All participants were chosen for infertility problems; so it was not possible to identify the prevalence of infertility. However, one of the important strength of our study is that it is unique in Lebanon. Participants were recruited from different infertility centers and the tools selected to measure their mental status are reliable and widely used. This increases the representativity of the sample and the validity of findings. Adding to that, the association was examined between sexual satisfaction and mental health, providing more information that enriches the literature in view of the connectedness between infertility and psychosexual wellbeing of the couples.

Conclusion

The results of this study provided empirical evidence concerning the impact of infertility on the psychosexual wellbeing of men and women. This will pave the way to conduct more studies that are culturally sensitive and develop step-by-step interventions to support infertile couples. It is important to give more priority to the impact of infertility on the couples' wellbeing and not focus health professionals' efforts on the treatment modalities and techniques. Health care professionals can help the couples recognize their distress and assist them to cope with the infertility-related psychosexual discomfort. A psychosexual strategy that takes comprehensive approach to infertility management should be established in the infertility centers to deal with psychological and sexual issues that affect infertile couples. Further research that are population-based may be developed to enhance the body of knowledge and establish clinical guidelines that are evidence-based and culturally focused.

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Data are available upon request.

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