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**Abstract**

**Background**: The psychological and social impact of infertility on married couples alerted researchers in developing countries to consequences of infertility and the need to not underestimate the problem.

**Aim**: To examine the psychosocial wellbeing of infertile couples in Jordan.

**Methods**: A cross-sectional descriptive correlational study design was used to collect data regarding depression, psychological distress, life satisfaction, coping, optimism and perceived social support from 248 infertile couples using a self-administered questionnaire. Data were collected from May to August 2016.

**Results**: One hundred and sixty-four (66%) of the infertile couples had moderate to severe depression. Infertile couples had a high level of psychological distress, low level of life satisfaction, and yet a high level of optimism that the infertility is temporary. Participants had moderate ability to cope, moderate to high level of perception of social support from family and others, and low from friends. There were significant differences in depression and optimism between men and women (P

**Conclusion**: Jordanian infertile couples face several psychosocial problems that need psychological counselling.

Keywords: Infertility, psychological well-being, life satisfaction, life course, social support, optimism

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## Introduction

Infertility is a life crisis with a wide range of sociocultural, emotional, physical and financial problems (1). Adamson et al. (2) found that infertility affected ~80 million childless couples worldwide. In 2003 the World Health Organization reported that approximately 1 in 10 couples have either primary or secondary infertility (3). Infertility is a condition in which pregnancy has not occurred after 1 year of unprotected, well-timed intercourse (4). Infertility is a reproductive health indicator (5). Previous studies have shown that most cases of infertility and childlessness are associated with serious life disturbances and psychosocial problems such as low self-esteem, anxiety, and depression (6–8). Although childless couples may function normally in their everyday lives, they still have feelings of isolation and loneliness (9).

Infertility triggers loss of feelings of motherhood and fatherhood, and a sense of loss of productivity and genetic continuity (10). In certain cultures, childless women are seen as incomplete and they are blamed for infertility (11). Thus, infertility may compromise mental and psychological wellbeing of infertile couples, with a negative impact on their psychological wellbeing and ability to function normally as a family (12).

In Jordan, infertility is addressed more as a social and female issue rather than as a medical issue. In other words, infertility is seen as a female rather than male problem and women are blamed for it. However, if the diagnosis of infertility is due to male factors, marital conflict can increase and couples become more isolated. Psychologically, women lose their womanhood and sense of gender identity when they cannot conceive, and men are not considered “to be a man” if they do not have a child (13). This magnifies the psychological distress of being childless, and leads to further psychological and social problems. Marriage in Jordan is strongly linked to procreation and family formation. Adoption is prohibited in Jordan leaving infertile couples with fewer options and causing further psychological problems such as depression and psychological distress. Therefore, the purposes of this study were: (1) to investigate the psychological and social wellbeing of infertile couples in Jordan, including depression, psychological distress, life satisfaction, coping, optimism, and perceived social support; and (2) to establish if any differences in psychological and social wellbeing were related to sociodemographic characteristics.

## Methods

### Design

A quantitative approach using a cross-sectional, descriptive correlational design was used to examine the psychosocial wellbeing of infertile couples in Jordan. Data were collected from couples diagnosed with infertility from one governmental and four in vitro fertilization (IVF) clinics in private hospitals in Jordan.

### Study sample and setting

A convenience sampling technique was used to recruit infertile couples. A total of 400 surveys were distributed and 248 were returned, with a response rate of 62%. Inclusion criteria were: (1) diagnosed with infertility; and (2) ability to read and write in Arabic. The sole exclusion criterion was a history of chronic of diseases.

### Procedure

Prior to data collection, ethical approval was obtained from the School of Nursing, University of Jordan and targeted institutions. Data collection was undertaken during March to August 2014, using a self-reported format at the couples’ convenience. The researcher met with the head of the targeted IVF clinics that were volunteered to facilitate the data collection procedures and explained the data collection process. A questionnaire was administered to each participant individually in a private room designated for that purpose, in collaboration with the clinics during the couple’s visit to the clinic, and after completing all the required health investigations with their doctors.

One clinical instructor was hired to monitor the data collection procedure. Infertile couples who expressed interest in participation in the study were approached by the researcher who explained the study and answered all their questions. Couples were asked to sign the consent form that included information about the study. The participants were also informed that the information would be used for the study, that their participation was voluntary, they had the right to withdraw at any time during the study, and that withdrawal would not influence the quality of care that they received. All data were kept in a closed cabinet at the School of Nursing, University of Jordan. The whole package was presented in Arabic.

**Measurements**

Data were collected using an Arabic version of the scales and an author-developed profile. Tools were as follows.

Perceived social support was measured by the Multidimensional Scale of Perceived Social Support, Arabic version (14). This was a 12-item self-reported scale to assess the perception of social support adequacy from family, friends and significant others such as the healthcare team. Each item was measured using a 7-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). The scale had three subscales, family (items 3, 4, 8 and 11), friends (items 7, 6, 9 and 12), and significant others (items 1, 2, 5 and 10). The total score ranged from 12 to 84. Higher scores indicated a greater perception of social support. This scale had good internal consistency with Cronbach's α of 0.88.

Beck Depression Inventory-II (BDI-II), Arabic version (15) was used to assess depressive symptoms.. This instrument contained 21 questions answered on a 4-point Likert scale in which 0 represented absence of symptoms and 3 an extreme problem. The total ranged from 0 to 63 and standard cutoff points were as follows: 0–13 indicated no or minimal symptoms, 14–19 mild symptoms, 20–28 moderate symptoms and 29–63 severe symptoms. A score of 13 was the cutoff point indicating depression. The test–retest r value was 0.88, and Cronbach's α was 0.87. In this study, Cronbach's α was 0.85.

Stress was measured using the brief form of Psychological Stress Measure (PSM). The original PSM was designed using 49 items drawn from descriptors generated by focus groups on stress. The scale was unifactorial in structure and maintained a test–retest stability of 0.68–0.80 under apparently constant conditions. Patients checked the answer that best indicated the degree to which each statement applied to them recently. The responses were made on a Likert scale and ranged from range from 1 (null) to 4 (much). The higher the score, the higher was the level of

psychological stress.

Coping skills were measured using the abbreviated version of the COPE inventory, Arabic version (16). COPE is a 28-item scale that measures the ways individuals use to cope with stress. The abbreviated COPE had 14 domains (each consisting of 2 items), with responses ranging from 1 (I have not been doing this at all) to 4 (I have been doing this a lot). The scale took > 10 minutes to be completed. The scale had good internal inconsistency with Cronbach's α of 0.83.

Optimism was measured using the Life Orientation Test (LOT-R), Arabic version (14). LOT-R was designed to measure optimism by assessing the generalized outcome expectancies of individuals. Each item was measured on a 5-point Likert scale. The responses ranged from strongly agree to strongly disagree. The scoring was done by reversing the negative statement and then adding all the responses together. Cronbach's α for the scale was 0.76 and test–retest was estimated at 0.79. In this study, Cronbach's α was 0.73.

Life satisfaction was measured using the Satisfaction with Life Scale, Arabic version (17). This was a general measure of life satisfaction, which consisted of five statements. Participants were asked to rate each statement according to the following 7-point scale: (1) strongly disagree, (2) disagree, (3) slightly disagree, (4) neither agree nor disagree, (5) slightly agree, (6) agree, and (7) strongly agree. The total scale ranged from 5 to 35 and was interpreted as follows: 31–35 (extremely satisfied), 26–30 (satisfied), 21–25 (slightly satisfied), 20 (neutral), 15–19 (slightly dissatisfied), 10–14 (dissatisfied) and 5–9 (extremely dissatisfied). The test–retest reliability was estimated to be 0.87.

## Results

### Descriptive characteristics

A total of 248 participants (145 women, 103 men) completed and returned the survey ( Table 1 ) . Most participants were aged 25–35 years of age and the majority were married. Most of the participants had a full- or part-time time job, some were not working, and a few of them were even retired. The level of education ranged from less than high school to graduate level (Masters and PhD).

### Marital and parental experience

Two hundred and six (83%) couples were married for ≤ 10 years and 15 (6.1%) of them for ≥ 16 years. Two hundred and thirty-four (94.3%) participants had one experience of marriage and 2

(0.8%) had > 3 marriages. Eighty (32.2%) of the couples had experienced a pregnancy and 195 (78.8%) had not. Most of the participants (n = 173; 69.8%) were married at age 20–30 years and only 8 (3.2%) at age ≥ 36 years. We found that 129 (52%) of the participants did not know about the causes of infertility. Among those that did know, 136 (54.8%) had known for 5 years and 112 (45.2%) for ≥10 years. Sixty-nine (27.8%) couples had male infertility, 48 (19.4%) had female infertility, 24 (19.4%) had both male and female infertility, and 107 (43.1%) did not know which type of infertility they had.

### Psychosocial health factors

We compared the psychosocial status of men and women in infertile couples ( Table 2 ). For depressive symptoms, the couples had a mean score of 31.8 [standard deviation (SD) 7.9], ranging from 21 to 58. One hundred and twenty-four (50%) of the couples had a score of ≥ 31, 62 (25%; 25th percentile) had a score of 26, and 62 (75th percentile) had a score of ≤ 37. Seventy-three (29.4%) of the participants had moderate depressive symptoms and 175 (70.6%) had severe depressive symptoms; however, none reported minimal or mild symptoms of depression.

The highest perception of perceived social support was from others and family with mean scores of 21.6 (5.8) and 21.2 (5.3), respectively. Perception of social support from friends was low, with a score of 18.0 (5.2).

For optimism, the participants had a mean score of 34.0 (6.3), ranging from 16 to 49. The possible range of scores was 5–50, and 124 (50%, 50th percentile) participants had a score of ≥ 34 and another 124 had a score of 30–39 (25th to 75th percentiles).

The participants had a mean score of 18.1 (4.6) for life satisfaction, with scores ranging from 8 to 28. The possible range of scores was 5–35, and 124 (50%, 50th percentile) participants had a score of ≥ 19 and another 124 had a score of 15–21 (25th to 75th percentiles).

The brief COPE scale showed that participants had a mean score of 63.3 (13.3) for coping skills, with scores ranging from 27 to 91. The possible range of scores was 28–112, and 124 (50%, 50th percentile) participants had a score of ≥ 64 and another 124 had a score of 53–72 (25th to 75th percentiles).

For psychological distress, the participants had a mean score of 37.5 (8.0), with scores ranging from 18.0 to 71.0. The possible range of scores was 9–72, and 124 (50%, 50th percentile) participants had a score of ≥ 37.0 and another 124 had a score of 33.0–41.0 (25th to 75th percentiles).

**Bivariate analysis**

To examine the correlation between psychosocial factors and demographic and parental characteristics of the infertile couples, we used a correlation matrix using Pearson r correlation coefficient ( Table 3 ). There was a significant negative correlation between depression and all other variables except stress (P **Differences related to personal and parental characteristics**

There were significant differences in depression and optimism between men and women (P Tab le 4
). The mean scores showed that men had lower depressive scores than women. However, women had lower mean scores of optimism and life satisfaction, although only the difference in optimism was significant.

Analysis of variance showed that there was a significant difference in social support from family between the participants related to their age, length of marriage, number of marriages, and period being infertile (P Table 5). Also there was a significant difference in social support from others related to age and period being infertile (P **Discussio n**

We found that infertile couples in Jordan have psychological and social problems. In particular, they had alarming rates of moderate to severe depression that merit clinical evaluation and follow-up. This finding is consistent with previous reports (10,18,19) that depression is common among infertile couples. Depression might result from social stigmatization (20), feeling of worthlessness, loss of parental role and low self-esteem (12). Furthermore, parents who lose their sense of parenthood do not seek to disclose that to their closest friends and relatives (20), which may also contribute to feelings of worthlessness and isolation.

Nevertheless, we found that infertile couples had moderate perception of social support from their families and others, while low from friends which contrasts with the literature that cites isolation and lack of support as reasons for depression among infertile couples (21). However, our results could be explained in terms of cultural issues among Arabs. Arabs monitor closely pregnancy in their new married children. Thus, families and friends are considered sources of

knowledge for newly married people, and they could deliver positive messages to the couple if they appear to be infertile. As mentioned previously, women in Arabian culture are always blamed for infertility, thus, families are concerned about their children's pregnancies, to avoid future problems that may result in separation or divorce. This supports our finding that perceived social support from others was the highest, while that from friends and families was low, as couples may not discuss such issues with their friends and families to avoid social blame and prejudice. The need for support and assistance is consistently among the main demands of infertile couples (21). Evidence has shown that positive social interactions have a significant effect on infertile couples to decrease the negative impacts of stress (18,22).

In this study, infertile couples had moderate perceived social support from family and others, while low from friends. Their perception of low social support from friends, in particular, could be related to their decision to manage their infertility away from passionate feeling from other people especially friends, while keeping their connection with family and others (such as health professionals), which indicates higher level of support. Social support has been conceptualized as a "social fund" from which individuals can draw when they are experiencing crises that contributes to their level of psychological well-being and feeling distressed or depressed (23)

Our study revealed that infertile couples had a high level of optimism. Higher levels of optimism have been related to better subjective well-being in times of adversity or difficulty among married couples (24). The most important factors related to psychological distress among infertile couples were perceived personal control, optimism, and motivation to have a child. Other studies have shown that optimism is associated with better quality of social relationships and effective problem solving skills (25,26).

We found that infertile couples showed a low level of life satisfaction, which is consistent with previous studies (27,28). Several studies have indicated that infertility has a negative impact on well-being and life satisfaction (7,29). This causes major disruption to most women's lives. However, in developing countries like Jordan, bearing and rearing children are central to women's status and well-being, and stigma related to infertility may have a negative influence on life satisfaction (30,31).

Our study showed that infertile couples had low to moderate ability to cope with life situations. Coping with infertility is highly valued in most cultures and the desire for a child is one of the most basic of all human motivations (30,31). Cultural attitudes towards infertility had an effect on coping for infertile couples (21,32). Women coping with infertility may be at risk of self-depreciation and isolation because of their choice of coping strategies and the meaning they ascribe to infertility. Women usually suffer more distress than men who are infertile.

Another problem with coping for infertile couples is the severe strain on their emotional, social and financial resources. Thus, they are likely to search for appropriate coping strategies at some point during the experience (28,30).

We found that there was a significant negative correlation between depression and all other variables except stress, which was correlated positively with coping and negatively depression. Also, higher scores of perceived social support from others were found among older couples and those who had longer periods of diagnosis of infertility, while those who had more that one marriage (polygamy) had less perceived social support from friends. The study also found higher depression and lower optimism scores among couples with longer periods of diagnosis. There were significant differences in social support from family in relation to age, length of marriage, number of marriages, and period being infertile. Psychological stress correlated positively with coping and negatively depression (12).

We propose that although cultural differences exist between Jordan and other countries, the Jordanian couples' response to infertility was similar to that of couples elsewhere. They experienced psychological distress, depression and low life satisfaction. The major difference is that adoption and artificial reproductive technology are still prohibited in Jordan. (10,12).

### Clinical implication

Our study found that infertile couples in Jordan experience psychological disturbances that interfere with their life functioning. The study has implications for health professionals in community and primary care settings. We found that assessment and maintenance of psychological well-being are as important as physical health among infertile couples. Primary care providers need to recognize the impact of infertility and childlessness and their association with psychological and social disturbances. The study verifies that infertile couples are in need of psychosocial support and counselling interventions; thus, establishment of psychological counselling programmes is a priority for healthcare agencies.

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**Competing interests**: None declared.

## Bien-être psychologique des couples stériles en Jordanie

### Résumé

**Contexte** : La dimension psychologique et sociale de la stérilité pour les couples mariés a attiré l'attention des chercheurs dans les pays en développement sur les conséquences de ce problème ainsi que sur la nécessité de ne pas le sous-estimer.

**Objectif** : Examiner le bien-être psychologique des couples stériles en Jordanie

**Méthodes** : Une étude suivant un plan corrélationnel, descriptif et transversal a été menée afin de recueillir des données liées à la dépression, au désespoir psychologique, à la satisfaction dans la vie, à l'aptitude à faire face aux problèmes, à l'optimisme et à la sensation de bénéficier d'un soutien social. POur ce faire, un questionnaire auto-administré a été rempli par 248 couples stériles. Les données ont été recueillies entre mai et août 2016.

**Résultats** : Cent soixante-quatre couples stériles (soit 66 %) souffraient de dépression allant d'un stade modéré à sévère. Les couples stériles affichaient un degré élevé de désespoir psychologique, un faible degré de satisfaction dans la vie, et pourtant un niveau élevé d'optimisme quant au caractère temporaire de cette stérilité. Les participants montraient une aptitude modérée à faire face aux problèmes, une perception du soutien social venant de la famille et autres proches allant de modérée à élevée, et faible venant de la part des amis. Des différences significatives entre les hommes et les femmes ont été observées pour ce qui concerne la dépression et l'optimisme (p