

REVIEW ARTICLE

Psychological Distress and Quality of Life Among Childless Couples Undergoing Infertility Treatment: A Narrative Review

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ABSTRACT

Childless couples who are struggling to conceive face the risk of mental health issues, due to increased psychological distress in the form of stress, anxiety, and depression. This would adversely impact their quality of life in terms of mind-body (physical, psychological, and behavioural), emotional (tension, frustration, anger, and guilt), sociological (stigmatization, self-isolation, and social withdrawal) and relational (marital and sexual relationship) aspects. The aim of this review is to learn more about psychological distress and the quality of life among childless couples undergoing infertility treatment. The literature search was conducted using SCOPUS, EBSCOHOST, ProQuest, Ovid, and Science Direct databases for the period from 2016 to 2022, with a total of 6,001 articles retrieved. However, only six articles fulfilled the inclusion criteria applied in this review. The search was limited to studies published in the English language with cross-sectional study design only. The following medical subject heading terms were used: infertility, childless couple, psychological distress, and quality of life, with ("AND," and "OR,") used to narrow and widen the search. Overall, the findings show that childless couples do experience psychological distress in the form of depression, stress, anxiety, stigmatisation, low self-esteem, and social isolation; they also face psychosocial problems and thus their quality of life are impacted. Further research should focus on psychosocial aspects, such as developing effective care programs that can contribute towards the effective management of psychological and social issues faced by couples struggling with infertility.

Malaysian Journal of Medicine and Health Sciences (2022) 18(SUPP15): 396-401. doi:10.47836/mjmhs18.s15.52

Keywords: Infertility, Treatment, Childless couple, Psychological, Quality of life

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INTRODUCTION

Infertility is defined as the inability to conceive after twelve months or more of unprotected sexual activity (1). Infertility is known as a disease of the reproductive system and considered to be a global public health problem (1), affecting 48 million couples and 186 million people worldwide (2,3,4). It can be seen as a major life crisis and also impacts marital life. Infertile couples who are eager to have biological children experience psychosocial problems that would affect their quality of life (5,6,7). The psychosocial impact of infertility includes feelings of sadness, loneliness, and frustration, which often leads to social deprivation. In addition, loss of self-esteem, social dysfunction, self-devaluation, and social withdrawal are often experienced by childless couples, leading to decreased work productivity and causing severe disturbance of life (8, 9).

Infertile couples who are struggling to conceive face the risk of mental health issues, due to increased probability of experiencing psychological distress in the form of stress, anxiety, and depression (8). Psychological torture, verbal abuse, ridicule, physical abuse and deprivation have also been associated with infertility in women. Couples struggling with infertility experience psychological distress and this impacts their quality of life in various ways, including mind-body, emotional, sociological, and relational aspects of life (9). Previous studies have found a possible connection between the inability to give birth to a child and the risk of suicide and divorce (10, 11). Meanwhile, infertility treatment in itself is a physically, psychologically, and socially exhausting process which causes a high level of distress. Factors associated with the psychological impact of infertility among childless couples are multifaceted and may change over time as adaptation might occur at a particular point along their journey. Thus, this review aims to explore the experiences of childless couples in facing psychological distress and assess how their quality of life are impacted. This review also discusses the effect of infertility on childless couples in terms of

the physical, psychological, and behavioural aspects of their lives.

METHODS

A literature search was conducted using the PRISMA 2009 flow diagram. The studies were identified using SCOPUS and EBSCOHOST, with a total of 6,001 articles retrieved. An additional 41 studies were identified using the Pro-Quest, Ovid, and Science Direct databases. The search was limited to studies published in the English language. The following medical subject heading terms were used: infertility, treatment, childless couple, psychological distress, and quality of life. To increase the number of hits using the databases, the researcher used the “related article” function. In order to find the relevant articles, “AND,” and “OR,” were used to narrow the search. The search initially identified 458 articles, after which 62 articles were removed due to being duplicates. A total of 323 abstracts were excluded due to being systematic review articles, review articles, meta-analyses articles, meta-synthesis articles, book series, chapters in books, conference proceedings, or due to being non-English and not meeting the criteria of the research question. After the screening process was completed, only 396 full-text articles can be assessed for eligibility, and out of this number, only six studies were included in the quantitative synthesis. The flow diagram shown in Figure 1 is an overview of the article selection process.

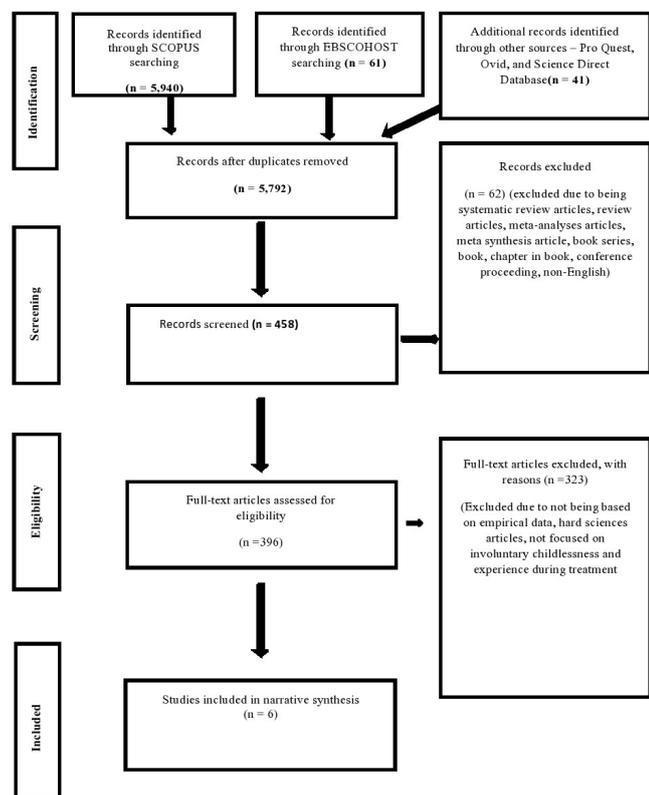


Figure 1: Overview of the article selection process

RESULTS

Finally, a total of six articles of quantitative study, published between 2016 and 2022, were found to meet all the inclusion criteria, and they were assessed throughout this review. The identified findings of all the studies are summarized in Table I.

Overall, five out of the six articles involved women participants only, with the sole remaining article involving childless couples. These studies were conducted in China, Iran, India, and Malaysia. Data were collected from around 2014 until 2020. The largest number of participants was a total of 1,062 participants while the smallest number was a total of 146 participants. Four of these articles used the Fertility Quality of Life (FertiQoL) questionnaire, one article used World Health Organization Quality of Life (WHOQOL-BREF) and one article used Quality of Life (QOL) as the instrument to investigate the quality of life among participants (12, 13, 14). These articles also used State-trait anxiety inventory (STAI), Depression, Anxiety, Stress Scale- 21 items (DASS-21), Hospital Anxiety and Depression Scale (HADS), Hamilton’s Rating Scale (HAM-A), Sinha’s Comprehensive Anxiety Test (SCAT), Hamilton’s Rating Scale (HAM-D), Amritsar Depressive Inventory (ADI), and Presumptive Stressful Life Events Scale (PSLES) to measure the levels of anxiety, stress, and depression (15, 16, 17, 18, 19, 20, 21, 22). A majority of the articles involved cross-sectional studies, where the authors highlighted the association between quality of life and psychological distress (stress, anxiety, and depression) among individuals and couples suffering from infertility. In a cross-sectional study by Maroufizadeh, Ghaheri and Samani (2016), a total of 155 women with infertility responded to self-administered questionnaires; FertiQoL and HADS used multiple linear regression analysis to explore the association between quality of life, anxiety, and depression (23). The quality of life (QoL) score was 62.57, with a standard deviation of 16.89. According to the findings of a multivariate analysis, both anxiety ($\beta = -1.59, p < 0.001$) and depression ($\beta = -2.09, p < 0.001$) had a detrimental effect on quality of life. According to the findings of this study, the level of depression and anxiety experienced by infertile women undergoing IVF can have a negative effect on their quality of life. A study by Namdar, Naghizadeh, Zamani, Yaghmaei, and Sameni (2017) sought to determine the general health and QOL of infertile women and certain affecting conditions (24). Approximately 146 respondents completely filled out the general health (GHQ-28) and quality of life questionnaire. The t-test and ANOVA Pearson correlation were used as statistical tests. The scores obtained for depression were the highest. The overall quality of life scores had the highest link with GHQ anxiety ($r = 0.596, p < 0.001$). This study also demonstrated that a woman’s inability to conceive a child can cause psychological distress and negatively impact her quality of life.

Table 1: Association between psychological distress and quality of life

Author, Year	Sample/ Tools/ Statistical Test	Main Findings	Comment (s)
Maroufzadeh, et al., 2016 (23)	N = 155 women Tools = FertiQoL, HADS Statistical test = Multiple linear regression	The mean total QoL score was 62.57 ± 16.89 . Multivariate analysis showed that anxiety ($\beta = -1.59, p < 0.001$) and depression ($\beta = -2.09, p < 0.001$) had a negative impact on QoL.	<ul style="list-style-type: none"> - Only the infertile women undergoing IVF were included - Small sample size - Cross-sectional design of the study
Namdar et al., 2017 (24)	N = 146 women Tools = GHQ28QOL Statistical test = t-test and ANOVA Pearson correlation	The total QOL scores had maximum correlation with GHQ anxiety ($r = -0.596, p < 0.001$)	<ul style="list-style-type: none"> - Need case control study - Larger sample size - Different region
Bakhtiyar et al., 2019 (25)	N = 180 infertile women & 540 fertile women Tools = WHOQOL-BREF Statistical test = General linear regression	The results of the multivariate modeling show that infertility can potentially affect various aspects of women quality of life such as mental health ($p < 0.001$) significantly.	<ul style="list-style-type: none"> - Need longitudinal study
Ibrahim et al., 2020 (26)	N= 100 infertility couples Tools = DASS-21, FertiQoL Statistical test = Multiple Linear Regression	The female gender (wives) was the only significant variable associated with the severity of all three DASS-21 sub-scale scores ($p < 0.001$) and considered as a high-risk factor for psychological distress.	<ul style="list-style-type: none"> - Cross sectional study design - Small sample size - Only two questionnaires used - Several confounding variables which are not controlled due to time limitation & lack of human resources
Prasad et al., 2021 (27)	N=186 infertile women Tools = HAM-A, SCAT, HAM-D, ADI, PSLES, FertiQoL Statistical test = t-test and chi square	FertiQoL scores suggest that infertility treatment in itself is stressful, and nearly 80% of women reported increased levels of general life stresses.	<ul style="list-style-type: none"> - Focus on infertile woman
Song et al., 2021 (28)	N = 1062 women Tools = FPI, FertiQoL, STAI Statistical test = Multiple Linear Regression	Trait anxiety predictor of fertility quality of life ($p < 0.001$).	<ul style="list-style-type: none"> - Cross-sectional study - Only women as participants - Large sample size

A study by Bakhtiyar et al. (2019) investigated the impact of infertility on a woman's quality of life (25). A total of 180 infertile women and 540 fertile women participated in this study. According to the findings of the multivariate modelling, infertility can potentially have a considerable impact on numerous elements of women's quality of life, including their mental health ($p < 0.001$). Infertile women often struggle with their mental health, which would clearly have a negative impact on their quality of life.

In Malaysia, a study by Ibrahim, Mohamed, Ismail, and Salleh (2020) revealed that depression, anxiety, and stress-related difficulties were reported at a higher level by wives ($p < 0.001$) (26). Hundreds of infertile couples were involved in this study. The severity of depression, anxiety, and stress was measured using the Depression, Anxiety and Stress Scale (DASS-21) and QoL was assessed using the Fertility Quality of Life (FertiQoL) questionnaire. Total FertiQoL scores were found to be significantly higher in husbands ($p < 0.001$). Wives were the only significant variable linked with the severity of all three DASS-21 sub-scale scores ($p < 0.001$) and were designated a high-risk factor for psychological distress. Poor quality of life was found to be substantially connected with wives ($p < 0.001$), male causes of infertility ($p = 0.004$), primary infertility ($p = 0.022$), and prior intrauterine insemination (IUI) treatment ($p = 0.020$). Quality of life was negatively impacted by the severity of stress, anxiety, and depression.

A study by Prasad, Kumar, Nayar, Prasad and Sharma (2021) in India involved approximately 186 infertile

women (27). This study was conducted to assess the psychological impact and the mental health of infertile women undergoing IVF treatment at a public sector assisted reproduction clinic in India. This study used Hamilton's Rating Scale and Sinha's Comprehensive Anxiety Test and Amritsar Depressive Inventory as tools. This study also used t-test and chi-square for statistical test. Clinically, significant depression was identified in 60.11–64.86% of the women. However, relatively lesser frequency of anxiety (27–37%) was observed. FertiQoL scores suggest that infertility treatment in itself is stressful, and nearly 80% of women reported increased levels of general life stresses. Being infertile appears to have a profound detrimental psychological impact on the lives of women. Women undergoing treatment experience significantly high levels of psychological stress, anxiety and depression, along with a lowered quality of life.

A study by Song et al. (2021) sought to investigate the status quo in terms of the quality of life of women undergoing frozen embryo transfer, and to analyze its predictors (28). Approximately 1,062 women completed the survey. Participants reported experiencing a lot of stress and anxiety linked to their reproductive treatments. FertiQoL's rating is found to be below average. In this study, trait anxiety was a significant ($p < 0.001$) predictor of fertility quality of life.

DISCUSSION

The number of published studies related to the experience of infertile individuals or couples in terms of psychological distress and quality of life are limited.

Several limitations in the strategies and methodologies adopted in these studies have also been identified. Only one quantitative study from Malaysia investigated psychological problems relating to quality of life such as stress, anxiety, and depression among infertile couples (26). It was also noted that the overall sample composition in the studies we reviewed was imbalanced, with the experience of female respondents outweighing the experience of couples. Males or couples also experience psychological distress that affect their quality of life. The studies were mostly limited to one hospital for data collection; thus, the results cannot be generalized to all infertile individuals or couples in the general population. A study by Maroufizadeh, Ghaheri, and Samani (2016) revealed that anxiety and depression, the unknown cause of infertility, and previous treatment attempts can potentially impair the overall QoL in infertile women (23). These results indicate that women who have previously experienced failures might suffer from lower QoL and need to be supported by their family, friends and society, where psychosocial intervention and support may be essential to improve the QoL in these women. However, this study has several limitations. First, for practical reasons, only infertile women undergoing IVF were included. Second, the sample size was insufficient, which may have resulted in insufficient power to detect significant effects for certain demographic and clinical characteristics. Due to the cross-sectional nature of this study, causal inferences cannot be made.

In a study by Namdar, Naghizadeh, Zamani, Yaghmaei, and Sameni, (2017), the general health of more than half of the infertile women indicated a degree of disorder (24). These women face the risk of anxiety, social dysfunction, and depression. Educational status, monthly income, and rural/urban residency are found to be major factors influencing the QOL. To better understand such effects, performing case-control studies with larger sample sizes in different regions is highly recommended. In addition, the psychological distress and QOL of the infertile Iranian women, as detected in this study, seemed to require psychological intervention.

A study by Bakhtiyar et al. (2019) found that an infertile woman would achieve relatively lower scores in QOL sub-scales of mental, physical, and environmental health, although they would achieve a higher social health score than a fertile woman (25). This study's limitation is that it is a non-longitudinal case-control study, making it challenging to adjust to some confounding factors. For future research on this connection, prospective longitudinal studies are advised. This study also suggested that although the social health subscale may not be negatively impacted, the quality of life for infertile women may suffer in terms of her mental, physical, and environmental health. Quality of life is also influenced by other modalities, including educational attainment, employment, home ownership, and serious illnesses. A study by Ibrahim, Mohamed, Ismail, and Salleh (2020)

found that the severity of the anxiety, depression, and stress adversely affected the QoL (26). This research has a number of limitations, including cross-sectional study design, a small sample size, the use of just two questionnaires, and a number of confounding variables that were not controlled due to time constraint and lack of human resources.

Prasad et al. (2021) found that being infertile has a profound and detrimental psychological impact on a woman's life (27). Women undergoing infertility treatment experience significantly high levels of psychological stress, depression, and anxiety, along with a lowered quality of life. This study assessed the psychological impact and mental health of infertile women undergoing IVF therapy at an assisted reproduction clinic in India's public sector. Infertility has a very negative psychological impact on the lives of women. The elevated levels of stress increase the likelihood of these women falling sick or being unwell. It is necessary to identify the women who require psychosocial assistance in addition to standard ART treatment. Women undergoing assisted reproduction are more likely to have a successful pregnancy if they receive counselling based on their educational background. The optimistic outlook in the marital partnership can also salvage compliance with treatment cycles. As discovered by Song et al. (2021), potential predictors of quality of life include social concern, trait anxiety, duration of treatment, and age (28). The limitations of these studies are that they are cross-sectional studies and the participants consisted of only women.

RECOMMENDATIONS

The studies in this review found that infertile individuals or couples experience increased levels of stress, anxiety, and depression, and this adversely impacts their quality of life. Perceived social support from husband and wife, family, society, as well as the availability of financial and spiritual support can improve the quality of life of infertile couples. Providing psychological counselling based on a specific situation is critical to reduce the level of distress experienced. Thus, there is room for improvement in this field of study. Healthcare professionals, especially nurses, can suitably be assigned the task of giving specific consultations and support to childless couples. Additional studies (using a longitudinal study design) to track the impact of depression and distress over the infertility treatment cycle would be valuable in increasing our understanding of the complex relationship between these psychosocial factors. Future investigation should examine the role of infertility in mental health, to be confirmed with qualitative, experimental, and cross-cultural research. Future research also recommends examining the different experiences of men and women in dealing with infertility. This is because males coping with infertility can also be susceptible to developing psychological distress and having lower QoL.

CONCLUSION

This review concluded that psychological distress among childless couples can be better understood by further exploring the experiences of infertile couples. Most studies gave similar results in terms of psychological issues faced by infertile couples and their quality of life. This review is hopefully able to help the healthcare system to develop a care program for the effective management of psychological and social issues among infertile couples. It is suggested that future research give an in-depth focus on other aspects of their quality of life such as psychosocial aspect, economic status, and culture.

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