Al-Quds University

Deanship of Graduate Studies

The quality-of-life level of infertile Palestinian women & men in West Bank, Palestine: A cross-sectional study

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M.Sc. Thesis

Jerusalem- Palestine

1446 / 2024

The quality-of-life level of infertile Palestinian women & men in West Bank, Palestine: A cross-sectional study

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A thesis submitted in partial fulfillment of the requirements for the master's degree of Maternal Child Health Nursing/ Deanship of Graduate Studies- Al-Quds University

1446 / 2024

Al-Quds University

Deanship of Graduate Studies

Maternal Child Health Nursing

Thesis Approval

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Jerusalem-Palestine

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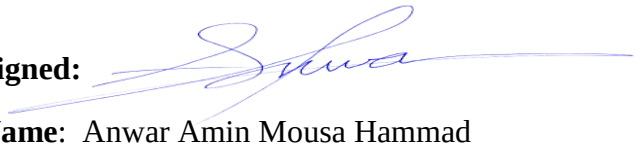
Dedication

I dedicate this achievement to the martyrs of freedom who fell victim to the brutal war in Palestine, especially in Gaza. Each of them had a story, a dream, and an ambition that went with them. I dedicate this to every Palestinian who remains steadfast in their land and homeland and strives towards science and development despite all circumstances.

This thesis is dedicated to my family, who support me and enhance me to achieve what I am now, I appreciate each one who hands with me toward learning, knowledge, and development

Declaration

I certify that this thesis which is submitted for the degree of master is the result of my own research, except where otherwise acknowledged, and that this study (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed: 

Name: Anwar Amin Mousa Hammad

Date: 31/8/2024

Acknowledgment

I would like to thank God Almighty for making it possible for me to get to this academic level and for making it possible for me to finalize my master's thesis. I would like to convey my sincere gratitude to everyone who helped to finish my thesis.

I would like to express my special thanks and gratitude to Dr. Ibtisam Dwakat for her continuous support and hard work for the unwavering and persistent suggestions for improvement and advice she gave me when I was writing this thesis report. I was enriched with much information that can help me in the future.

I extend my sincere thanks and gratitude to the institution (Istishari Arab Hospital) that supported me and provided the necessary conditions for me to complete my studies. I am also thankful to the centers that welcomed me and facilitated my access to the data required for my studies. Finally, I would like to thank the prestigious Al-Quds University and the Faculty of graduate studies, including the Maternal and Child Health Program

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List of Abbreviation

Abbreviation	Full Term
QoL	Quality of Life
FertiQoL	Fertility Quality of Life
IVF	In-vitro Fertilization
ART	Assisted reproductive technology
WHO	World Health Organization

Abstract:

Background. infertility is not only a reproductive problem but also a societal and cultural issue especially in the Palestinian community. Previous studies concluded that infertility negatively influences the infertile individual and strongly affects the quality of life of those people.

Aim. To assess the quality of life among infertile men and women who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah- West Bank.

Method. A descriptive cross-sectional study design was employed to implement this study by using online questionnaire. The target population was composed of infertile men and women who seeking infertility treatment in Razan centers in Bethlehem and Ramallah, Palestinian European fertility center in Ramallah in the West Bank, Palestine. Data was collected using a online questionnaire, a valid and reliable Arabic version of the "FertiQol international" questionnaire was used in the data collection. The questionnaire includes two sections: the socio-demographic characteristics, and the FertiQoL questionnaire subscale. A convenient sample of the participants (100 women and 100 men) were met at the centers as mentioned above and invited to participate in the study according to the inclusion criteria then the participants fill the online questionnaire after they received the link to the questionnaire. The data was analyzed using the Statistical Package for Social Sciences (SPSS) Version (25).

Results. The study included a total of 200 participants, with an equal distribution of Men (50.0%) and Women (50.0%) Our findings indicate that the QoL of infertile women is better than infertile men. For infertile men and women, the 18-27 age group had significantly lower scores compared to the older age groups on all FertiQoL subscales ($p<0.05$). For infertile women, significant differences were found between job status and FertiQoL subscales in the Mind-Body, Relational, Social, Core FertiQoL, Treatment Tolerability, and Total FertiQoL. In contrast, for infertile men, statistically significant differences in the Relational, Core FertiQoL, Treatment Environment, Treatment Tolerability, subscales, and Total FertiQoL score were significantly higher for employed versus unemployed Men ($p=0.037$). In monthly economic status, for infertile men and women P- values were less than (0.05) in all subscales. For both infertile men and women, those who had successful pregnancies before scored significantly higher on all subscales ($p= 0.001$), except the social subscale for infertile women, there was no significant difference. For infertile Men, there were statistically significant differences between FertiQoL and type of infertility in the Social ($p=0.01$) and Core FertiQoL($p=0.03$) subscales, for Women, there was a statistically significant difference in the Mind-body subscale ($p=0.01$), and Core FertiQoL subscale ($p=0.05$) only. For Men, there were statistically significant differences between FertiQoL and undergone in vitro fertilization in the Relational, Social, Core FertiQoL, and Treatment environment ($p<0.0001$) subscales, and infertile Women, in the Mind-body, and Core FertiQoL($p<0.0001$) subscales.

Conclusion. The infertile women and men evaluated their satisfaction with their QoL as good most of the participants evaluated their health and satisfaction with scores of more than 3 from 5, however, the infertile women had better QoL than infertile men. The QoL becomes better for infertile men and women by increasing in age, high education level, having a job, high family monthly income, and having previous successful pregnancies. No correlation was found between the QoL of infertile men and women and the type of infertility, duration of infertility, residence area, and the diagnosed cause of infertility. Infertility among Palestinians is a complex and multifactorial issue influenced by societal, financial, cultural, and political issues.

Keywords: Infertility; Quality of life; Couples; Men and Women; Gender; Palestine; FertiQoL; IVF.

Chapter One

Introduction:

1.1Introduction:

Infertility is defined as the failure to get pregnant after at least 12 months of unprotected sexual intercourse (Hazlina et al., 2022). Infertility is a reproductive system disorder that affects 9-15% of couples worldwide (Amiri et al., 2017). However, infertility and its treatment cause a heavy psychological burden on affected couples, which can significantly influence their quality of life (QoL), life satisfaction, and overall well-being of infertile couples (P. Dourou et al., 2023). Infertility is one of the most difficult and challenging conditions facing couples, it negatively affects the QoL for the infertile couple. (Abdallah et al., 2024; Alghamdi et al., 2023). Although Infertility is a significant issue in reproductive health (Dever, 2023; Rooney & Domar, 2018). It is not an illness, but it may cause serious emotional, social, and psychological effects on the infertile person (Maroufizadeh et al., 2018). QoL is defined as a multidimensional construct that includes perceived psychological, physical, social, and environmental functioning and health (Casu et al., 2021).

Quality of life is one of the most vital issues of health. Although the term "quality of life" has many distinct definitions, it can be understood in three different ways: as the features of a person's welfare; as their economic, social, and physical capacities; and as the signs of a sickness. Understanding client demands is made feasible by measuring the QoL, which helps to raise the standard of services provided (Royani et al., 2019).

Depression and anxiety disorder are complications of infertility, as well as the success rate of infertility treatment, is affected by the emotional status of the infertile couples. Moreover, infertility treatments have adverse effects on women's physical and

psychological health and surely have negative consequences on the economic, and psychosocial aspects of life (Smith et al., 2023).

Additionally, Infertility is a societal issue, and it is one of the causes of divorce among couples, particularly in Arab countries as Palestine. A considerable number of infertile women also struggle to stabilize their marital status because having children is very important in the continuity of marriage. A piece of evidence showed that infertile couples experience less sexual satisfaction than fertile couples because the stress level dramatically rises, and marital satisfaction significantly declines as the infertility treatment starts (Esmaeel Eghtedar Nejad et al., 2020). Previous studies showed that infertility might affect the partner's relationships negatively or positively accordingly, the couples who accept the diagnosis and treatment of infertility may become more intimate and feel closer to one another on the contrary, couples who do not accept their situation, their relationship may be negatively affected, as a result, their QoL will be affected (Wendołowska et al., 2022).

Various individual factors affect the QoL of infertile couples such as gender, age, and coping mechanisms (Usman & Khan, 2019). Moreover, education level is another factor that affects the QoL of infertile couples (Ni et al., 2021; Usman & Khan, 2019).

On the other hand, infertility-related factors (such as type of diagnosis, type of treatment, and duration of infertility), and relational factors (such as marital relationship quality), influence perceived levels of psychological health and QoL (Ni et al., 2021; Usman & Khan, 2019). Previous studies showed that stressful life events are elements that significantly affect the levels of QoL (Panagiota Dourou et al., 2023).

According to Palestinian culture, married couples are not only expected to have a child but also, expected to have them as soon as possible, so any delay in having children is a huge burden on the couples and the extended family as well. Unfortunately, being infertile in Palestinian society is not a personal issue, it is a societal, financial, and stigmatization issue (Katwsa, 2013).

As well known, the infertility treatment cost is a big challenge facing infertile couples, which may force them to an abandonment of worth things to achieve the infertility treatment costs (Katwsa, 2013; Njagi et al., 2020). In addition, Palestinian society is dominated by the Islamic religion and the Islamic character, Islam allows polygamy, and perhaps the most important motive that pushes men to polygamy is their belief that it is the available solution to infertility, regardless of the psychological hurt on the wife, especially if the cause of infertility diagnosed as a women-related factor (Baloushah, Barjasteh, et al., 2021). study aims to assess the QoL among infertile men and women in the West Bank (Bethlehem-Ramallah), from both perspectives of men and women.

1.2 Problem statement

Infertility is a common problem around the world that affects 9% to 15% of couples who are of reproductive age (Royani et al., 2019). It may cause serious psychological trauma, imbalance in the relationships of couples, and even divorce (Royani et al., 2019). Infertility has a significant influence on men's and women's QoL, especially in communities where having children after marriage is the first priority (Royani et al., 2019).

With regard, to the Palestinian community, having children is one of the basic concerns among Palestinian couples, it links to Palestinian cultural, and societal norms as well as having children is also connected to Palestinian resilience against the Israeli occupation. Therefore, experiencing infertility is a major problem that faces Palestinian couples and may disturb their lives, negatively affecting their physical, and psychological health and the QoL for those couples. The studies in Palestine about the QoL of infertile women and men are scarce, the only study as local evidence in the Gaza Strip showed that infertility among Palestinian women resulted in living under painful, challenging experiences and many psychological and emotional losses (Baloushah, Barjasteh, et al., 2021). Thus, to promote the QoL for both infertile Palestinian men and women in the West Bank is necessary to assess the level of QoL of them and highlights the factors that might impact their QoL. Therefore, this study aims to assess the QoL among infertile men and women who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah-West Bank.

1.3 Significance of the Study:

This study gave more information about the QoL among infertile women and men in Bethlehem and Ramallah cities, within different circumstances. In addition, it can be a reference for the upcoming researchers, who intend to conduct studies related to the subject of this study.

The study results will highlight and draw attention to the policymakers, and healthcare providers to the challenges that Palestinian infertile men and women face during their treatment period. It is well known that infertile women and men have some psychological distress that has an impact on their QoL, especially women, as a vulnerable group, who are considerably more at risk than men in the situation of infertility also men face a lot of stress and challenges as infertile individuals.

This study expands the quantity of knowledge regarding the QoL for infertile women and men who were unable to have children, and the factors which might influence the QoL of Infertile women and men.

1.4 Purpose of the Study

The main purpose of this study is to assess the QoL among infertile men and women who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah - West Bank.

1.5 Objectives of the study

This study seeks to achieve the following sub-objectives:

1. To assess the level of the QoL for the infertile women who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah- West Bank.
2. To assess the level of the QoL for infertile men who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah- West Bank.
3. To describe the differences among demographic characteristics, reproductive and infertility-related factors, treatment-related factors, and marriage-related factors of the participants men and women, in the QoL of infertile women and men in the targeted centers.
4. To compare the level of the QoL between women and men who seeking treatment in the targeted centers.

1.6 Research Questions

This study seeks to answer the following questions:

1. What is the level of the QoL for infertile women who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah- West Bank?
2. What is the level of the QoL for infertile men who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah- West Bank?
3. Are there any differences among demographic characteristics, reproductive and infertility-related factors, treatment-related factors, and marriage-related factors, in the QoL of infertile women and men in the targeted centers?

4. Are there any differences between the level of the QoL between women and men who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah- West Bank?

1.7 Hypothesis

1. There are significant differences between infertile men and women in relation to demographic characteristics, reproductive and infertility-related factors, treatment-related factors, and marriage-related factors, and the QoL of infertile women and men in the targeted centers.
2. There is no statistical correlation between Gender and the level of QoL in infertile participants.

1.8 Variables of the study

1- **Dependent variable:**

Quality of life level of infertile men and women and its subscale such as:

- Personal factors: emotional and body-mind.
- Interpersonal factors: relational and social.
- Treatment factors: treatment environment and treatment tolerability.

2- Independent variables:

- Socio-demographic factors like sex, age, educational level, having a job, residence, Monthly household income and infertility and reproductive history, and treatment related factors like numbers of IVF attempted.

1.8 Conceptual Definitions:

1. **Infertility:**

Infertility is defined as failure to get pregnant after 12 months at least of unprotected and regular intercourse. (Nik Hazlina et al., 2022).

2. Primary infertility:

This means that no pregnancy is achieved at all. In other words, primary infertility is diagnosed when couples fail to have any pregnancy before unprotected intercourse in their marriage life which was at least 1 year. (Abebe et al., 2020).

3. Secondary infertility:

When couples achieve at least one prior pregnancy in their marriage life. (Refaat Abd Elmohsen et al., 2023).

4. Quality of life (QoL):

A multidimensional concept that includes areas that include the psychological, physical, social, environmental, and health functioning of the individual. (Gil-González et al., 2020).

5. assisted reproductive technology (ART):

is a medical intervention technique used to induce or assist the pregnancy to occur when a normal pregnancy is not possible to occur spontaneously, the ART includes in-vitro fertilization (IVF), and intracytoplasmic sperm injection (ICSI). (Abbas et al., 2020).

6. In-vitro fertilization (IVF):

IVF is a multi-step procedure developed to assist with conception or reduce genetic issues. Firstly, mature ovum or oocytes are withdrawn from the ovaries. Then those oocytes were fertilized by sperm artificially at the laboratory, and finally, the implementation of the fertilized oocytes (embryo) to the uterus. (Dabbagh Rezaeiye et al., 2022).

7. Demographic characteristics:

Demographic characteristics of the population sample, such as age and gender, as well as other socio-demographic variables, including marital status, family composition, living arrangements, ethnicity, educational and professional class. The results are displayed both at the individual and household level. This helps to form a larger picture of each respondent who participated in the study (Großbritannien, 2003).

1.9 Operation definitions:

1. the socio-demographics:

are the socio-demographics characteristics of participants which are gender, age, education level, duration of marriage, number of deliveries and abortions, duration of infertility, monthly income, previous IVF attempts, residence, cause of infertility, type of infertility.

2. Infertility:

Failure to get pregnant after 12 months at least of unprotected and regular intercourse, and infertility diagnosed as primary or secondary.

3. Total Quality of Life (FertiQoL):

An evaluation of participants' QoL is carried out using a scale from 1 to 5 in two subscale groups. Each group contains questions about specific items. These groups are the core FertiQoL and treatment FertiQoL, which together represent the total FertiQoL.

4. Satisfaction with the quality of life:

Participants evaluate their satisfaction with life directly by answering if they are satisfied.

5. Core FertiQoL:

Is an evaluation of QoL by 24 items of questions of personal and intrapersonal items that continuously evaluate the emotional, mind-body, social, and relational subscales items.

6.Treatment FertiQoL:

An evaluation of QoL by the optional part which assesses the QoL of participants during the treatment period in 10 items which assess the treatment environment and treatment tolerability.

Chapter Two

Literature Review

2.1 Infertility and its impact on infertile people:

Infertility is defined as the inability to pregnancy occur after 1 year (or more) of intercourse without any contraceptive methods or precautions (Amiri et al., 2017; Hazlina et al., 2022). Infertility is a major problem of reproductive health; it is not a disease, but it can be a real factor in causing emotional disorders and social and psychological consequences (Baloushah, Barjasteh, et al., 2021).

Two types of infertility are present, primary and secondary. Primary infertility is diagnosed in women who have not been pregnant before. According to secondary infertility, there is at least one conception, but it fails to repeat, that the sources causing infertility can be from a man, a woman, or both (Abebe, 2020). Bilateral uterine tube obstruction is the most common cause of infertility. Obstruction of the fallopian tubes is mainly due to pelvic inflammatory disease caused by postorbital and postpartum infections. In addition, ovulation disorder, contraceptive use, and socio-cultural factors are the causes of women infertility (Amiri et al., 2017). According to the causes of infertility in men, there are eight common causes of infertility in men anatomical differences, systematic diseases, chromosomal abnormalities, exposure to toxins, sperm antibodies, infections, and damages (Abadeen et al., 2022). Also, Cultural factors such as eating habits, types of work, and men exposure to heat. All are risk factors that affect men fertility. This can lead to impaired sperm cell production (Oligozoospermia or Azoospermia), sperm mobility (Astenozoospermia), and sexual habit that ends in infertility (Abebe, 2020). Clinically, infertility is a reproductive system disorder that affects 9-15% of couples worldwide

(Amiri et al., 2017). The prevalence of primary infertility (1.5 to 2.6%) is lower than secondary infertility (7.2 to 18%). Approximately, 50% of all reported couple infertility cases are associated with men-related factors (Martins et al., 2020).

Infertility has a significant impact on couples, it affects their psychology, sexuality, and financial issues. A recent study shows that infertility is considered a failure of the parental project, leading to passive emotions, with women more likely to report psychological distress and seek help (Jamali et al., 2024). Infertility may interrupt the couples' sexual relationships, causing dissatisfaction, stress, and anxiety, according to men sometimes reporting more sexual disorders due to sociocultural factors (Jamali et al., 2024). Financially, infertility treatments are costly, couples may delay their conception plans (Jamali et al., 2024). Additionally, infertility can cause profound adjustments in couples, changing their views of themselves and their relationships, leading to fears, grief, guilt, and unrealistic expectations (Sharma & Shrivastava, 2022). The emotional toll of infertility is likened to that of death or catastrophic illness, impacting both individuals and couples significantly (Ara et al., 2022). Moreover, infertility leads to serious psychological trauma and social stigma. In some cases, it may end up with social shame and exclusion, verbal and physical abuse, and marriage and separation violence (Abebe, 2020).

2.2 Quality of life and infertility (QoL):

Quality of life is a multidimensional construct that includes perceived psychological, physical, social, and environmental functioning and health (Casu et al., 2017). It is defined as how individuals perceive their position concerning their goals, expectations, standards, and concerns in the context of their culture and value system (Casu et al., 2017). Aiming to specifically address both dimensions of perceived emotional, physical, relational, and social QoL as well as accessibility and perceived quality of services, quality of interactions with medical staff, and the physical and psychological effects of medical treatments, the conception QoL construct was developed from this perspective (Bayoumi et al., 2021).

The capacity of people's minds to withstand and adapt to situations that pose a threat to their lives is known as resilience (Tian et al., 2024). A person with resilience is flexible and adaptable and returns to recovery as soon as the stressors are eliminated, while those with weaker resilience are less able to adjust to new circumstances (Li et al., 2019). This element protects infertile couples from mental anguish while also enhancing their QoL. In other words, couples that have better levels of QoL despite infertility are more resilient psychologically (Wdowiak et al., 2021). People's perceptions of their QoL vary depending on the circumstances, the period, and how they choose to live (Amiri & Bandani, 2021). Fertility is of considerable relevance in socio-cultural terms and studies because the elements that affect the QoL vary in various civilizations and cultures (E. Eghtedar Nejad et al., 2020). Infertility significantly reduces couples' QoL because of the consequences resulting from it (Ha & Ban, 2020).

A recent cross-sectional study was conducted to assess the QoL of infertile couples and its determinants in Belgrade among 378 infertile couples, the results showed that women had lower QoL than men, as well as Women had lower scores in physical, emotional, and social functioning. On the other hand, Men also had lower QoL scores in the emotional, and social domains. Men who are from rural areas, their ages over 40 years old, and are highly educated were significantly associated with a lower QoL (Zlatanovic et al., 2024).

Another descriptive correlational study using a convenience method was conducted in Iran, in 2021, to predict the factors that impact the QoL of infertile couples based on factors related to infertility, marital adjustment, and background characteristics. 131 women and 79 men who were seeking infertility treatment in an urban area of Tabriz, Iran, by using the QoL and Spiner's marital adjustment questionnaires. The study findings showed that infertile Men' QoL was better than infertile Women, in general, findings indicate that gender, insurance, and marital adjustment are the main factors that affect the infertile QoL (Eghtedar, Jasemi, et al., 2021).

Also, a cross-sectional study was conducted in Turkey to assess the QoL of infertile couples using the (FertiQoL) questionnaire. The study involved 127 infertile couples admitted to the University Hospital. Findings indicate that the QoL level of men was better than infertile women, Additionally, for both infertile men and women, being in a marriage of less than 10 years had a negative impact on their emotional score, Women who had undergone infertility treatment, men diagnosed with primary infertility, and men with a lower level of education and living in rural or suburban areas all scored lower on the mind-body subscale. Women over 30 years old with high financial income scored higher on the social well-being subscale. Men married for more than 10 years, men with children, and men with secondary infertility also scored highly on the social subscale. Lastly, women who had been married more than once scored higher on the tolerability and environment subscale (Goker et al., 2018).

3.2 QoL and infertility-related factors:

Research has therefore identified several individual factors (such as gender, age, and coping mechanisms), infertility-related factors (such as type of diagnosis, type of treatment, and duration of infertility), and relational factors (such as marital relationship quality), influencing perceived levels of psychological health and QoL (Usman & Khan, 2019). Also, failed treatment trials were associated negatively with the psychological and mental health of infertile couples which indicates a low level of QoL for them. (Hasan et al., 2023). Stressful life events should be taken into consideration as elements that significantly affect physical and psychological health indices and perceived levels of QoL, according to research (Tang et al., 2022). Therefore, considering infertility research, several studies (Camacho, 2018) revealed the presence of stressful events in the family of origin (such as divorce, financial problems, deaths, and maltreatment). In addition, family pre-existing pregnancy difficulties (such as unwanted children, stillborn children, abortion), and childhood health issues (such as injuries, illness, and hospitalization) are

frequently reported in the biographical background of infertile patients, revealing a significant impact on (Riddle et al., 2023).

In addition, previous studies highlight the education level as a factor that affects the QoL of infertile couples (Zlatanovic et al., 2024), a good level of education can increase the level of QoL. When previous experience of suffering from infertility treatment can be a factor in reducing the anxiety and stress of infertile couples. Primary infertility directly on the QoL especially it a cause of reduces the satisfaction of couples about their sexual life (Zlatanovic et al., 2024).

4.2 QoL of infertile women and men in Palestine:

Infertility can have a significant impact on the mental health of Palestinian men. It often manifests as depression, which is characterized by symptoms such as sleep problems, anxiety, aggression, decreased self-esteem, confidence, and life satisfaction (Baloushah, Elsous, et al., 2021).

Especially in Palestine, women are often pressured by society and their families to get married and have children, so it has been observed in previous studies that nearly half of the infertile women in Palestine experience one or more symptoms of depression (Jaber et al., 2022). These findings of psychological stress and pressure toward infertile women are consistent with the results of similar studies conducted in other countries (Elsous et al., 2021; Katwsa, 2013).

It is important to highlight that the husbands of infertile women play a significant role in decreasing the QoL for these women. In Palestinian society, women are dependent on men and are considered the weakest part of the society. Additionally, having children and good reproductive health is seen as an indicator of the strength of the family. Which can increase the stress on Palestinian infertile couples, specifically women (Elsous et al., 2021).

In Palestine, a cross-sectional study was conducted, which aimed to investigate the QoL of infertile couples who seek in vitro fertilizations (IVFs) by gender in the Gaza Strip, Palestine, in 2021, among 383 infertile couples collected by convenient sample, using (FertiQoL) questionnaire in the Arabic version, study findings showed that Palestinian infertile men QoL is higher than Palestinian infertile women. Higher education, younger age, shorter duration of marriage, lower infertility duration, and fewer IVF attempts were found to increase the FertiQoL score (Baloushah, Barjasteh, et al., 2021).

Another descriptive design study was conducted on infertility and its impacts on Palestinian infertile women's mental health status. It was aimed to assess the psychological distress in infertile women in the West Bank, Palestine, using The Symptom Checklist-90-R, on 100 women between 18 and 42 years old, who attended a family planning clinic, The result was that infertile women had more psychological distress as represented through the 3 indices and 9 symptom dimensions of the SCL-90-R, than fertile women. There is no impact of duration of infertility, causes of infertility, age, and place of residence on the

mental health of infertile women, while employment and scientific qualifications affect the mental health of infertile women positively (Baloushah, Barjasteh, et al., 2021).

5.2 Conclusion

Based on the previous presentation of literature, it can be concluded that QoL is affected by infertility, and many factors play an important role in the reality of the QoL of infertile women and men. For all (women & men) either fertile or infertile, there are several factors such as social perspectives and effects, economic factors, and cultural factors that impact the q QoL of each couple, different from one to other upon their capability to adapt those factors. For example, social factors affect infertile (women & men) more than (women & men) who have children.

Since the couple is undergoing infertility treatment, they face too much stress derived from the community in different aspects. The stress that the couple faces might lead finally to depression, and psychological effects, which negatively affect the process of treatment and its outputs. Accordingly, the literature stated that psychological disorders highly negatively impact the treatment of infertility. Therefore, the literature emphasizes the need to overlook the social, cultural, and economic factors affecting couples undergoing treatment in order to ensure high-quality treatment and help them cope with the effects that impact their QoL.

6.2 Conceptual framework

The purpose of this study is to assess the QoL among infertile men and women who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah - West Bank. The conceptual framework of this study concerns the assessment of the QoL level of infertile men & women, and the factors associated with the level of the QoL of infertile individuals. This study's conceptual framework was based on previous related research studies to identify the factors that influence the QoL of both men and women suffering from infertility. Most previous studies that examined the topic of our study have agreed upon and studied a variety of factors that impact the QoL of infertile individuals. They included more than one side of factors as independent variables that affect the dependent variable which is the QoL level of infertile women and men, first, infertile individual-related factors of demographics data like age, education level, having children, and having a job, secondly, factors related to the relationship or shared with the partner, Like the duration of the marriage, duration of infertility, type of infertility, the cause of infertility, the income of the family, and if couples had a previous experience with IVF before, thirdly, environmental factors as the culture and the community interaction with infertile people, finally, the treatment-related factors, as the treatment facilities, costs, treatment interventions, and procedures, and the accessibility to getting the infertility treatment. Per the previous studies (S. Baloushah, Barjasteh, et al., 2021; Keramat et al., 2014; Royani et al., 2019; Usman & Khan, 2019), This study examined various independent variables including age, level of education, employment status, economic status, duration of

marriage, duration of infertility, type of infertility, cause of infertility, cultural background, previous experience with in vitro fertilization (IVF), and treatment, as they relate to the dependent variable of the QoL for infertile men and women.

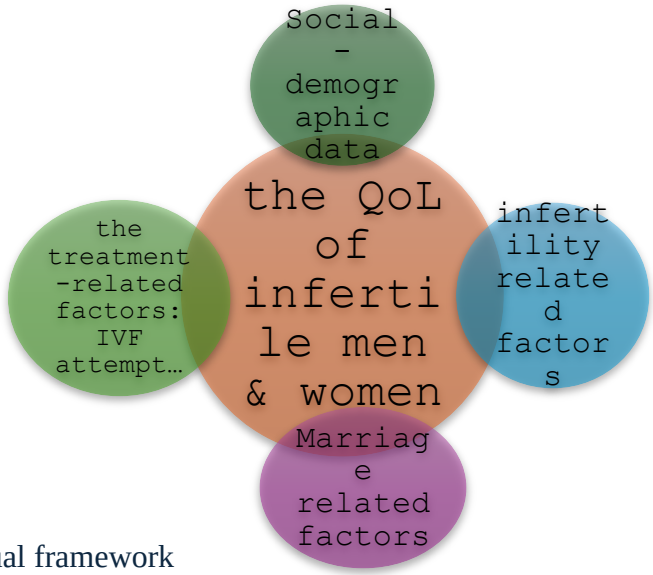

Figure 1 conceptual framework

Chapter There

: Methodology

3.1 Introduction:

This chapter presents the research methodology for the whole study: study design, population, and sampling, study tool, data collection, and methods of data analysis.

3.2 Study Design:

The study used a cross-sectional design by online questionnaire to achieve the study purpose is to assess the QoL among infertile men and women who seek treatment at Razan and European fertility centers in Bethlehem and Ramallah- West Bank.

3.3 Study Setting:

The study was conducted in Bethlehem and Ramallah in the West Bank, Palestine. In Razan centers in Bethlehem, Ramallah, and the Palestinian European fertility center in Ramallah,

Razan Fertility Center is the first center in Palestine and the fourth in the Middle East for infertility treatment IVF started more than 27 years since 1995, and it has four branches in Nablus, Ramallah, Bethlehem, and Jenin. Razan centers have become the leading Centers for infertility treatment in Palestine.

The European Palestinian Center for Fertilization and Assisted Reproduction" was established in 2011, and has 3 branches in Hebron, Ramallah, and Jenin.

Study Duration

The study was conducted between Jun 2023 and March 2024.

4.3 Population of the study

The target population has been all Palestinian women and men who suffer from infertility in the West Bank who seek infertility treatment.

1.4.3 The target population and sampling method:

The target population was women and men suffering from infertility in the West Bank and seeking infertility treatment from Razan centers in Bethlehem, Ramallah, and the Palestinian European Fertility Center in Ramallah.

2.4.3 inclusion criteria: -

- Infertile (women & men) who married at least for 1 year.
- (women & men) who suffer primary and secondary infertility.
- (women & men) with previous experience with infertility treatment and those who are also undergoing treatment for the first time.

3.4.3 Exclusion criteria:

- Those who come for gender selection of the baby without infertility and those who want to twin.
- Those who have psychological psychiatric or mental problems. like depression.
- Those who have a medical history of chronic diseases could affect the QoL.

5.3 sampling method

A convenient sample was recruited the participants from women and men who visited the Razan fertility center in Bethlehem, Ramallah, and the European Center for IVF in Ramallah at the time of the study based on the inclusion and exclusion criteria of the study.

6.3 Sample size:

The estimated sample size calculation was done using a single proportion formula considering the incidence rate of infertile couples 7% in the previous study (Hammoudeh et al, 2013) as follows:

$n = (z/\Delta)^2 p(1-p)$

Z value based on 95% CI = 1.96

Absolute precision (Δ) = 5% (0.05)

P = 0.7 based on proportion of couple facing infertility

n = (1.96/0.05)2 * (0.7)(1-0.7) = 100 men and 100 women

The total sample size = 200 participants men and women

7.3 Study tool:

A valid and reliable Arabic version of the fertility quality of life questionnaire "FertiQol international" questionnaire (FertiQoL) was used in data collection. We used the Arabic version which is available at: http://sites.cardiff.ac.uk/ fertiqol/files/2015/02/fertiqol-Arabic.pdf. Also, FertiQoL is available in Dutch, English, Finnish, French, German, Italian, Spanish, Swedish, Portuguese, Russian, Danish, Greek, Japanese, Arabic, Mandarin, Vietnamese, and Korean.

The questionnaire had two parts: firstly, the socio-demographic characteristics (age, education level, duration of marriage, number of deliveries and abortions, duration of infertility, et al), and secondly the FertiQoL questionnaire, developed by Boivin, Takefman, and Braverman in 2011, FertiQol consists of 34 items (two additional items measure overall satisfaction with physical health and quality of life). Overall physical health and quality of life satisfaction: two separate questions were assessed and evaluated the overall individual physical health and satisfaction with quality of life. There are two sections to the remaining items. A core section of the personal and interpersonal quality of life ("Core FertiQol") and an optional section of the treatment ("Treatment FertiQol").

- Personal quality of life: 12 items assess the impact of fertility problems, in the emotional (6 items), and mind-body (6 items) domains. The Emotional subscale measures how much a person experiences negative emotions related to fertility issues. The Mind-Body subscale measures the extent to which a person experiences physical symptoms and cognitive or behavioral disruptions due to infertility.

- Interpersonal quality of life: 12 items assess the impact of fertility problems, in the relational (6 items) and social (6 items) domains. The Relational subscale evaluates how fertility problems impact the marital or partnership components. The Social subscale assesses the impact of fertility problems on social interactions.

- Optional treatment quality of life: 10 items assess the QoL during treatment, which includes any medical intervention or consultation, according to treatment environment (6 items) and treatment tolerability (4 items). (Table 3-1). The Treatment Environment subscale evaluates the accessibility and quality of treatment as well as interactions with medical staff. The Treatment Tolerability subscale assesses the impact of mental and physical symptoms on daily life due to treatment. No scale was available for the cut of points regarding the QoL in the scale. Based on the previous studies, the whole subscale

score ranged between 0 to 100, a higher score indicating a better quality of life (S. Baloushah, Barjasteh, et al., 2021; Zlatanovic et al., 2024). The average time to fill out the questionnaire was 15 minutes.

Table3. 1 the domain and the number of items in each domain

Domain	Number of items	scale used	Total FertiQoL
Personal quality of life	12 items	Likert scale 1-5	Core FertiQol
Interpersonal quality of life	12 items	Likert scale 1-5	
Optional treatment quality of life	10 items	Likert scale 1-5	Treatment FertiQol

8.3 Validity and reliability:

The international questionnaire is valid and reliable. It was also used in a previous study in Gaza. The validity and reliability were tested in the Gaza study measured by the Cronbach alpha coefficient, of the Core and Treatment FertiQoL (and subscales) was good to excellent and ranged between 0.72 and 0.92. (Elsous et al., 2021). So, the questionnaire is valid. For reliability, we tested the reliability of the FertiQoL subscale questionnaire, by the Cronbach alpha coefficient of a pilot sample consisting of 20 participants 10 men and 10 women was 0.72, the pilot sample was included in the total sample size.

9.3 Data collection:

The main researcher conducted the data collection, which started from Jun 2023 to March 2024, after permission from the fertility centers in Ramallah and Bethlehem. This study was conducted by using the FertiQoL- self-administered questionnaire, the questionnaire was formatted in Google form, and the QR code and link were made to be used by the participants. The data collection was conducted among men and women who had infertility and visited Razan In Vitro Fertilization in Bethlehem, Ramallah, and the European Centres for IVF in Ramallah for treatment. The main researcher visited the mentioned centers and met the eligible participants men and women who agreed to participate and then introduced the study aims and objectives to participants and obtained oral consent for participation. The participants who agreed to participate in this study were given the QR code or the

questionnaire link through WhatsApp and they filled out the online questionnaire. 200 questionnaires were filled out; One hundred women and one hundred men filled out the online questionnaire. (Table 3-2)

Table3. 2 describes the data collection in each center

Center	Total Number of the collected sample	Duration
Razan Fertility Center- Bethlehem	70 participants	10th Jun 2023 – 20 Feb 2024
Razan Fertility Center- Ramallah	80 participants	1st Jun 2023 – 5 March 2024
The European Palestinian Center for Fertilization- Ramallah	50 participants	2nd Jun 2023 – 10 March 2034

10.3 Ethical Considerations:

Ethical approval was obtained from the ethical committee at Al-Quds University in West Bank, Palestine with a reference number (RESC/2023-18). Permission from the administrators of the fertility centers; Razan centers in Ramallah and Bethlehem and European center in Ramallah. Oral Consent was obtained from participants to maintain voluntary participation. before starting data collection. The participants were given explanations about the purpose of the study and their contributions to this study. Participants were informed that all their answers would be anonymous and would not be linked to their identity. Also, every participant had the right to withdraw from the study at any time without any harm or consequences. Patient names were kept anonymous. The data was kept secure and maintained on the desktop of the researcher to protect data confidentiality.

11.3 Data Analysis:

After the data collection was completed, 200 questionnaires were entered into the Statistical Package for Social Sciences (SPSS) Version (25), we first tested for the normality of the key variables using the Shapiro-Wilk test. The results indicated the data was normally distributed, allowing the researcher to proceed with parametric statistical tests.

1.Sociodemographic characteristics:

analysis began with descriptive statistics, frequency, calculating the mean, standard deviation, and other summary measures for the variables of interest. This provided an initial overview of the characteristics of the dataset.

2.Quality of life for infertile men and men and the relationships with the variables of the study:

questionnaire items were rated on a 1–5 Likert scale, the highest score indicates a high level of the QoL of infertile (women & men). Descriptive statistics gauged the level of life quality among infertile women and men. Next, a series of statistical tests was used to examine the relationships between the variables. For comparisons between two independent groups, we utilized Student's t-tests. To analyze the differences between multiple groups, we performed one-way ANOVA tests. Post-hoc Tukey HSD tests were used to determine which specific groups differed from others.

Chapter four

Results

1.4 Participant Socio-demographic Characteristics

The participants' distribution by socio-demographic characteristics is presented in Table 4-1. The study included a total of 200 participants, with 100 participants from men and 100 from women. The participant distribution by socio-demographic characteristics reveals distinct gender differences. In the age groups, Women make up the majority at 67.9% in the 18-27 range, while Men predominate in the older age groups of 38-47 (65.1%) and 48 and above (66.7%). The educational level also shows variations, with Women having higher representation at the bachelor's degree (BA) level at 57.5%, while Men are more common in the basic (71.4%), Postgraduate studies (66.7%), and diploma (51.2%) categories. Job-status exhibits a stark contrast, as 70% of employed participants are men compared to only 30% women. The residence area type is more evenly split, with city, village, and camp locations all having roughly equal proportions of men and women participants. Regarding monthly household income, the lower brackets of 1000-2000 (75% women) and 2000-3000 (57.1% men) show gender differences, while the higher income groups of 3000-4000 (54.8% women) and more than 4000 (56.4% men) have the opposite trend. Total FertiQoL, the data suggests significant variations in the socio-demographic characteristics of the participants based on their sex.

Table 4. 1.A. Participant distribution by socio-demographic characteristics according to sex

Variable		Sex			
		Men		Women	
Age group	18-27	17	17%	36	36%
	28-37	53	53%	48	48%
	38-47	28	28%	15	15%
	48 and above	2	2%	1	1%
Educational level	Basic	5	5%	2	2%
	Secondary	29	29%	29	29%
	Diploma	21	21%	20	20%
	BA	31	31%	42	42%
	Postgraduate studies	14	14%	7	7%
Job-status	No	9	9%	61	61%
	Yes	91	91%	39	39%
Residence area type	City	29	29%	30	30%
	Village	53	53%	52	52%
	Camp	18	18%	18	18%
Monthly household income	1000-2000	2	2%	6	6%
	2000-3000'	12	12%	9	9%
	3000-4000	42	42%	51	51%
	More than 4000	44	44%	34	34%

2.4 Reproductive History and Infertility Profile of Participants

The detailed reproductive history and infertility profile of the participants according to sex reveal several key points. In terms of the number of children, Women have a higher percentage (52.5%) with no children, while Men are more represented (53.5-80%) in the categories of 1-4 children. Regarding miscarriages, the data shows that Women have a greater share in the higher number of miscarriages, with 56.3% and 60% for 2 and 3 miscarriages respectively, and 85.7% and 78.6% for 4 and 5 miscarriages. The type of infertility is more evenly distributed, with 51.2% of Men having primary infertility compar/ed to 48.8% of Women. When it comes to IVF treatment, the percentages are similar for those who have and have not undergone IVF. However, the number of IVF cycles shows a higher proportion of Women in the 3, 4, and 7 cycle categories. The causes of infertility attribute more cases to the husband (53.2%) than the wife (45.2%), while unknown causes account for about half of the cases for both genders. Finally, a higher percentage of Men (54.3%) have had successful pregnancies compared to Women (45.7%).

Table 4. 2 Reproductive History and Infertility Profile of Participants according to sex

indicator		Men		Women	
		Count	%	Count	%
Number of children, if any:	0	56	56%	62	62%
	1	23	23%	20	20%
	2	13	13%	10	10%
	3	4	4%	5	5%
	4	4	4%	1	1%
	5	0	0%	2	2%
Number of miscarriages, if any:	0	56	56%	47	47%
	1	17	17%	9	9%
	2	14	14%	18	18%
	3	4	4%	6	6%
	4	1	1%	6	6%
	5	3	3 %	11	11%
	6	3	3%	1	1%
	7	0	0%	1	1%
	8	2	2%	1	1%
Type of infertility:	Primary (No previous pregnancies)	87	87%	83	83%
	Secondary (After having children)	13	13%	17	17%
If yes, how many times have you undergone IVF?	0	50	50%	47	47%
	1	16	16%	16	16%
	2	15	15%	9	9%
	3	7	7%	11	11%
	4	0	0%	3	3%
	5	7	7%	5	5%
	6	4	4%	4	4%
	7	0	0%	2	2%
	8	1	1%	0	0%
Have you undergone in vitro fertilization (IVF) before?	No	50	50%	51	51%
	Yes	50	50%	49	49%
Causes of infertility:	Causes attributed to the husband:	22	22%	25	25%
	Causes attributed to the wife:	17	17%	14	14%
	Causes attributed to both partners:	0	0%	1	1%
	Unknown causes	61	61%	60	60%
Have you had any successful pregnancies before?	No	55	55%	63	63%
	Yes	44	44%	37	37%

3.4 Perception about health and satisfaction of Quality of life in generally

The data provided allows for an analysis of how individuals of different sexes perceive their level of health. Among men respondents, the distribution of health ratings was as follows: 16.0% rated their health as 2, 3% as 3, and 30.0% as 4, and 23.0% as 5. On the other hand, women respondents had the following distribution: 33.3% rated their health as 2, 23.8% as 3, while 29.5% as 4, and 13.3% as 5. So, 53% of infertile Men evaluated their health as good and very good, while 42,8% of infertile Women rated their health as good and very good.

Infertile Men rated their satisfaction of QoL from less to high evaluations with 29.9% of them as 2, 18.6% as 3, 21.6% as 4, and 5 as 29.9%. when Women rated their satisfaction with their QoL at 35.7% as 2, 18.4% as 3, 30.6% as 4, and 15.3% as 5. Infertile Men were satisfied with their QoL in a percentage of 51,5% of total men participants, and Women with 45.9% only.

Table 4. 3 Total FertiQoL health distributions among Men and Women

Indicator Mean		Sex			
		Men		Women	
Total physical health	Very Poor	16	16.0%	33	33.0%
	Poor	31	31.0%	23	23.0%
	Good	30	30.0%	30	30.0%
	Very Good	23	23.0%	14	14.0%
Satisfaction with their quality of life	Very Unsatisfied	29	29%	35	35%
	Unsatisfied	18	18%	18	18 %
	Satisfied	24	24%	30	30%
	Very Satisfied	29	29%	17	17%

4.4 Mean score of FertiQoL subscales among Women and Men

table 4-4 shows several notable differences in the mean score of the FertiQoL subscales between Men and Women. In the Emotional subscale, Women have a slightly higher mean of 59.7 compared to 58.4 for Men, and a smaller standard deviation of 10.1 compared to 11.3 for Men. This suggests Women have a higher and more consistent emotional QoL related to fertility. For the Mind-body subscale, Women have a considerably higher mean of 60.3 compared to 57.0 for Men, though the standard deviations are similar at 10.2 and 9.8 respectively. This indicates Women tend to have a better mind-body experience with fertility-related issues. The Relational subscale shows the largest gap, with Women having a mean of 70.0 compared to only 60.5 for Men. The standard deviations are also higher for Women at 10.8 versus 10.1 for Men. This suggests Women have a significantly better relational QoL around fertility. A similar pattern is seen in the social subscale, where Women have a higher mean of 65.8 versus 60.0 for Men, and a higher standard deviation of 11.9 compared to 9.5 for Men. For the Core FertiQoL score, Women have a notably higher mean of 63.95 compared to 58.975 for Men, with Women also having a higher standard deviation of 11.2 versus 9.8 for Men. In the Treatment-related subscales, Women again tend to have higher means, such as 54.4 versus 50.4 for the Treatment environment, and 57.1 versus 55.2 for Treatment FertiQoL. The standard deviations are more similar between genders in these subscales. Total FertiQoL, the data suggests Women generally have a higher QoL related to fertility compared to Men, across emotional, physical, relational, and social domains. The higher standard deviations for Women also indicate more variability in their experiences and perspectives.

Table 4. 4 Differences in Mean score of FertiQoL subscales according to sex

Subscale	Men				Women			
	Mean	Max	Min	Standard Deviation	Mean	Max	Min	Standard Deviation
Emotional	58.4	80.0	30.0	11.3	59.7	79.2	33.3	10.1
Mind-body	57.0	86.7	33.3	9.8	60.3	83.8	36.7	10.2
Relational	60.5	86.7	33.3	10.1	70.0	91.2	30.0	10.8
Social	60.0	83.3	36.7	9.5	65.8	85.4	20.0	11.9
Core FertiQoL	**59.0**	**79.8**	**35.2**	**9.8**	**64.0**	**84.7**	**18.2**	**11 .2**
Treatment environment	50.4	80.0	20.0	13.9	54.4	79	20.0	13.0
Treatment tolerability	60.0	83.3	36.7	9.5	59.8	86	20.0	11.9
Treatment FertiQoL	**55.2**	**78.2**	**35.1**	**10.2**	**57.1**	**84.5**	**31.2**	**10.8**
Total FertiQoL	**57.9**	**76.1**	**44.4**	**5.4**	**60.5**	**76.6**	**38.9**	**5.2**

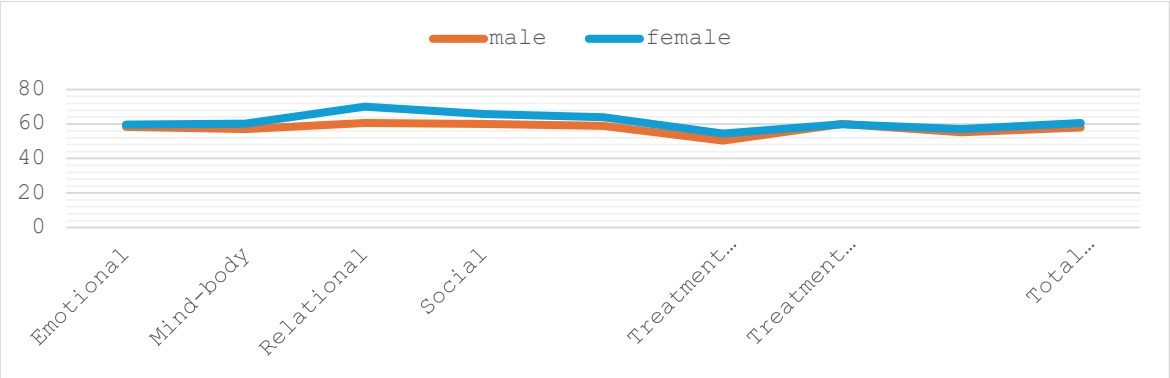

Figure 2 FertiQoL among men and women

5.4 Comparison of subscales means in the QoL and the subscale between Men and Women.

In Table 4-5, the results of the two-sample t-tests reveal several notable differences in the QoL related to fertility between Men and Women. The largest and most statistically significant difference was found in the Relational domain, where Women scored substantially higher than Men ($p < 0.001$). For the Core FertiQoL score and the various Treatment-related subscales, no statistically significant differences were detected between genders. The data suggests that while Women and Men have largely similar experiences in the Total FertiQoL and treatment-related aspects of fertility QoL, Women report significantly better relational FertiQoL, and potentially better mind-body experiences, compared to their men counterparts. See Table 4-5

Table 4. 5 Comparison of FertiQoL subscales mean score between Men and Women (2 independent sample t-test)

Subscales	T statistic	P-value
Emotional	-0.221	0.825
Mind body	-1.644	0.102
Relational	-3.775	0.000
Social	0.139	0.889
Core FertiQoL	0.434	0.652
Treatment environment	1.068	0.287
Treatment tolerability	0.139	0.889
Treatment FertiQoL	0.985	0.163
Total FertiQoL	-1.292	0.198

6.4 Comparison in mean scores across the age groups for both Men and Women on most of the quality-of-life subscales

Table 4-6 shows the comparison results in mean scores across the age groups for both Men and Women on most of the quality-of-life subscales. For Men, the 18-27 age group had significantly lower scores compared to the 28-37, 38-47, and 48 and above age groups on the Emotional, Mind Body, Relational, Social, Core FertiQoL, and Treatment Tolerability subscales ($p<0.05$). A similar pattern was observed for Women, where the 18-27 age group had significantly lower scores compared to the older age groups on the Emotional, Mind Body, Relational, Social, and Core FertiQoL subscales ($p<0.05$). However, the middle-aged (38-47 years) and older (48+ years) groups did not differ significantly on most subscales for either gender, except for the Emotional and Mind Body subscales in Women. The Treatment Environment and Treatment FertiQoL subscales did not show significant age differences for either Men or Women.

Table 4.6 Comparison in mean scores across the age groups for both Men and Women on most of the QoL subscales (one-way ANOVA test)

Sex	Subscale	Mean score by age				One-way ANOVA	P-value
		18-27 (26.5%)	28-37 (50.5%)	38-47 (21.5%)	48 or higher 1.5%)		
Men	Emotional	53	57	59	61	7.75	0.006
	Mind-body	51	55	57	60	11.34	0.001
	Relational	57	59	61	64	5.33	0.022
	Social	56	59	61	63	5.33	0.022
	Total core FertiQoL	55	58	60	62	5.33	0.022
	Treatment environment	48	50	51	53	1.79	0.174
	Treatment tolerability	56	59	61	63	5.33	0.022
	Treatment FertiQoL	47	49	51	53	3.32	0.069
	Total FertiQoL	54	57	59	61	5.33	0.022
Women	Emotional	55	58	60	63	7.75	0.006
	Mind-body	57	59	61	64	5.33	0.022
	Relational	66	68	71	74	7.75	0.006
	Social	62	65	67	70	7.75	0.006

Table 4.7.B Comparison in mean scores across the age groups for both Men and Women on most of the QoL subscales (one-way ANOVA test)

	Total core FertiQoL	60	63	65	68	7.75	0.006
	Treatment environment	51	53	55	57	3.32	0.069
	Treatment tolerability	56	58	60	62	3.32	0.069
	Treatment FertiQoL	54	56	58	60	3.32	0.069
	Total FertiQoL	57	59	61	63	3.32	0.069

4.7 The pattern of differences between the age groups in both Women and Men.

Table 4- 7 shows that the pattern of significant differences between the young age group and the middle/old age groups is similar for both Women and Men, with a few minor differences in the exact p-values. The middle and old age groups did not have significantly different mean scores on any of the subscales for either gender.

Table 4. 8 Post-hoc Tukey HSD multiple comparisons test (age)

Gender	Subscale	Young vs. Middle (p-value)	Young vs. Old (p-value)	Middle vs. Old (p-value)
Women	Emotional	0.008	0.022	0.713
	Mind Body	0.018	0.047	0.678
	Relational	0.024	0.024	0.978
	Social	0.024	0.024	0.978
	Core FertiQoL	0.024	0.024	0.978
	Treatment Tolerability	0.069	0.069	0.978
Men	Emotional	0.021	0.048	0.774
	Mind Body	0.002	0.029	0.473
	Relational	0.024	0.024	0.978
	Social	0.024	0.024	0.978
	Core FertiQoL	0.024	0.024	0.978
	Treatment Tolerability	0.024	0.024	0.978

8.4 FertiQoL and its subscale according to the educational level

Based on the one-way ANOVA test results provided in table 4-8, there were statistically significant differences in the mean scores of all quality-of-life subscales across different educational levels for both Men and Women. For the men participants, the p-values were all highly significant at $p < 0.001$ for the Emotional, Mind-Body, Relational, Social, Core FertiQoL, Treatment Environment, Treatment Tolerability, Treatment FertiQoL, and Total FertiQoL subscales. The mean scores generally increased as the educational level increased, with the postgraduate studies educational category having the highest mean scores compared to the lower educational levels. Similarly, for the women participants, the one-way ANOVA tests also revealed statistically significant differences in mean subscale scores across educational levels, with p-values ranging from $p = 0.002$ to $p = 0.006$. Again, the mean scores tended to be higher for Women with more advanced educational qualifications, particularly for the Relational, Social, and Core FertiQoL subscales.

Table 4. 9 Differences in the mean score of subscales according to gender and educational level (one- way ANOVA test)

Gender	Subscale	Educational level (%) among Men and Women					One-way ANOVA	P-value
		Basic (5.0%)	Secondary (29%)	Diploma (21%)	BA (31%)	Postgraduate studies (14%)		
Men	Emotional	55	57	58	59	61.5	4.51	0.001
	Mind-body	54	55.5	57	58	60	4.51	0.001
	Relational	57	59	60	61	65	4.51	0.001
	Social	57	59	60	60.5	64	4.51	0.001
	Core FertiQoL	48	49.5	50	51	53	4.51	0.001
	Treatment environment	57	59	60	60.5	63	4.51	0.001
	Treatment tolerability	48	49.5	50	51	53	4.51	0.001
	Treatment FertiQoL	52	54	55	55.5	59	4.51	0.001
	Total FertiQoL	55	57	58	58.5	61	4.51	0.001
Women	Emotional	56.5	58	59	60.5	62	4.02	0.002
	Mind-body	57	59	60	61.5	63	3.81	0.003
	Relational	65	68	70	72	75	4.51	0.001
	Social	62	64	66	68	71	4.51	0.001
	Core FertiQoL	60.5	62.5	64	66	69	3.68	0.004
	Treatment environment	52	53.5	54.5	55.5	57	3.59	0.005
	Treatment tolerability	56.5	59	59.5	60	61.5	3.51	0.006
	Treatment FertiQoL	54	56	57	58	60	4.51	0.001
	Total FertiQoL	57	59	60	62	63	4.02	0.002

Table 4. 10 The results of the multiple comparisons in Educational Level

Gender	**Subscale**	**Educational Level**	**P-value**
Men	Emotional	Basic vs Secondary	0.01
		Basic vs Diploma	<0.001
		Basic vs Bachelor's	<0.001
		Basic vs postgraduate studies	<0.001
	Mind-Body	Basic vs Secondary	0.03
		Basic vs Diploma	<0.001
		Basic vs Bachelor's	<0.001
		Basic vs postgraduate studies	<0.001
	Relational	Basic vs Secondary	0.01
		Basic vs Diploma	<0.001
		Basic vs Bachelor's	<0.001
		Basic vs postgraduate studies	<0.001
	Social	Basic vs Secondary	0.01
		Basic vs Diploma	<0.001
		Basic vs Bachelor's	<0.001
		Basic vs postgraduate studies	<0.001
Women	Emotional	Basic vs Bachelor's	0.001
		Basic vs postgraduate studies	0.001
	Mind-Body	Basic vs Bachelor's	0.001
		Basic vs postgraduate studies	0.002
	Relational	Basic vs Diploma	<0.001
		Basic vs Bachelor's	<0.001
		Basic vs postgraduate studies	<0.001
	Social	Basic vs Diploma	<0.001
		Basic vs Bachelor's	<0.001
		Basic vs postgraduate studies	<0.001

9.4 FertiQoL subscale and its relation to Job-status

The findings showed statistically significant differences in the Relational (p=0.049), Core FertiQoL(p=0.002), Treatment Environment (p=0.044), and Treatment Tolerability (p=0.001) subscales; this indicated that employed Men scoring was higher than unemployed ones. The Total FertiQoL score was also significantly higher for employed versus unemployed Men (p=0.037). There were no other statistically significant differences for the men participants. For Women, significant differences were found in the Mind-Body (p=0.031), Relational (p=0.023), Social (p=0.035), Core FertiQoL(p=0.019), Treatment Tolerability (p=0.045), and Total FertiQoL(p=0.012) subscales, with employed Women scoring higher than unemployed Women. The Treatment Environment and Treatment FertiQoL subscales did not show statistically significant differences. Total FertiQoL, the results indicate that employment status is associated with better QoL outcomes, with more pronounced differences observed for women participants compared to Men across various domains. These are explained in table 4-10.

Table 4. 11 Differences in the mean of subscales according to gender and having a job (2-independent samples T-test)

Gender	Subscale	Mean score		T- statistic	P-value
		Have no job (35%)	Having a job (65%)		
Men	Emotional	58.4	55.0	1.94	0.053
	Mind-body	57.0	54.0	1.84	0.067
	Relational	60.5	57.0	1.98*	0.049*
	Social	60.0	57.0	1.9	0.061
	Core FertiQoL	59.0	48.0	3.09**	0.002**
	Treatment environment	50.4	57.0	2.00*	0.044*
	Treatment tolerability	60.0	48.0	3.35**	0.001**
	Treatment FertiQoL	55.2	52.0	1.73	0.085
	Total FertiQoL	57.9	55.0	2.09*	0.037*
Women	Emotional	59.7	58.0	1.09	0.278
	Mind-body	60.3	57.0	2.17*	0.031*
	Relational	70.0	66.0	2.29*	0.023*
	Social	65.8	62.0	2.11*	0.035*
	Core FertiQoL	64.0	60.5	2.36*	0.019*
	Treatment environment	54.4	52.0	1.5	0.134
	Treatment tolerability	59.8	56.5	2.01*	0.045*
	Treatment FertiQoL	57.1	54.0	1.91	0.057
	Total FertiQoL	60.5	57.0	2.54*	0.012*

10.4 FertiQoL subscales according to Participants' residence

Based on the one-way ANOVA analysis conducted on the data provided in Table 4-11, the results indicate that there are no statistically significant differences in the means of the subscales across the three residence area types (city, village, and camp) for both Men and Women. These findings suggest that the quality-of-life subscales, including emotional, mind-body, relational, social, treatment environment, treatment tolerability, and Treatment FertiQoL, as well as the Total FertiQoL, are not significantly influenced by the type of residence area (city, village, or camp) for both men and women participants in this study.

Table 4. 12 Differences in the mean of subscales according to gender and Participant residence (one-way ANOVA test)

Gender	Subscale	Residence area type			One-way ANOVA test	P-value
		City %29.5	Village %52.5	Camp %18		
Men	Emotional	58.0	58.6	59.0	0.79	0.454
	Mind body	56.5	57.2	57.5	0.813	0.445
	Relational	60.0	60.8	61.0	0.775	0.462
	Social	59.5	60.2	60.5	0.797	0.452
	Core FertiQoL	58.5	59.2	59.5	0.808	0.447
	Treatment environment	50.0	50.6	51.0	0.827	0.439
	Treatment tolerability	59.5	60.2	60.5	0.797	0.452
	Treatment FertiQoL	54.8	55.4	55.8	0.819	0.442
	TOTAL FERTIQOL	57.5	58.1	58.5	0.8	0.45
Women	Emotional	59.2	59.9	60.2	0.775	0.462
	Mind body	59.8	60.5	60.8	0.77	0.464
	Relational	69.2	70.2	70.5	0.748	0.474
	Social	65.0	65.7	66.0	0.763	0.467
	Core FertiQoL	63.2	64.0	64.3	0.771	0.463
	Treatment environment	54.0	54.6	55.0	0.807	0.446
	Treatment tolerability	59.2	59.9	60.2	0.775	0.462
	Treatment FertiQoL	56.6	57.3	57.6	0.789	0.455
	TOTAL FERTIQOL	60.0	60.7	61.0	0.773	0.463

11.4 FertiQoL subscales according to monthly household income

Based on the one-way ANOVA analysis presented in Table 12, there are statistically significant differences in the mean subscale values between the men and women groups across all the subscales, including Emotional, Mind-body, Relational, Social, Core FertiQoL, Treatment environment, Treatment tolerability, Treatment FertiQoL, and the total FertiQoL score. For the men group, the p-values range from 0.028 to 0.047, all of which are less than the 0.05 significance level. For the women group, the p-values range from 0.015 to 0.033, again all less than the 0.05 significance level. These results indicate that the difference in subscale means between the men and women groups is statistically

significant at the 95% confidence level. The lower p-values observed in the women group suggest that the differences in subscale values across the monthly household income levels are more pronounced for Women compared to Men. This is explained in Table 4-12 and Table 4-13)

Table 4. 13 Differences in the mean of the mean of subscales according to gender and monthly household income (one-way ANOVA tests)

Sex	Subscale	Monthly household income				One-way ANOVA	P-value
		1000-2000 %4	2000-3000 %10.5	3000-4000 %46.5	More than 4000 %39		
Men	Emotional	58.0	58.2	58.4	58.6	2.95	0.034
	Mind-body	56.5	56.8	57.0	57.2	2.8	0.041
	Relational	60.0	60.3	60.5	60.8	3.25	0.028
	Social	59.5	59.8	60.0	60.2	2.9	0.036
	Core FertiQoL	58.5	58.8	59.0	59.2	3	0.032
	Treatment environment	50.0	50.2	50.4	50.6	2.6	0.047
	Treatment tolerability	59.5	59.8	60.0	60.2	2.9	0.036
	Treatment FertiQoL	54.8	55.0	55.2	55.4	2.85	0.039
	total FertiQoL	57.5	57.7	57.9	58.1	3.55	0.021
Women	Emotional	59.2	59.4	59.7	59.9	3.3	0.027
	Mind body	59.8	60.0	60.3	60.5	4	0.015
	Relational	69.2	69.6	70.0	70.4	3.45	0.023
	Social	65.0	65.3	65.7	66.0	3.65	0.019
	Core FertiQoL	63.2	63.5	64.0	64.3	2.97	0.033
	Treatment environment	54.0	54.2	54.4	54.6	3.45	0.023
	Treatment tolerability	59.2	59.4	59.7	59.9	3.4	0.025
	Treatment FertiQoL	56.6	56.8	57.0	57.3	3.8	0.017
	total FertiQoL	60.0	60.2	60.5	60.7	3.55	0.021

Table 4.14 Multiple comparison analysis for the data in Table 4.12

Men Subscale	1000-2000 vs 2000-3000	1000-2000 vs 3000-4000	1000-2000 vs >4000	2000-3000 vs 3000-4000	2000-3000 vs >4000	3000-4000 vs >4000
Emotional	p=0.085	p=0.025	p=0.012	p=0.137	p=0.054	p=0.189
Mind-Body	p=0.104	p=0.032	p=0.015	p=0.151	p=0.066	p=0.207
Relational	p=0.067	p=0.021	p=0.008	p=0.116	p=0.045	p=0.174
Women Subscale	1000-2000 vs 2000-3000	1000-2000 vs 3000-4000	1000-2000 vs >4000	2000-3000 vs 3000-4000	2000-3000 vs >4000	3000-4000 vs >4000
Emotional	p=0.077	p=0.020	p=0.010	p=0.102	p=0.040	p=0.158
Mind-Body	p=0.052	p=0.011	p=0.005	p=0.078	p=0.031	p=0.123

The multiple comparison analysis shows that there are statistically significant differences ($p<0.05$) in several subscale scores between the higher income groups (3000-4000 and >4000) compared to the lower income group (1000-2000) for both Men and Women. This indicates that higher household income is generally associated with better quality-of-life scores across various domains. The multiple comparison analysis of the quality-of-life subscale scores based on gender and monthly household income reveals several statistically significant differences. For Men, the emotional, mind-body, and relational subscales showed significantly higher scores in the 3000-4000 and >4000 income groups compared to the 1000-2000 income group ($p<0.05$). A similar pattern was observed for Women, with the emotional and mind-body subscales displaying significantly higher scores in the higher-income groups. The analysis suggests that higher household income is generally associated with better QoL across various domains, including emotional, physical, and social aspects, for both genders. These findings highlight the importance of socioeconomic factors in shaping an individual's Total FertiQoL well-being and QoL.

12.4 FertiQoL subscales relationship to the duration of the marriage

The results of a one-way ANOVA analysis examining the differences in mean scores of various subscales related to QoL, treatment environment, treatment tolerability, and Total FertiQoL, according to gender and the duration of marriage (less than 5 years, 5 to 10 years, and 10 years or more). For the men and women participants, the p-values for all the subscales and the Total FertiQoL measure are greater than 0.05, indicating that there are no statistically significant differences in the mean scores across the different durations of marriage. Similarly, for the women participants, the p-values for all the subscales and the Total FertiQoL measure are also greater than 0.05, suggesting that the mean scores do not differ significantly based on the duration of the marriage. Table 4.14 presents the results.

Table 4.14. differences in the mean of subscales according to gender and duration of marriage (one-way ANOVA)

Sex	Subscale	Duration of marriage			One-way ANOVA	P-value
		<5 %36	[5,10) %53.5	>=10 %10.5		
Men	Emotional	58.0	58.6	58.8	1.65	0.199
	Mind-body	56.5	57.3	57.2	1.25	0.292
	Relational	59.8	60.8	60.9	1.8	0.169
	Social	59.2	60.3	60.5	1.7	0.193
	Core FertiQoL	58.4	59.3	59.4	1.55	0.215
	Treatment environment	50.0	50.6	50.7	1.1	0.330
	Treatment tolerability	59.5	60.2	60.4	1.45	0.233
	Treatment FertiQoL	54.8	55.4	55.6	1.25	0.288
	TOTAL FERTIQOL	57.2	58.1	58.4	1.5	0.220
Women	Emotional	60.0	59.5	59.5	0.97	0.379
	Mind body	60.8	60.0	60.2	0.8	0.452
	Relational	70.5	69.8	70.2	0.58	0.558
	Social	66.2	65.5	65.8	0.48	0.619
	Core FertiQoL	64.4	63.7	64.0	0.75	0.475
	Treatment environment	54.8	54.1	54.3	0.79	0.457
	Treatment tolerability	60.2	59.5	59.6	0.91	0.402
	Treatment FertiQoL	57.5	56.8	57.0	0.8	0.450
	TOTAL FERTIQOL	61.0	60.3	60.7	0.83	0.436

13.4 FertiQoL subscales according to successful pregnancies before

In Table 4- 15, for Men, those who had successful pregnancies before scored significantly higher on all subscales compared to those without prior successful pregnancies, including emotional (p=0.001), mind-body (p=0.001), relational (p=0.001), social (p=0.001), Core FertiQoL(p=0.001), treatment environment (p=0.001), treatment tolerability (p=0.002), Treatment FertiQoL (p=0.001), and the Total FertiQoL score (p=0.001). For Women, similar patterns were observed, with those who had successful pregnancies scoring

significantly higher on emotional (p=0.028), mind-body (p=0.001), relational (p=0.001), Core FertiQoL(p=0.001), treatment environment (p=0.001), treatment tolerability (p=0.001), and Treatment FertiQoL (p=0.001) subscales, as well as the Total FertiQoL score (p=0.028). The only exception was the social subscale, where the difference was not statistically significant (p=0.467) for Women.

Table 4.15 differences in the mean of subscales according to gender and having any successful pregnancies before (2 independent samples test)

Sex	Subscale	Any successful pregnancies before		T statistic	P-value
		Yes % %40.7	No % 59.3		
Men	Emotional	57.6	59.8	3.27	0.001
	Mind-body	61.3	59.2	3.27	0.001
	Relational	60.8	58.4	3.27	0.001
	Social	59.6	50.0	3.27	0.001
	core FertiQoL	50.8	59.5	3.27	0.001
	Treatment environment	60.6	54.8	3.27	0.001
	Treatment tolerability	55.6	57.2	3.09	0.002
	Treatment FertiQoL	58.6	59.8	3.27	0.001
	Total FertiQoL	57.6	59.2	3.27	0.001
Women	Emotional	59.3	60.8	2.2	0.028
	Mind-body	59.5	70.5	3.27	0.001
	Relational	69.3	66.2	3.27	0.001
	Social	64.9	64.4	0.73	0.467
	core FertiQoL	63.1	54.8	3.27	0.001
	Treatment environment	53.6	60.2	3.27	0.001
	Treatment tolerability	59.1	57.5	3.27	0.001
	Treatment FertiQoL	56.3	61.0	3.27	0.001
	Total FertiQoL	59.7	60.8	2.2	0.028

14.4 FertiQoL subscales according to Type of infertility and Gender

Based on the 2 independent samples t-tests conducted on the data in Table 4-16, the following key findings are observed: For Men, there were statistically significant differences in the Social (p=0.01) and Core FertiQoL(p=0.03) subscales, with primary infertility Men scoring lower on these measures compared to secondary infertility Men. No other subscales showed statistically significant differences between primary and secondary infertility for Men. For Women, there was a statistically significant difference in the Mind-body subscale (p=0.01), with primary infertility Women scoring higher than secondary infertility Women. The Core FertiQoL subscale also approached statistical significance (p=0.05), with primary infertility Women scoring lower than secondary infertility Women. No other subscales showed statistically significant differences between primary and secondary infertility for Women. The total FertiQoL scores did not differ significantly between primary and secondary infertility for either Men or Women.

Table 4.16 Differences in the mean of subscales according to gender and type of infertility (2 independent samples test)

Sex	Subscale	Type of infertility		T statistic	P-value
		Primary 85%	Secondary 15%		
Men	Emotional	59.8	57.6	1	0.32
	Mind-body	59.2	61.3	0.79	0.43
	Relational	58.4	60.8	0.88	0.38
	Social	50.0	59.6	2.58	0.01
	core FertiQoL	59.5	50.8	2.17	0.03
	Treatment environment	54.8	60.6	1.65	0.10
	Treatment tolerability	57.2	55.6	0.48	0.63
	Treatment FertiQoL	59.8	58.6	0.43	0.67
	Total FertiQoL	59.2	57.6	0.6	0.55
Women	Emotional	60.8	59.3	0.71	0.48
	Mind body	70.5	59.5	2.58	0.01
	Relational	66.2	69.3	0.79	0.43
	Social	64.4	64.9	0.14	0.89
	core FertiQoL	54.8	63.1	1.96	0.05
	Treatment environment	60.2	53.6	1.32	0.19
	Treatment tolerability	57.5	59.1	0.35	0.73
	Treatment FertiQoL	61.0	56.3	1.05	0.29
	Total FertiQoL	60.8	59.7	0.5	0.62

15.4 FertiQoL subscales according to the causes of infertility

The analysis found no statistically significant differences in the quality-of-life subscale scores across the various causes of infertility, for both men and women participants. For Men, the p-values for all subscales ranged from 0.79 to 0.96, well above the 0.05 significance level.

This indicates the emotional, mind-body, relational, social, and Total FertiQoL scores did not differ significantly whether infertility was attributed to the husband, wife, both partners, or unknown causes. Similarly, for Women, the p-values across the subscales were between 0.86 and 0.92, also not reaching statistical significance. The results demonstrate that the cause of infertility does not have a major impact on the QoL reported by individuals, regardless of gender. The quality-of-life subscale scores remained consistent regardless of whether the infertility was associated with the men partner, women partner, both, or an unknown origin.

Table 4.17 Differences in the mean of subscales according to gender and causes of infertility (one-way ANOVA test)

Sex	Subscale	Causes of infertility				F statistic	P-value
		Attributed to the husband %23.5	Attributed to the wife %15.5	Attributed to both partners %0.5	Unknown causes %60.5		
Men	Emotional	57.5	58.1	57.8	57.9	0.18	0.91
	Mind body	56.2	56.8	56.5	56.7	0.33	0.79
	Relational	59.7	60.1	59.9	60.0	0.1	0.96
	Social	59.2	59.6	59.4	59.5	0.12	0.95
	Core FertiQoL	58.2	58.7	58.4	58.6	0.24	0.87
	Treatment environment	49.7	50.1	49.9	50.0	0.14	0.94
	Treatment tolerability	59.2	59.6	59.4	59.5	0.1	0.96
	Treatment FertiQoL	54.5	54.9	54.7	54.8	0.14	0.94
	TOTAL FERTIQOL	57.1	57.6	57.3	57.5	0.27	0.84
Women	Emotional	60.1	59.4	60.2	59.8	0.18	0.91
	Mind-body	60.6	60.0	60.7	60.4	0.24	0.86
	Relational	70.5	69.5	70.6	70.3	0.21	0.88
	Social	66.1	65.5	66.2	65.9	0.17	0.92
	Core FertiQoL	64.3	63.6	64.4	64.1	0.24	0.87
	Treatment environment	54.7	54.1	54.8	54.5	0.19	0.90
	Treatment tolerability	60.1	59.5	60.2	59.9	0.2	0.89
	Treatment FertiQoL	57.4	56.8	57.5	57.2	0.2	0.89
	TOTAL FERTIQOL	60.8	60.1	60.9	60.6	0.21	0.88

16.4 FertiQoL subscales according to undergone in vitro fertilization

The results from the independent samples t-test comparing the mean subscale scores between individuals who had undergone in vitro fertilization (IVF) and those who had not, stratified by gender, are as follows:

For Men, there were statistically significant differences in the Relational (p=0.01), Social (p<0.0001), Core FertiQoL(p<0.0001), and Treatment environment (p<0.0001) subscales, with those who had undergone IVF scoring lower on the Relational, Social, and Treatment environment subscales, but higher on the Core FertiQoL subscale. There were no significant differences in the Emotional, Mind-body, Treatment tolerability, or Treatment FertiQoL subscales. For Women, there were statistically significant differences in the Mind-body (p<0.0001) and Core FertiQoL(p<0.0001) subscales, with those who had undergone IVF scoring higher on the Mind-body subscale but lower on the Core FertiQoL subscale. There were no significant differences in the Emotional, Relational, Social, Treatment environment, Treatment tolerability, or Treatment FertiQoL subscales.

The Total FertiQoL score did not differ significantly between the IVF and non-IVF groups for either Men or Women.

Table 4.18 differences in the mean of subscales according to gender and having vitro fertilization (IVF) before? (2 independent samples test)

Sex	Subscale	having vitro fertilization (IVF) before		T statistic	p-value
		Yes %49.5	No 50.5%		
Men	Emotional	58.9	56.4	1.31	0.19
	Mind-body	58.2	60.4	-1.27	0.20
	Relational	57.4	61.9	-2.81	0.01
	Social	50.2	59.6	-5.76	<0.0001
	Total core FertiQoL	58.8	52.7	4.41	< 0.0001
	Treatment environment	54.5	61.4	-4.77	< 0.0001
	Treatment tolerability	56.4	57.3	-0.57	0.57
	Treatment FertiQoL	58.6	57.4	0.73	0.47
	Total FertiQoL	56.6	58.4	-1.21	0.23
Women	Emotional	60.5	58.7	1.09	0.28
	Mind body	69.5	59.4	5.9	< 0.0001
	Relational	65.2	68.3	-2.08	0.04
	Social	63.4	62.9	0.32	0.75
	core FertiQoL	51.8	62.1	-6.14	< 0.0001
	Treatment environment	59.2	57.6	1.01	0.31
	Treatment tolerability	55.5	54.1	0.89	0.37
	Treatment FertiQoL	60.8	58.7	1.36	0.18
	Total FertiQoL	60.7	60.2	0.4	0.69

Chapter Five

Discussion

1.5 Overview

This section discusses this study's findings, where the study's results have been assessed and compared to the findings of other related studies. This study aimed to determine the QoL level of infertile men and women in Palestine's West Bank.

2.5 Summary of the study:

The study included 200 participants, distributed as Men (50.0%) and Women (50.0%). the majority of age women group was 67.9% in the 18-28 range, while Men were 38-48 (65.1%) and over 48 (66.7%). The education level of Women has higher representation at the bachelor's degree (BA) level at 57.5%, while Men are more common in the basic (71.4%), and Postgraduate studies (66.7%). These findings were within average with the results of a study done in the Gaza Strip, as most Women were 22-36 years old while Men were 35-43 years old. For the education level, Gaza study findings (60% to 64%) of total participants, men and women had university degrees and more (Baloushah, Barjasteh, et al., 2021). This study revealed that 70% of employed participants are men and only 30% women, these results were agreeable with (Baloushah, Barjasteh, et al., 2021) findings, in which 77,2% of Women were jobless, and 75.7% of Men had job. In our study, 85% of participants reported being diagnosed with primary infertility, while 15% reported with secondary infertility. These results are comparable to a previous study conducted in 2021, which found that 69.34% of Indian infertile couples responded with primary infertility, and

30.65% responded with secondary infertility (Wadadekar et al., 2021). This study found that the unknown cause of infertility was the most responded answer by 60.5% of the total participants, distributed as 50.4% of Men, and 49.6% of Women, then men-related factors with 23.5% of total participants with 46.8% of Men and 53.2% of Women. On the other hand, the Gaza Strip study showed that men-related factors were 34.9% while 30.6% of the unknown cause of infertility (Baloushah, Barjasteh, et al., 2021).

3.5 QoL of infertile Men and Women.

Our findings indicate that the QoL of infertile women is better than infertile men, agreeing with (Royani et al., 2019; Shi et al., 2024), which also found that infertile men had the lowest QoL level of infertile women. The most notable and statistically significant distinction was observed in the Relational subscale, with Women achieving significantly higher scores than Men, Women also had a higher mean score in the Mind-body subscale, this indicates that Palestinian Women tend to have a better mind-body experience with fertility-related issues, a similar trend is observed in the social subscale, with Women exhibiting a higher mean. Several factors could explain the results. Firstly, they could be associated with the study environment and location. The fact that Palestine is under Israeli occupation means that the study period coincides with times of war in Gaza and instability in the West Bank, security challenges, economic instability, and psychological distress. In addition, the traditional role of men in Palestinian society, where they are primarily responsible for meeting the family's needs, coupled with unstable security and economic situations, may lead to fears and obstacles that could affect men's satisfaction with their lives. Secondly, in Middle Eastern communities, having children is strongly associated with power. Therefore, infertility could significantly impact men's life structure, social image, and feelings of inadequacy. Finally, men's masculine coping styles, characterized by a reluctance to express their feelings and seek help, may reduce their evaluation of their quality of life. On the other hand, Women can smoothly talk about their problems and ask for help, which helps them reduce their concerns and may improve their quality of life. On the contrary, our study findings disagree with the previous studies. (Amiri et al., 2017), those showed that Men had a better FertiQol than Women.

4.5 The FertiQol of men and women and associated factors:

1.4.5 FertiQol level of women and men and age

According to the findings, FertiQoL is affected by age for both Palestinian women and men. The lowest score was recorded for the younger age group among women and men, opposite to previous studies' findings which revealed that young age of infertile women and men had higher satisfaction and better quality of life than older (Baloushah, Barjasteh, et al., 2021). our findings showed that (the Emotional, Mind Body, Relational, Social, Total

Core Quality of Life, and Treatment Tolerability subscales) had significant associations between the age of Men and QoL, A similar pattern was observed for Women, where the young age group had substantially lower scores compared to the older age, anxiety, stress, and fear about infertility problems, social stigma, also the transition from newlywed life feelings to infertility challenges and disability feelings, could be a reason driving the reduction of quality of life of young infertile age group for both genders. In addition, young ages are more impulsive and strongly driven by emotion, stress can easily control them, and a lot of unclear and negative thoughts could impact their life may volatile feelings about their life and gaps in their thoughts about whether they are happy or not, there is no stability based on the vagueness of life, lack of awareness, education, counselling and lack of experience of young ages are other challenging issues, On the contrary, older ages depend on thinking and reliable situations and true expectations more than emotions, which can help them to deal with infertility challenges and accept their lives and accept themselves. Moreover, previous studies showed that women with older age have a high risk of depression and dissatisfaction (Baloushah, Barjasteh, et al., 2021; Lakatos et al., 2017; Marzieh et al., 2017).

2.4.5 FertiQol level and education level

Based on this study's findings, high quality of life is associated with a higher education level, for both infertile women and men, in terms of the Emotional, Mind-Body, Relational, and social, Total Core Quality of Life, Treatment Environment, Treatment Tolerability, Treatment Quality of Life, and FertiQoL. This result agreed with the previous studies (Ni et al., 2021; Royani et al., 2019). This may be explained that education is a power and may allow increasing awareness of infertility, seeking infertility treatment, good self-esteem, and satisfaction toward life could be increased by level of education, It is a fact that a high level of education improves individuals' ability to recognize the value of life and their role in helping others by sharing their knowledge, make a change in other’s lives and get self-satisfaction from using what education and sciences gave to them, could covering insufficient sensation who delivered from infertility. which is not compatible with (Szigeti F et al., 2022) who indicate that there is no relationship between education level and FertiQoL of infertile women. Also, a previous study showed that there is no association between depression and the education level of infertile men (Baloushah, Elsous, et al., 2021).

3.4.5 FertiQol level and having a job.

Having a job positively impacts infertile ratings and evaluates their quality of life according to our findings which indicate that having a job increases the quality of life for individuals of both genders. Agreeing with previous studies that employee individuals have better self-esteem, especially women, (Baloushah, Elsous, et al., 2021; Çavdar & Coşkun, 2018). In this study, Men who had a job obtained better scores in relational, total core, treatment environment, treatment tolerability, and total FertiQoL subscales, and Women who had a job gave higher scores in the Mind-Body, Relational, Social, Total Core Quality of Life, Treatment Tolerability, and total FertiQoL subscales. That could be explained as for men, having a job is significant as it allows them to be financially responsible for their families and meet their needs, including the infertility treatment cost. For women, having a job and financial independence may have a positive effect on self-esteem and one's value in society, being independent and achieving self-actualization increases the women's ability to accept themselves and be more adaptive to situations like infertility and infertility treatment processes, as well as women could help in the costs of infertility treatment with men.

4.4.5 FertiQoL level and total family monthly income

The study findings indicate that higher household income is generally associated with better quality-of-life scores across all the FertiQol subscales for both gender Men and Women, and this is mentioned also in previous studies (Baloushah, Barjasteh, et al., 2021; Eghtedar, Asghari, et al., 2021; Namdar et al., 2017) findings agreed with that. Infertility treatment expenses could be an associated factor because their costs are expensive, and the family must have sufficient income to cover the expenses. Unfortunately, in Palestine, infertility treatment costs are not covered by any insurance or government agencies, which puts these high costs on the shoulders of infertile couples only, some people may be forced to sell something of value from their property, such as a car or a piece of land and Jewellery, to cover these costs, so treatment of infertility is an additional stress factor on men & women. The ongoing war in Gaza and the political instability negatively affect the financial status of the Palestinian people and limit their monthly incomes and this makes the Palestinians rearrange their properties. This finding is contrary to (Wdowiak et al., 2021) which showed no correlation between monthly income and infertile women's QoL.

5.4.5 FertiQoL level and having any successful pregnancies before

The study findings showed that FertiQoL of women and men becomes better when having a previous successful pregnancy, also the same findings were shown in other studies, (Baloushah, Barjasteh, et al., 2021; Eghtedar, Asghari, et al., 2021). According to infertile Men, those who had successful pregnancies before scored significantly higher on FertiQoL level on all subscales including emotional, mind-body, relational, social, total core FertiQol, treatment environment, treatment tolerability, treatment quality of life, and the total FertiQoL subscales compared to those who had no pregnancy before, For Women, similar patterns were observed, with those who had successful pregnancies scoring significantly higher on emotional, mind-body, relational, total core FertiQoL, treatment environment, treatment tolerability, and treatment FertiQol. The findings could be explained by, Firstly, previous experience with a successful pregnancy can improve the coping abilities of both men and women undergoing infertility treatment because couples get a chance to deal with pregnancy and the challenges of pregnancies, coping with babies, especially with a precious baby, which the concerns may be more and undetectable. Moreover, having a successful pregnancy before could decrease concerns and stressful thoughts about potential pregnancy failure. the opposite findings were shown in (Wdowiak et al., 2021).

6.4.5 FertiQoL level and type of infertility

For total FertiQoL scores were no significant differences between primary and secondary infertility for either Men or Women. The same was observed in (Çavdar & Coşkun, 2018; Eghtedar, Asghari, et al., 2021; Ni et al., 2021). in this study, Men have rated a lower score of QoL in primary infertility than in secondary in the social and total core FertiQoL subscale. This could be linked with less impact of social stigma in secondary infertility than primary; therefore, they get a pregnancy before. Women scored a higher score of QoL in secondary infertility than primary in the total core FertiQoL subscale and a lower score of secondary infertility than primary in the Mind/body subscale, which might be related to women thinking they have a problem that's preventing them from getting pregnant again, especially when there's no significant issue with their partner. Women might worry about getting older and their reduced opportunity to have more children. According to Palestinian culture, polygamy is a choice for men to have more children, which may lead to increased stress and concern for women.

(Çavdar & Coşkun, 2018) mentioned in their study that the duration of infertility negatively impacts the FertiQoL of individuals, and (Baloushah, Barjasteh, et al., 2021) suggest that the QoL of infertile men decreases with increased length of infertility duration. Our study's findings indicate there are no significant correlations between infertile men and women's QoL and the duration of infertility. Moreover, (Lakatos et al., 2020) findings showed that no significant correlations were the same in our study. Diagnosing the causes

of infertility did not impact the FertiQoL level according to our findings, which was in the same line with (Çavdar & Coşkun, 2018), which could be due to the awareness of couples about the treatment methods and the chance of treating the problem regardless of the cause.

According to this study's findings, there is no association between the duration of Marriage and FertiQoL, on the contrary, previous study findings in the Gaza Strip indicate that FertiQoL is affected by the duration of the marriage, for infertile men, FertiQoL increased by decreasing the duration of the marriage, however, infertile Women QoL was increased in relational score only (Baloushah, Barjasteh, et al., 2021). Other previous studies agreed with this study's findings, that there is no relationship between FertiQoL and the duration of the marriage. (Marzieh et al., 2017).

7.4.5 FertiQoL level and having vitro fertilization (IVF) before

Based on the findings of this study there are no statistically significant differences between the total FertiQoL and if an individual had IVF before, but Men who had previous experience with IVF scored lower score in the relational, social, and Treatment environment subscales, on the other hand, they scored higher score in the total core FertiQoL subscale, this was agreed with one previous study (Maroufizadeh et al., 2016). Also, Women who had undergone IVF scored lower on the Relational, Social, and Treatment environment subscales, but higher on the Total core FertiQoL subscale. Psychological status could have a negative impact on individuals regardless of gender, especially if they have had negative experiences. This can affect their sense of discomfort from their opportunity of success or not, social image, bad thoughts, and feelings of weakness or insufficiency because they need medical intervention to help them have a child, in addition to the associated treatment costs. For many people, the IVF experience is a harmful memory regardless of the success of achieving the desired. Also, for women, IVF procedures can have negative impacts on their physical and mental health. Some interventions may lead to painful memories that could result in psychological trauma. Still, on the other hand, previous experience can help them to recognize and set logical expectations which can reduce stress and pressure that may suffer individuals who are without previous experiences before. (Rooney & Domar, 2018) showed that the FertiQoL of Men who had previously undergone IVF was better than how was not when the FertiQoL of women was lower.

The findings of this study were interesting, infertile Men scored lower score than infertile women in the FertiQol subscale, however, in general, both infertile men and Women scored indicated that they evaluated their QoL well, despite a lot of challenges that influenced them as Palestinians people before being infertile which is an additional challenge.

5.5 Conclusion

This study assessed the QoL level of infertile men and women in Bethlehem and Ramallah cities on the west bank - of Palestine. The results of the study indicated that infertility may impact the level of QoL, the infertile women had better QoL than infertile men. The FertiQoL subscale was influenced increasingly for infertile men and women by age toward older age, high education level, having a job, high family monthly income, and having previous successful pregnancies. No association was found between the QoL of infertile men and women and the type of infertility, duration of infertility, residence, and the diagnosed cause of infertility. Men and Women scored lower score in the relation, social, and treatment environment subscale and higher in total core FertiQoL. Infertility among Palestinians is a complex and multifactorial issue influenced by societal, cultural, and political issues.

6.5 Strengths of the study

1. There is a lack of previous studies that highlight the quality of life for both infertile Men and Women in the West Bank. Therefore, this study provides important information about the QoL of those individuals, and factors that could impact their QoL, it will serve as the baseline for future studies to focus on the challenges they encountered during the treatment journey.

2. This study was conducted among infertile Men and Women individually, increasing the credibility of the data by eliminating the influence of the partner.

7.5 Limitations of the study

1. The study period coincided with an ongoing war on Gaza and on all the Palestinian people that reduced accessibility to the target population because of financial, safety, and political, which in terms limited the sample size of the target population.

2. The sensitivity of the topic and cultural stigma surrounding infertility reduced the willingness of the target population to participate in the study.

3. The findings from this study may not accurately reflect the true answers of infertile Men and Women' answers may have been impacted by bias from the participants due to the self-reporting nature of the questions.

4. Conducting convenience sampling limits the ability to generalize findings to the broader infertile Palestinian population.

5. Maybe there are additional independent factors that could impact the QoL of infertile women and men, which were not covered in the study such as societal, political, and psychological issues. A qualitative study may be recommended to explore these factors.

6. Using a cross-sectional study design limits the causal relationship.

8.5 Recommendations

1.8.5 For Future Research

1. Focus on conducting more studies on infertility and QoL of infertile individuals during a more stable period with a larger sample size.

2. Conducting qualitative research to focus on the depth of the factors associated with QoL of individuals suffering from infertility.

3. A comparison study with a fertile group of men and women to compare the results may be more powerful.

2.8.5 For the decision-makers and the Palestinian Ministry of Health

1. Working towards reducing the average cost of infertility treatment and improving access to treatment for infertile individuals, as well as aiming to provide infertility treatment services as part of government healthcare.

2. Providing financial assistance and allocating amounts of aid to individuals suffering from infertility based on their living conditions.

3.5.8 For the infertility centers

1. Enhancing psychological support and mental health for individuals experiencing infertility by providing access to psychologists and social workers at infertility treatment centers and increasing educational and psychological programs for this group.

2. Focus on men's psychological and mental health and involve them in counseling and psychological sessions also, encouraging their participation in follow-up visits.

For the healthcare providers

1. Work to increase awareness of the issues and challenges associated with infertility by providing educational courses and effective support for individuals dealing with infertility.

2. Provide counseling to women and men who suffer from infertility and seek treatment.

3. Workshops and community scientific seminars aimed at shedding light on men's mental health and contributing to raising the level of their QoL.

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Appendix1 FertQoL Questionnaire

استبانة لقياس جودة الحياة للرجال والنساء من يعانون من العقم

جامعة القدس/ كلية الدراسات العليا

حضرة المشارك/ المشاركة

تحية طيبة وبعد:

أنا طالبة ماجستير ببرنامج ماجستير تمريض الامومة والطفولة في جامعة القدس ـ كلية الدراسات العليا ، أقوم بدراسة مقطعيّة استكمالا للتخرج بعنوان **" مستوى جودة الحياة للنساء والرجال الذين يعانون من مشاكل العقم في منطقتي بيت لحم ورام الله"**

تهدف هذه الاستبانة إلى تقييم مستوى جودة الحياة للنساء والرجال الفلسطينين الذين يعانون من مشكلة العقم في منطقتي بيت لحم ورام الله. وعلاقتها مع المتغيرات الديموغرافية

تستهدف هذه الدراسة الرجال والنساء المتزوجون منذ مدة اقلها سنة ويعانون من العقم سواء كان عقم أولي أو ثانوي، كما وتستهدف من سبق لهم وتعرضوا للعلاج أو من هم تحت تجربة العلاج لأول مرة، ويستثنى من هذه الدراسة الرجال والنساء غير المشخصين بالعقم والذين لم يتموا العام على الزواج، كما يستثنى منها من يتوجهون لمراكز الاخصاب لأهداف أخرى غير علاج العقم مثل الرغبة بجنس مولود محدد أو الرغبة بإنجاب التوائم.

عزيزي المشترك:/ المشتركة

في حال موافقتك على المشاركة في هذه الدراسة فان مشاركتك ستكون طوعيّة وتتطلب فقط تعبئة الاستباتة الحالية، وتحتاج تعبئة هذه الاستبانة من 10 الى 15 دقيقة تقريباً.

إنّ المعلومات التي ستزونا بها مفيدة جداً لتحقيق الهدف الأساسي من هذه الدراسة، لذا، يرجى منك تحرّي الدّقة والمصداقيّة في الإجابة عن الأسئلة، لتعكس حقيقة رأيك بشكل سليم، وسيكون رأيكِ محل التقدير والاعتبار، وسوف تنتهي مشاركتك في البحث بمجرد الانتهاء من الإجابة على الاستبانة.

جميع المعلومات التي سيتم جمعها خلال البحث سيُتعامَل معها بسرية تامّة من قبل الباحثين، إذ أنّه سيتم جمع المعلومات دون التطرّق لهوية المشارِكة، ولا لأيّ معلومة قد تدل على هويتها

في حال لديك اي استفسار يمكنك التواصل مع الباحثة الرئيسة على الرقم التالي 0568063676 في حال عدم تواجدها شخصياً.

اسم الباحثة: أنوار حماد.

بإشراف الدكتورة: ابتسام دويكات

شكرا لمشاركتك في تعبئة هذه الاستبيان

القسم الأول:

المعلومات الاجتماعية والديموغرافية:

الجنس:

ذكر
انثى

العمر:
أقل من 18
18 - 28
28-38
38 - 48
أكبر من 48

المستوي التعليمي:
أساسي
ثانوي
دبلوم متوسط
ببكالوريوس
غير ذلك

هل لديك عمل؟

نعم
لا

اذا كانت اجابتك على السؤال السابق "نعم"، الرجاء الاجابة على هذا السؤال .
ما طبيعة عملك؟ .....

مكان السكن:

مدينة
قرية
مخيم
عشوائيات بدو

معدل دخل الاسرة الشهري بعملة الشيكل:

1000 - 2000
2000 - 3000
3000 - 4000
4000فأكثر

عدد سنوات الزواج؟ .....

هل سبق لك الانجاب؟

نعم
لا

عدد الاطفال ان وجد: .....

عدد الاجهاض ان وجد: .....

عدد سنوات العقم: .....

نوع العقم:

أولي (لم يسبق انجاب)
ثانوي (أي بعد انجاب اطفال)

سبق وان اجريت لك عملية زراعة اطفال الانابيب
نعم
لا

اذا كان الجواب نعم فكم مرة اجريت لك عملية زراعة اطفال الانابيب؟ .....

اسباب العقم
أسباب تعود للزوجة

أسباب تعود للزوج
أسباب تعود لكلا الزوجين
أسباب غير معروفة

القسم الثاني

هذا القسم مكون من عدد من الأسئلة التي تجيب عن مدى جودة حياة المشارك وهي أسئلة موافق عليها عالميا ومثبتة على أسس علمية لقياس مدى جودة الحياة.

لكل سؤال، لطفا قم (بوضع علامة في المربع)، بحيث أن الإجابة تعكس عن كثب كيف تفكر وتشعر. أربط بين إجابتك و أفكارك و مشاعرك الحالية. وربما تتعلق بعض الأسئلة بحياتك الخاصة، إلا أنها ضرورية لقياس كافة جوانب حياتك على نحو كاف.

تحقق من تلك الإجابة التي تكون أقرب إلى أفكارك ومشاعرك الحالية

كيف تقيم صحتك بشكل عام؟	سيء	لا سيء ولا جيد	جيد	جيد جداً

كيف تقيم صحتك بشكل عام؟	سيء	لا سيء ولا جيد	جيد	جيد جداً

تحقق من تلك الإجابة التي تكون أقرب إلى أفكارك ومشاعرك الحالية

هل أنت راض عن نوعية حياتك؟

غير راضٍ إلى حد كبير غير راض لا راضٍ ولا غير راضٍ راضٍ راضٍ الى حد كبير

هل أنت راض عن الدعم الذي تتلقاه من أصدقائك ومن حولك فيما يتعلق بمشاكل الخصوبة لديك؟

غير راضٍ إلى حد كبير غير راض لا راضٍ ولا غير راضٍ راضٍ راضٍ الى حد كبير

هل أنت راض عن علاقتك الجنسية على الرغم من مشاكل الخصوبة لديك؟

غير راضٍ إلى حد كبير غير راض لا راضٍ ولا غير راضٍ راضٍ راضٍ الى حد كبير

هل أنت راض عن نوعية حياتك؟

غير راضٍ إلى حد كبير غير راض لا راضٍ ولا غير راضٍ راضٍ راضٍ الى حد كبير

هل أنت راض عن الدعم الذي تتلقاه من أصدقائك ومن حولك فيما يتعلق بمشاكل الخصوبة لديك؟

غير راضٍ إلى حد كبير غير راض لا راضٍ ولا غير راضٍ راضٍ راضٍ الى حد كبير

هل أنت راض عن علاقتك الجنسية على الرغم من مشاكل الخصوبة لديك؟

غير راضٍ إلى حد كبير غير راض لا راضٍ ولا غير راضٍ راضٍ راضٍ الى حد كبير

تحقق من تلك الإجابة التي تكون أقرب إلى أفكارك ومشاعرك الحالية

هل يُضعف التفكير بالعقم من انتباهك وتركيزك؟

تماماً لحد كبير باعتدال ليس كثيراً إطلاقاً

هل تعتقد بأنه لا يمكنك المضي قدما لتحقيق أهداف وخطط حياتك الأخرى بسبب مشاكل الخصوبة؟

تماماً لحد كبير باعتدال ليس كثيراً إطلاقاً

هل تشعر بأنك مستنزف الطاقة ومرهق بسبب مشاكل الخصوبة؟

تماماً لحد كبير باعتدال ليس كثيراً إطلاقاً

هل تشعر بأنك قادرا على مواجهة مشاكلك الناجمة عن الخصوبة؟

تماماً لحد كبير باعتدال ليس كثيراً إطلاقاً

هل يُضعف التفكير بالعقم من انتباهك وتركيزك؟

تماماً لحد كبير باعتدال ليس كثيراً إطلاقاً

هل تعتقد بأنه لا يمكنك المضي قدما لتحقيق أهداف وخطط حياتك الأخرى بسبب مشاكل الخصوبة؟

تماماً لحد كبير باعتدال ليس كثيراً إطلاقاً

هل تشعر بأنك مستنزف الطاقة ومرهق بسبب مشاكل الخصوبة؟

تماماً لحد كبير باعتدال ليس كثيراً إطلاقاً

هل تشعر بأنك قادرا على مواجهة مشاكلك الناجمة عن الخصوبة؟

تماماً لحد كبير باعتدال ليس كثيراً إطلاقاً

لكل سؤال، تحقق من تلك الإجابة التي تكون أقرب إلى أفكارك ومشاعرك الحالية

هل تسبب مشاكل الخصوبة لديك الشعور بالغيرة والاستياء؟
دائماً في كثير من الأحيان غالباً نادراً أبداً
هل تعاني من الحزن و/أو الشعور بفقدان شيئا ما حول عدم قدرتك على الحصول على طفل (أو المزيد من الأطفال)
دائماً في كثير من الأحيان غالباً نادراً أبداً
هل تتأرجح مشاعرك ما بين الأمل واليأس بسبب مشاكل الخصوبة؟
دائماً في كثير من الأحيان غالباً نادراً أبداً
هل أنت معزول اجتماعيا بسبب مشاكل الخصوبة؟
دائماً في كثير من الأحيان غالباً نادراً أبداً
هل تتبادل أنت وشريك حياتك فيما بينكما المحبة والحنان بالرغم من مشكلة الخصوبة لديك؟
دائماً في كثير من الأحيان غالباً نادراً أبداً
هل تتدخل مشاكل الخصوبة لديك مع أعمالك اليومية والتزاماتك؟
دائماً في كثير من الأحيان غالباً نادراً أبداً
هل تشعر بعدم الارتياح لحضور المناسبات الاجتماعية مثل الإجازات والاحتفالات بسبب مشاكل الخصوبة لديك؟
دائماً في كثير من الأحيان غالباً نادراً أبداً
هل تشعر بأن بإمكان أسرتك أن تتفهم ما تمر به؟
دائماً في كثير من الأحيان غالباً نادراً أبداً

لكل سؤال، تحقق من تلك الإجابة التي تكون أقرب إلى أفكارك ومشاعرك الحالية

هل عززت مشاكل الخصوبة لديك التزامك لشريك حياتك؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل تشعر بالحزن والاكتئاب حول مشاكل الخصوبة لديك؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل مشاكل الخصوبة لديك تجعلك تشعر بأنك أقل شأن من الناس الذين معهم أطفال؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل يزعجك التعب بسبب مشاكل الخصوبة؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل لمشاكل الخصوبة تأثير سلبي على علاقتك بشريك حياتك؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل تجد صعوبة في التحدث مع شريك حياتك عن مشاعرك المتعلقة بالعقم؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل أنت مرتاح من علاقتك بالرغم من مشاكل الخصوبة لديك؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل تشعر بضغط اجتماعي عليك لأن يكون لديك أطفال (أو المزيد من الأطفال)؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل تؤدي مشاكل الخصوبة لديك إلي شعورك بالغضب؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا
هل تشعر بالألم وعدم الراحة البدنية بسبب مشاكل الخصوبة لديك؟
أقصى قدر كثير جدا قدر معتدل قليلا لا إطلاقا

وحدة قياس العلاج الاختياري

هل بدأت في علاج الخصوبة (وهذا يشمل أي استشارة طبية أو تدخل)؟ إذا كان الرد نعم، يرجى الإجابة على الأسئلة التالية. لكل سؤال، يرجى التأكد (بوضع علامة في المربع) من أن الإجابة تعكس أثر وعن كثب كيف تفكر وتشعر. أربط بين إجابتك وأفكارك ومشاعرك الحالية. ربما تتعلق بعض الأسئلة بحياتك الخاصة، إلا أنها ضرورية لقياس كافة جوانب حياتك على نحو كاف

لكل سؤال، تحقق من تلك الإجابة التي تكون أقرب إلى أفكارك ومشاعرك الحالية

هل يؤثر علاج العقم سلبا على مزاجك؟
دائماً الكثير من الأحيان غالباً نادراً أبداً
هل خدمات الخصوبة الطبية التي تريدها متاحة إليك؟
دائماً الكثير من الأحيان غالباً نادراً أبداً
هل يؤثر علاج العقم سلبا على مزاجك؟
دائماً الكثير من الأحيان غالباً نادراً أبداً
هل خدمات الخصوبة الطبية التي تريدها متاحة إليك؟

دائماً الكثير من الأحيان غالباً نادراً أبداً
لكل سؤال، تحقق من تلك الإجابة التي تكون أقرب إلى أفكارك ومشاعرك الحالية

ما مدى تعقيد عملية التعامل مع إجراءات و/أو تعاطي أدوية العقم الخاص بك؟
أقصى قدر كثير جداً قدر معتدل قليلاً لا إطلاقاً
هل أنت منزعج من جراء تأثير العلاج على نشاطاتك اليومية أو على الأنشطة ذات صلة بالعمل؟
أقصى قدر كثير جداً قدر معتدل قليلاً لا إطلاقاً
هل تشعر بأن أفراد طاقم الخصوبة يتفهمون ما تمر به؟
أقصى قدر كثير جداً قدر معتدل قليلاً لا إطلاقاً
هل أنت منزعج من الأعراض الجانبية البدنية لأدوية وعلاج الخصوبة؟
أقصى قدر كثير جداً قدر معتدل قليلاً لا إطلاقاً
ما مدى تعقيد عملية التعامل مع إجراءات و/أو تعاطي أدوية العقم الخاص بك؟
أقصى قدر كثير جداً قدر معتدل قليلاً لا إطلاقاً
هل أنت منزعج من جراء تأثير العلاج على نشاطاتك اليومية أو على الأنشطة ذات صلة بالعمل؟
أقصى قدر كثير جداً قدر معتدل قليلاً لا إطلاقاً
هل تشعر بأن أفراد طاقم الخصوبة يتفهمون ما تمر به؟
أقصى قدر كثير جداً قدر معتدل قليلاً لا إطلاقاً
هل أنت منزعج من الأعراض الجانبية البدنية لأدوية وعلاج الخصوبة؟

أقصى قدر كثير جداً قدر معتدل قليلاً لا إطلاقاً
لكل سؤال، تحقق من تلك الإجابة التي تكون أقرب إلى أفكارك ومشاعرك الحالية

هل أنت راض عن نوعية الخدمات المتاحة لك لمعالجة الاحتياجات العاطفية الخاصة بك؟
غير راضٍ لحد كبير غير راضٍ لا راض ولا غير راضٍ راضٍ راض جدا

كيف تقيم العملية الجراحية و/أو العلاج الطبي الذي تلقيته؟
غير راضٍ لحد كبير غير راضٍ لا راض ولا غير راضٍ راضٍ راض جدا

كيف تقيم نوعية المعلومات التي تلقيتها حول الأدوية، والعملية الجراحية و/أو العلاج الطبي؟
غير راضٍ لحد كبير غير راضٍ لا راض ولا غير راضٍ راضٍ راض جدا

هل أنت راض عن مدى تفاعلك مع الطاقم الطبي للخصوبة؟

غير راضٍ لحد كبير غير راضٍ لا راض ولا غير راضٍ راضٍ راض جدا

هل أنت راض عن نوعية الخدمات المتاحة لك لمعالجة الاحتياجات العاطفية الخاصة بك؟
غير راضٍ لحد كبير غير راضٍ لا راض ولا غير راضٍ راضٍ راض جدا

كيف تقيم العملية الجراحية و/أو العلاج الطبي الذي تلقيته؟
غير راضٍ لحد كبير غير راضٍ لا راض ولا غير راضٍ راضٍ راض جدا

كيف تقيم نوعية المعلومات التي تلقيتها حول الأدوية، والعملية الجراحية و/أو العلاج الطبي؟
غير راضٍ لحد كبير غير راضٍ لا راض ولا غير راضٍ راضٍ راض جدا

هل أنت راض عن مدى تفاعلك مع الطاقم الطبي للخصوبة؟

غير راضٍ لحد كبير غير راضٍ لا راض ولا غير راضٍ راضٍ راض جدا

Al Quds University
Faculty of Health Professions Jerusalem –Abu Dis

جامعة القدس
كلية المهن الصحية القدس – أبو ديس

Research Ethics Subcommittee of Faculty of Health Professions
Letter of approval

March 19, 2023
Ref. No.: RESC/2023-18

Dear Applicants, (**Dr. Ibtisam Dweikat, Ms. Anwar Hammad**)

Program: **MSc Nursing Department**

The Research Ethics subcommittee of Faculty of Health Professions has recently reviewed your proposal entitled (**The quality of life level of infertile Palestinian women & men in Bethlehem and Ramallah districts: A cross-sectional study**) submitted by (**Dr. Ibtisam Dweikat**). Your proposal is deemed to meet the requirements of research ethics at Al-Quds University, but further assessment is required by the Central Research Ethics Committee of Al-Quds University. We wish you all best for the conduct of the project.

Hussein ALMasri, PhD
Associate Professor of Medical Imaging
Research Ethics Subcommittee Chair
Faculty of Health Professions

Hussein ALMasri

CC: File
CC: Committee members

Appendix2 Ethical Subcommittee Approval Litter

Al-Quds University
Jerusalem
Deanship of Scientific Research

بسم هللا الرحمن الرحيم جامعة القدس
القدس
عمادة البحث العلمي

Research Ethics Committee
Committee's Decision Letter

Date: June 6, 2023

Ref No: 303/REC/2023

Dears Dr. Ibtisam Dweikat, Ms. Anwar Hammad

Thank you for submitting your application for research ethics approval. After reviewing your application entitled "The quality of life level of infertile Palestinian women & men in Bethlehem and Ramallah districts- A cross-sectional study", the Research Ethics Committee confirms that your application is in accordance with the research ethics guidelines at Al-Quds University.

We would appreciate receiving a copy of your final research report/ publication.

Thank you again and wish you a productive research that serves the best interests of your subjects.

PS: This letter will be valid for two years.

Sincerely,

Suheir Ereqat, PhD
Associate Professor of Molecular Biology

Research Ethics Committee Chair

Cc. Prof. Imad Abu Kishek - President
Cc. Members of the committee
Cc. file

Abu-Dies, Jerusalem P.O.Box 20002
Tel-Fax: #970-02-2791293

research@admin.alquds.edu
أبو ديس، القدس ص.ب. 20002 تلفاكس:
2791293-02-970#

Appendix3 Ethical Committee Approval Litter

جامعة القدس
كلية المهن الصحية
دائرة التمريض
القدس-أبوديس

بسم الله الرحمن الرحيم

Al- Quds University
Faculty of Health professions
Nursing Department
Jerusalem-Abu Dies

التاريخ : 25/9/2023

حضرة د. سالم أبو خيزران المحترم

مدير مركز رزان للإخصاب / رام الله – بيت لحم

الموضوع : تسهيل مهمة طالبة ماجستير في جمع بيانات لغرض البحث العلمي

تحية طيبة وبعد ،،،،

يرجى من حضرتكم تسهيل مهمة طالبة الماجستير " أنوار امين موسى حماد" ورقمها الجامعي (22112247)، وهي طالبة ماجستير تمريض الام و الطفل / كلية المهن الصحية / جامعة القدس في جمع بيانات المعلومات اللازمة من الرجال والنساء الذين يتعالجون في مركزكم فرعي رام الله وبيت لحم ، وذلك لغرض اجراء دراسة بحثية لرسالتها الماجستير بعنوان **(مستوى جودة الحياة للنساء والرجال الذين يعانون من مشاكل العقم في منطقتي بيت لحم و رام الله)** باشراف الدكتوره ابتسام دويكات ، في الفترة الواقعه ما بين 30/9/2023 حتى 30/11/2023 .

وتفضلوا بقبول فائق الاحترام والتقدير،،،

منسق برنامج الماجستير/ دائرة التمريض

د . كفاح زين

مرفق: استبانة الدراسة ونموذج الموافقة المستنيرة

Tel : + 02 2799753
Fax : + 02 2791243

تلفون2799753 :
فاكس2791243 :

Appendix4 Razan Center for Fertility Permission Litter

جامعة القدس
كلية المهن الصحية
دائرة التمريض
القدس-أبوديس

بسم الله الرحمن الرحيم

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التاريخ : 25/9/2023

حضرة د. اياد عفانه المحترم

حضرة د. أسامه حواري المحترم

مدراء المركز الاوروبي للإخصاب والمساعدة على الانجاب/ رام الله

الموضوع : تسهيل مهمة طالبة ماجستير في جمع بيانات لغرض البحث العلمي

تحية طيبة وبعد ،،،،

يرجى من حضرتكم تسهيل مهمة طالبة الماجستير " أنوار امين موسى حماد " ورقمها الجامعي (22112247)، وهي طالبة ماجستير تمريض الام و الطفل / كلية المهن الصحية / جامعة القدس في جمع بيانات المعلومات اللازمة من الرجال والنساء الذين يتعالجون في مركزكم فرع رام الله ، وذلك لغرض اجراء دراسة بحثية لرسالتها الماجستير بعنوان **(مستوى جودة الحياة للنساء والرجال الذين يعانون من مشاكل العقم في منطقتي بيت لحم و رام الله)** باشراف الدكتوره ابتسام دويكات ، في الفترة الواقعه ما بين 30/9/2023 حتى 30/11/2023 .

وتفضلوا بقبول فائق الاحترام والتقدير،،،

منسق برنامج الماجستير/ دائرة التمريض

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مستوى جودة ونوعية الحياة عند الأشخاص الذين يعانون من العقم من الرجال والنساء في فلسطين.

الباحثة: أنوار أمين موسى حماد.

المشرفة: د. ابتسام دويكات.

الملخص:

الخلفية. العقم ليس مشكلة إنجابية فحسب، بل هو أيضا قضية مجتمعية وثقافية خاصة في المجتمع الفلسطيني. خلصت الدراسات السابقة إلى أن العقم يؤثر سلبا على الفرد المصاب بالعقم ويؤثر بشدة على نوعية حياة هؤلاء الأشخاص .

الهدف. تقييم نوعية الحياة بين الرجال والنساء الذين يعانون من العقم والذين يتلقون العلاج في مركز رزان ومراكز الخصوبة الأوروبية في بيت لحم ورام الله–الضفة الغربية.

الطريقة. تم استخدام تصميم دراسة مقطعية وصفية لتنفيذ هذه الدراسة باستخدام استبيان. كان السكان المستهدفون يتألفون من الرجال والنساء المصابين بالعقم الذين يسعون لعلاج العقم في مراكز رزان في بيت لحم ورام الله، المركز الفلسطيني الأوروبي للخصوبة في رام الله في الضفة الغربية، فلسطين. تم جمع البيانات باستخدام استبيان، واستخدمت نسخة عربية صالحة وموثوقة من استبيان "FertiQoL" في جمع البيانات. يتضمن الاستبيان قسمين: الخصائص الاجتماعية والديموغرافية والسريرية، واستبيان FertiQoL الفرعي. تم استقبال عينة مناسبة من المشاركين (100 امرأة و100 رجل) في المراكز كما هو مذكور أعلاه ودعوا للمشاركة في الدراسة وفقا لمعايير التضمين ثم قام المشاركون بملء الاستبيان عبر الإنترنت بعد تلقيهم رابط الاستبيان. تم تحليل البيانات باستخدام الحزمة الإحصائية للعلوم الاجتماعية (SPSS) الإصدار (25).

النتائج. تضمنت الدراسة ما مجموعه 200 مشارك، مع توزيع متساو للذكور والاناث. تشير النتائج التي توصلنا إليها إلى أن جودة حياة النساء اللواتي يعانين من العقم أفضل من الرجال الذين يعانون من العقم. بالنسبة للرجال والنساء الذين يعانون من العقم، حصلت الفئة العمرية 18–27 على درجات أقل بكثير مقارنة بالفئات العمرية الأكبر سنا في جميع المقاييس الفرعية (P<0.05) FertiQoL. بالنسبة للنساء اللواتي يعنين العقم، تم العثور على اختلافات كبيرة بين الوضع الوظيفي والمقاييس

الفرعية ل FertiQoL في العقل والجسم، و العلائقية ، والاجتماعية، و FertiQoL الأساسي، وتحمل العلاج ، و FertiQoL الكلي. في المقابل، بالنسبة للرجال الذين يعانون من العقم، كانت الفروق ذات دلالة إحصائية في العلائقية، و FertiQoL الأساسي، وبيئة العلاج، وتحمل العلاج، والمقاييس الفرعية، والنتيجة الإجمالية ل FertiQoL أعلى بكثير بالنسبة للذكور العاملين مقابل العاطلين عن العمل (P=0.037). في الوضع الاقتصادي الشهري، بالنسبة للرجال والنساء الذين يعانون من العقم، كانت القيم أقل من (0.05) في جميع المقاييس الفرعية. بالنسبة لكل من الرجال والنساء المصابين بالعقم، فإن أولئك الذين لديهم حالات حمل ناجحة من قبل سجلوا درجات أعلى بكثير في جميع المقاييس الفرعية (P= 0.001)، باستثناء المقياس الاجتماعي الفرعي للنساء اللواتي يعانين من العقم، لم يكن هناك فرق كبير. بالنسبة للذكور المصابين بالعقم، كانت هناك فروق ذات دلالة إحصائية بين FertiQoL ونوع العقم في المقاييس الفرعية الاجتماعية (P=0.01) و FertiQoL الأساسي(P=0.03)، وبالنسبة للإناث، كان هناك فرق ذو دلالة إحصائية في المقياس الفرعي للعقل والجسم (P=0.01)، والنطاق الفرعي ل FertiQoL الأساسي (P=0.05) فقط. بالنسبة للذكور، كانت هناك فروق ذات دلالة إحصائية بين FertiQoL والخضوع للتخصيب في المختبر في المقاييس الفرعية العلائقية والاجتماعية و FertiQoL الأساسية وبيئة العلاج (P<0.0001) ، والإناث المصابات بالعقم ، في العقل والجسم ، و FertiQoL الأساسي(P<0.0001).

الخلاصة. قيم النساء والرجال الذين يعانون من العقم رضاهم عن جودة الجودة الخاصة بهم على أنها جيدة قام معظم المشاركين بتقييم صحتهم ورضاهم عن عشرات أكثر من 3 من 5، ومع ذلك، كان لدى النساء المصابات بالعقم جودة أفضل من الرجال الذين يعانون من العقم. تصبح جودة الحياة أفضل للرجال والنساء الذين يعانون من العقم من خلال زيادة العمر، ومستوى التعليم العالي، والحصول على وظيفة، والدخل الشهري المرتفع للأسرة، والحمل الناجح السابق. لم يتم إجراء أي ارتباط بين جودة حياة الرجال والنساء المصابين بالعقم ونوع العقم ومدة العقم ومنطقة الإقامة والسبب المشخص للعقم. العقم بين الفلسطينيين هو قضية معقدة ومتعددة العوامل تتأثر بالقضايا الاجتماعية، والمالية، والثقافية، والسياسية .

الكلمات المفتاحية: العقم؛ نوعية الحياة؛ الأزواج؛ الرجال والنساء؛ الجنس؛ فلسطين؛ FertiQoL؛ التلقيح الاصطناعي.