

Quality of Life as Perceived by Infertile Women at Tanta City

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Abstract:

Background: Procreation and the wish to start a family is a basic need for human beings and one of the important pillars of their quality of life. Infertility and its related problems can affect the quality of life of infertile women. **Aim:** To assess the quality of life as perceived by infertile women at Tanta city. **Subjects and method: Design:** A descriptive research design was used. **Setting:** Obstetrics and gynecological department and outpatient clinics at Tanta University Hospital. **Subjects:** A purposive sample of 100 infertile women. **Tools:** Two tools: Tool (I): Structured interview schedule. Tool (II): Fertility specific quality of life questionnaire. **Results:** Nearly one tenth (8%) of the studied infertile women had poor emotional quality of life, (30.0%) had poor mind-body, and poor marital relation quality of life, (6%) had poor social quality of life, (44.0%) infertility management affects their mood negatively very often, and nearly one third of them were dissatisfied with the infertility management and the interaction with the fertility medical staff. Finally, there was a significant correlation between emotional subscale and both body mass index 0.005*, and age in years 0.001*. **Conclusion:** Infertility had fair effect (fair tool score means 50% to <75%) on infertile women at Tanta city. **Recommendations:** The maternity nurse should provide emotional support and conduct health education to infertile women about healthy lifestyle and health promotion regarding different methods of infertility treatment to promote their quality of life.

Keywords: Infertility, Quality of life, infertile women.

Introduction

Infertility is a major life crisis that significantly threatens the individuals' quality of life and their ability to achieve their life goal. ⁽¹⁾ World Health Organization defined infertility as failure to achieve pregnancy after 12 months or more of regular unprotected sexual intercourse. Infertility is a male or/and female reproductive system disease, which refers to the biological inability to contribute to conception, or to a female

who cannot carry a pregnancy to full term. ⁽²⁾ Infertility is an important global health issue affecting millions of men and women of reproductive age worldwide. ⁽³⁾ The rate of infertility is ten to fifteen percent of couples worldwide. ⁽¹⁾ Infertility affects 48 million couples and 186 million individuals worldwide. ⁽⁴⁾ In Egypt, according to a study conducted by the Egyptian Fertility Care Society and sponsored by the World Health Organization (WHO), infertility affects

12% of Egyptian couples. Primary infertility affects 4.3% of these women (never been pregnant), and secondary infertility affects 7.7%.^(5,6)

Infertility is classified as primary, secondary, or unexplained / idiopathic. Primary infertility occurs among couples who have never conceived before, while secondary infertility is failure to conceive following previous pregnancy.⁽²⁾ Unexplained infertility is also called idiopathic infertility, which is failure to conceive among couples with unknown cause of infertility.^(3,6)

Risk factors for infertility include a person's physical health, psychological state, social constraints, level of independence, personal beliefs and characteristics, as well as their relationship to environmental factors. Furthermore, there are many male and female fertility risk factors such as age, tobacco, and alcohol use, being overweight or underweight and lack of exercise.^(7,8)

Causes of infertility can be divided into three thirds; one-third is due to female causes, the second third is due to male causes, and the last third is due to both female and male problems and unexplained causes. Female causes include ovulation problems or disorders, uterine or cervical abnormalities, endometriosis, fallopian tube damage or blockage, primary ovarian insufficiency, pelvic surgery or adhesions, cancer and its treatment, hormonal imbalance, age, and obesity.⁽⁹⁾

Male causes include alteration in sperm production, concentration, function, and/or motility and/or morphology, problems with the transportation of sperm, over exposure to certain

environmental factors, and damage related cancer and its treatment. The unexplained causes of infertility are said to be when special investigations didn't prove abnormality in the reproductive systems of both couples.^(10,11)

Complications and impact of infertility include stress, fear, anxiety, depression, financial hardships, guilt feeling, and loss of self-esteem. They may also complain about many physical and social problems. A large number of them become unsupported; they hide and avoid sharing fertility problems with their families and relatives.⁽⁸⁾ They may lose social status and important relationships, health or acceptable body image, control, security and someone or something they value. Thus, infertility and its treatment can exert a negative multidimensional effect on women's quality of life (QOL).⁽¹²⁾

Quality of life is the individuals' perception of their position in life in the context of culture and value systems of the community, as well as in relation to their goals, expectations, standards, and concerns. World Health Organization (WHO) Quality of life is a subjective, multidimensional concept that includes emotional, physical, environmental, and social well-being.⁽¹³⁾ Quality of life serves as a means to promote health and prevent illness, and as a reference to individuals or society domains of life that reflects the general sense of happiness, sadness and satisfaction with life and environment.⁽¹⁴⁾

Nurses are the first line healthcare providers who come in contact with infertile couples and are responsible for providing expertise assessment and holistic care for infertile women. Nurses are crucial part of the multi-professional

healthcare team who can provide compassionate management as fertility investigations and treatment, coordination, education; research, as well as informed and evidence based clinical practice of high standard care.⁽¹⁵⁾ Therefore, it's very important for nurses to assess quality of life as perceived by infertile women at Tanta city to promote their health and quality of life.

Significance of the study

Infertility and its related problems are frustrating for women and can significantly affect their quality of life⁽¹⁶⁾. Evaluation of QOL of infertile women can help them to gain special care and support they need in their life⁽¹⁷⁾ So, this study was conducted to assess quality of life as perceived by infertile women in Tanta city.

Aim of the study

The aim of this study was to assess quality of life as perceived by infertile women at Tanta city.

Research question:

What are the levels of quality of life as perceived by infertile women at Tanta city?

Subjects and method

Study Design:

A descriptive research design was used.

Setting:

The study was carried out at Obstetrics and Gynecological department and outpatient clinics of Tanta University Hospital.

Subjects:

A purposive sample of 100 infertile women was selected from previously mentioned study settings according to the following inclusion criteria:

- Age range between 20-45 years.

- Have menstrual cycle (because the woman aged 45 years may be menopausal woman).

- Married for more than 12 months and have regular unprotected sexual intercourse.

- Free from any medical or psychological problems.

- Have primary or secondary infertility.

- Women undergoing to infertility management.

- Willing to participate in the study.

Tools of data collection:

To achieve the aim of this study, the following two tools were used for data collection.

Tool (I): Structured interview schedule: This tool was developed by the researcher after review of relevant literatures and used to collect basic data about the study subjects. It included three parts as follows:

Part (1): Biosocial-demographic characteristics of the study subjects

This part has assessed the biosocial-demographic data of the women such as age, level of educational level, occupation, family income, residence, type of family, height, weight, and body mass index.

Part (2): Family history

This part assessed the family history such as presence of hereditary diseases or genetic disorders for both the women and men.

Part (3): Obstetrics and Gynecological history it included:

-Menstrual history: such as age at menarche, number of soaked pads that changed daily, duration, interval, and rhythm of the menstrual cycle.

-Reproductive history: such as gravidity, parity, number of abortions,

number of still births, number of living children, mode and place of past deliveries and previous complications.

-Infertility history: such as duration, causes, investigations, treatment and previous medical or surgical interventions, of infertility.

Tool (II): Fertility specific quality of life questionnaire (FertiQOL):

This tool was adapted from Boivin (2009) ^(8,18) and used by the researcher to assess the infertile woman quality of life in the present study. It included 36 questions reported by the women to assess their perception that cover two parts: (1) the Core, (2) the Management parts and two additional items.

Part (1): Core-Fertility quality of life questionnaire: This part contained 24 questions categorized into **four subscales**, including Emotional, Mind/Body, Marital Relation, and social subscales.

1- Emotional subscale included (6) questions that showed the impact of negative emotions on the infertile woman's quality of life such as jealousy, resentment, sadness, and depression.

2- Mind-Body subscale included (6) questions that showed the impact of infertility on physical health such as fatigue, pain, cognition such as concentration and on behavior such as disrupted daily activities, delayed life plans.

3- Marital Relation subscale included (6) question that showed the impact of infertility on sexuality, communication, and marital relationship.

4- Social subscale included (6) questions that showed the extent to which social interactions have been affected by

infertility such as social inclusion, expectations, stigma, and support.

Part (2): Management Fertility quality of life questionnaire

This part contained 10 questions categorized into **two subscales** including: management environment subscales and management tolerability subscales.

1-Management Environment subscale included (6) questions that showed the extent to which the accessibility and quality of the treatment has impacted the quality of life.

2-Management Tolerability subscale included (4) questions that showed the extent to which the infertile woman had experienced mental and physical symptoms as a result of the fertility treatment and their impact on the daily life.

Two additional items are marked as (A and B) on the FertiQoL questionnaire. They capture an overall evaluation of physical health and satisfaction with quality of life.

Scoring system of fertility quality of life questionnaire:

Fertility quality of life consisted of 36 items that yield six subscales and three total scores rated according to 5 types of response scales as follow:

1. Evaluation: Very poor (0), poor (1), neither poor nor good (2), good (3), very good (4) regarding question (A)

2. Satisfaction: Very dissatisfied (0), dissatisfied (1), neither satisfied nor dissatisfied (2), satisfied (3), very satisfied (4) regarding questions number (B-5-6) and questions number (T7-T8-T9-T10) in management fertility quality of life part.

3. Frequency: Always (4), very often (3), quite often (2), seldom (1), never (0)

regarding questions number(7-8-9-10-11R-12-13-14R) in the Core Fertility quality of life part and questions number(T1-T2R) in management fertility quality of life part.

4. Intensity: An extreme amount (4), very much (3), a moderate amount (2), a little (1), not at all (0) regarding questions number (15R-16-17-18-19-20-21R-22-23-24) in the Core Ferti Qol part and questions number (T3-T4-T5R-T6) in the management fertility quality of life part.

5. Capacity: Completely (4), a great deal (3), moderately (2), not much (1), not at all (0) regarding questions number (1-2-3-4R) in the Core part.

Subscales and total management fertility quality of life part.

Scoring system:

Score was computed and transformed to achieve a range of 0% to 100%, where 0% indicates the poorest and 100% indicates the best quality of life as follows:

-Poor quality of life less than 50%.

-Fair quality of life: 50%to less than 75%.

-Good quality of life: 75% to 100%.

Method:

The study was implemented according to the following steps-

1. An official letter clarifying the purpose of the study was obtained from the Faculty of Nursing Tanta University and submitted to the responsible authorities of the selected study settings to obtain their approval and cooperation for carrying out the study.
2. Ethical and legal considerations was considered all over the study as the following:

- a) The approval of ethical committee of Faculty of Nursing University was obtained.
- b) The researcher introduced herself to each woman and explained the aim of the study, in order to obtain their acceptance and cooperation.
- c) Then, the researcher invited the women to participate in the study and obtained their informed consent.
- d) The right to abstain or terminate participation at any time is respected.
- e) The nature of the study didn't cause any harm or pain for the entire sample.
- f) Assuring the women about the privacy, confidentiality and that the collected data is used only for the purpose of the study.

3. Two tools were used to collect the present study data. Tool (I): The structured interview schedule was developed by the researcher after reviewing relevant literatures and used to collect basic data about the study subjects. It included three parts: Part I: Bio-socio demographic data; Part II: Family history and Part III: Obstetric and gynecological history. Tool (II) Fertility specific quality of life questionnaire. This tool was adapted from the Arabic version of (Ferti QOL) questionnaire Boivin (2009) and used to assess the infertile women's quality of life. The study tools (I) and (II) were tested for construct and content validity by a jury of 5 experts in the field of maternal and neonatal health nursing. Reliability of tools was tested using the appropriate statistical test analysis.

4. A pilot study was carried out on 10% (10 infertile women) of the total sample from the previously mentioned study settings before the actual data collection. Data obtained from the pilot study was included in the current study sample because there were no major changes in the tools. The purposes of pilot study were to ascertain the feasibility and applicability of the developed tools and to detect any problems peculiar to clarity of the statements that might interfere with the process of data collection.

5. Data was collected through an individual structured interview using the previously mentioned study tools. The tools were applied for each woman at the previously mentioned study settings in the morning shifts from 9:00 a.m. to 12.00 p.m., three days per week, until the predetermined sample size was collected. The tools needed approximately 30 minutes to be fulfilled by the researcher from the infertile women.

6. Data collection was carried out over a period of six months starting from the beginning of October 2021 to the end of March 2022.

Statistical analysis:

The collected data were organized, tabulated, and statistically analyzed using SPSS version 19 (Statistical Package for Social Studies) created by IBM, Illinois, Chicago, USA. For numerical values the range mean, and standard deviations were calculated. The differences between the two mean values were used using student's t test. Differences of mean values in relation to family income and other variables were tested using Kruskal-Wallis Test as data were not normally distributed due to small sample

size of subgroups. For categorical variables the number and percentage were calculated. The correlation between two variables was calculated using Pearson's or Spearman's correlation coefficient based on type of variables. The level of significant was adopted at $p < 0.05$.

Results

Table (1): Shows bio-socio demographic characteristics and family history of the studied infertile women. The results revealed that nearly two fifths (39.0%) of the studied infertile women aged >25-30 years also, mean age of these studied women was 27.45 ± 4.79 . Concerning the age at marriage more than two fifths of them (44.0%) were married at age between ($\geq 20-24$) years old with a mean 23.33 ± 4.52 . Regarding educational level nearly one half (48.0%) of the studied infertile women had university education and the minority (9%) of them can read and write. As regards to women's occupation less than two thirds (63%) of them were housewives, and almost two thirds (66.0%) of them had enough family income. It was also noticed that more than one half (55%) of the studied infertile women lived in rural area. Furthermore, the majority of the studied infertile women (95.0%) had nuclear families. As regards the mean duration of marriage in years it was (4.15 ± 1.93) . The table also demonstrated that 25.0% of the infertile couples had blood relation (consanguinity) and nearly one third (31.0%) of the women had hereditary diseases in their family. The table also illustrates that the mean body mass index of the studied women was (31.36 ± 6.00) .

Table (2): Reports the obstetric and gynecological history of the studied

infertile women. The results of the present study revealed that the mean age of menarche of studied infertile women was (12.64 ± 1.19) and the mean duration of menstrual cycle among them was (35.10 ± 10.06) . The table demonstrates that the mean interval between menstruation was (34.82 ± 10.11) . It was also noticed that the duration of menstruation among more than one half (53.0%) of the studied infertile women was (5-7) days; with a moderate amount of menstruation among nearly two thirds (62.0%) of them. This table also demonstrates that (17.0%) of studied infertile women had previous pregnancy, (8.0%) of them had previous deliveries and (9.0%) had previous abortion. The table also reveals that one quarter (25.0%) of women who had past deliveries had vaginal deliveries and three quarter (75.0%) had cesarean deliveries. The places of deliveries of these women were (62.5%) private hospital, (25.0%) were governmental hospital, and (12.5%) had home deliveries. It was noticed that majority (87.5%) of studied infertile women had no complications during previous deliveries. The table also demonstrated that less than one third (32.0%) of them had a previous genital fungal infection. In addition, nearly two fifths (38.0%) of studied infertile women done previous operations and nearly two thirds (62.0%) of them never done previous operations.

Table (3): Demonstrates infertility history and previous intervention of the studied infertile women. It revealed that the mean duration of infertility among studied infertile women was (3.98 ± 1.73) , nearly three quarter (73.0%) of them had polycystic ovarian syndrome and nearly

one quarter (24.0%) had tubal obstruction. Concerning the previous investigations this table shows that (91.0%, 81.0%, 48.0%, 23.0%, 19.0%) respectively of the studied infertile women had ultrasound, folliculo-metry, hystro salpingography, hystroscope, thyroid hormone evaluation and only (1.0%) respectively of them made MRI. Also, the table illustrated that (88.0%, 75.0%, 2.0%, 1.0%, 1.0%) had hysteroscope, induction of ovulation, protagalndines, antifungal treatment and hormonal therapy respectively. The table displays that more than one quarter (27.0%) of the studied infertile women had in vitro fertilization (IVF) and (3.0%) of them made intrauterine insemination.

Figure (1): Reveals distribution of the studied infertile women by their emotional quality of life. It is obvious that the majority (91.0%) of them had fair emotional quality of life, nearly one tenth (8%) had poor emotional quality of life, while only (1.0%) had good emotional quality of life.

Figure (2): Illustrates the distribution of studied infertile women by their mind-body quality of life. It reports that slightly more than two thirds (67.0%) of the studied infertile women had fair mind-body quality of life, nearly one third (30.0%) had poor mind-body quality of life, and only (3.0%) had good mind-body quality of life.

Figure (3): Shows the distribution of the studied infertile women by their marital relation quality of life. It is evident that slightly more than two thirds (67%) of them had fair marital relation quality of life, nearly one third (30.0%) had poor marital relation quality of life, and only

(3%) had good marital relation quality of life.

Figure (4): Displays the distribution of the studied infertile women by their social quality of life. It is evident that the majority (90%) of them had fair social quality of life, (6%) had poor social quality of life, and only (4%) had good social quality of life.

Table (4): Shows distribution of the studied infertile women by their management quality of life. The results revealed that slightly more than two fifths (44.0%) of them infertility management affects the mood negatively very often, slightly more than one half (51.0%) said that fertility medical services were available to them very often, slightly more than two fifths (43.0%) had moderate amount complications in dealing with the procedure and/or administration of medication for infertility treatments, most three fifths (60.0%) were very much bothered by the effect of management on their daily or work related activities, and slightly more than one half (53.0%) felt that the infertility staff understand what they were going through to a moderate amount. Table (4) also clarifies that slightly less than two thirds (64.0%) of the studied infertile women were very much bothered by medications and management physical side effects, slightly more than three quarters (76.0%) were satisfied with the quality of services available to them to address their emotional needs, slightly more than three fifths (63.0%) were satisfied with the surgery and/or medication they received, slightly more than two thirds (69.0%) were satisfied with the quality of information they

received about medication, surgery and/or management they received, and more than two fifths (43.0%) were neither satisfied nor dissatisfied with their interaction with the fertility medical staff.

Table (5): Illustrates distribution of the studied infertile women in relation to overall evaluation of their physical health and satisfaction with quality of life. The results revealed that three-fifths (60.0%) of them had good health and nearly one tenth had very good health. The table also demonstrated that slightly more than one half (51.0%) of the studied infertile women were satisfied with their quality of life and nearly one third of them were neither satisfied nor dissatisfied.

Table (6): Illustrates the correlation between fertility quality of life subscale and bio-socio demographic characteristics of the studied infertile women. It shows that there is no significant correlation between age at marriage, duration of marriage, educational level, and fertility quality of life subscales ($p>0.05$); except there was a significant correlation between emotional subscale and both body mass index 0.005*, and age in years 0.001*. The table also shows that there was no significant correlation between core-fertility quality of life subscales and age of menarche of the studied infertile women ($p>0.05$).

Table (1): Bio-socio demographic characteristics and family history of the studied infertile women (n=100)

Bio-socio demographic characteristics	Number (n=100)	%
Age in years:		
20-25	37	37.0
>25-30	39	39.0
>30-45	24	24.0
Mean±SD	27.45±4.79	
Age at marriage:		
<20	21	21.0
≥20-24	44	44.0
>24-29	21	21.0
>29	14	14.0
Mean±SD	23.33±4.52	
Educational level:		
Read and write	9	9.0
Primary	7	7.0
Secondary	36	36.0
University	48	48.0
Occupation:		
Housewife	63	63.0
Working	37	37.0
Family monthly income:		
Not enough	22	22.0
Just enough	66	66.0
Enough and saving	12	12.0
Residence:		
Rural	55	55.0
Urban	45	45.0
Family type:		
Nuclear	95	95.0
Extended	5	5.0
Crowding index		
<1	75	75.0
1	20	20.0
>1	5	5.0
Duration of marriage in years (Mean±SD)	4.15±1.93	
Hereditary diseases and genetic disorders	31	31.0
Consanguinity	25	25.0
Body mass index:		
<25.0	18	18.0
25.0-<27.5	8	8.0
27.5-<30.0	24	24.0
30.0-<32.5	18	18.0
32.0-<35.0	17	17.0
35.0-<37.5	14	14.0
37.5-<40.0	4	4.0
>40.0	5	5.0
Range	20-67	
Mean ±SD	31.36 ±6.00	

Table (2): Obstetrics and gynecological history of the studied infertile women (n=100)

Obstetrics and Gynecological history of the studied infertile women	Number (n=100)	%
Menstrual history		
Age at menarche (Mean±SD)	12.64±1.19	
Duration of menstrual cycle (Mean±SD)	35.10 ±10.06	
Interval between menstruation (Mean±SD)	34.82±10.11	
Rhythm of menstruation		
Regular	56	56.0
Irregular	44	44
Duration of menstruation		
<5 days	47	47.0
5-7 days	53	53.0
Amount of menstruation		
Profuse(more than five pads)	2	2.0
Moderate(3-5pads)	62	62.0
Mild (one pad)	36	36.0
Reproductive history		
	N	%
Number of women who had previous pregnancy	17	17.0
Number of women who had previous deliveries	8	8.0
Number of women who had previous abortion	9	9.0
Number of women who had previous still birth	5	5.0
Number of women who had living children	3	3.0
Mode of past deliveries among women who had previous deliveries:		
Vaginal	2	25.0
Cesarean	6	75.0
Place of past deliveries among women who had previous deliveries:		
Governmental hospitals	2	25.0
Private hospitals	5	62.5
Home	1	12.5
complications during past deliveries among women who had past deliveries:		
Yes	1	12.5
No	7	87.5
Gynecological history		
Previous gynecological infection		
Yes	32	32.0
No	68	68.0
Previous operations		
Yes	38	38.0
No	62	62.0

Table (3): Infertility history and previous intervention among the studied infertile women (n=100)

Infertility history and previous intervention among the studied infertile women	Number (n=100)	%
Infertility history		
Duration of infertility (mean \pm SD)	3.98 \pm 1.73	
Causes of infertility: *		
Polycystic ovary	73	73.0
Endometrium hypoplasia	5	5.0
Tubal obstruction	24	24.0
Salpingitis	4	4.0
Uterine fibroid	1	1.0
Uterine adhesions	3	3.0
Unknown cause infertility	6	6.0
Previous investigations: *		
Ultrasound	91	91.0
Folliculo-metry	81	81.0
Hystrosalpingography	48	48.0
Hystroscope	23	23.0
Thyroid hormone evaluation	19	19.0
MRI	1	1.0
Treatment of infertility: *		
Hysteroscope	88	88.0
Induction of ovulation	75	75.0
Protagalndines	2	2.0
Antifungal treatment	1	1.0
Hormonal therapy	1	1.0
Previous interventions of infertility: *		
In vitro fertilization(IVF)	27	27.0
Intrauterine Insemination(IUI)	3	3.0

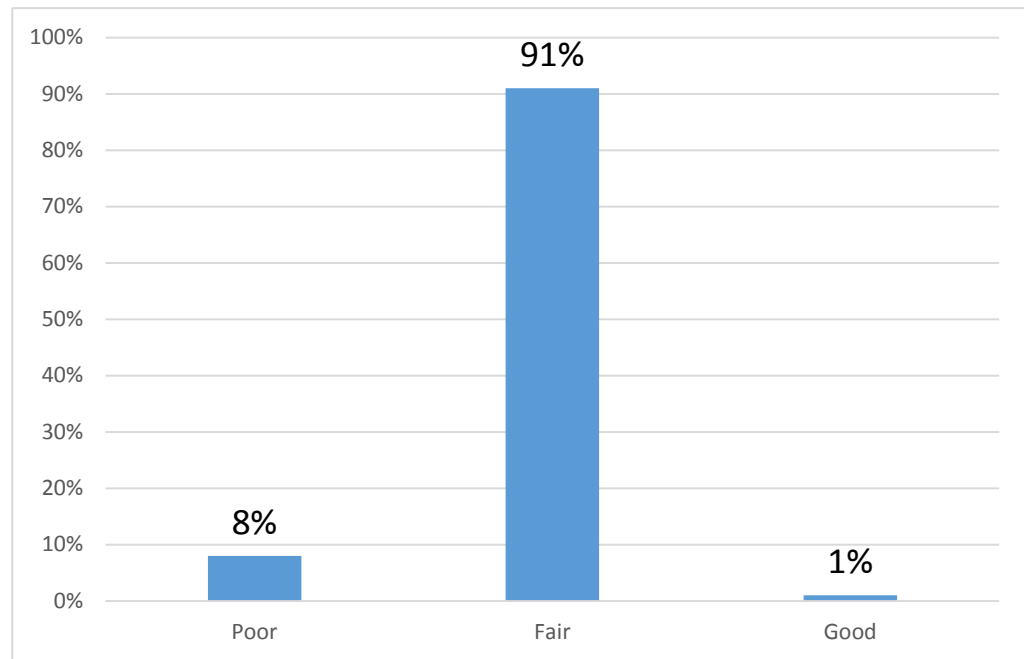


Figure (1): Distribution of the studied infertile women by their emotional quality of life (n=100)

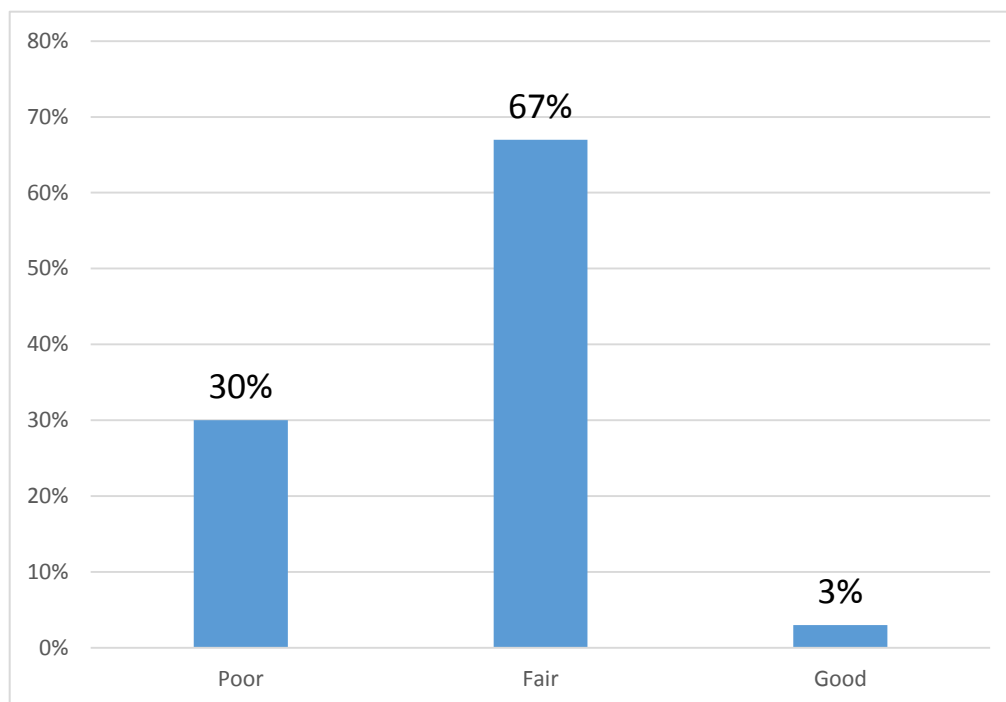


Figure (2): Distribution of the studied infertile women by their mind-body quality of life (n=100)

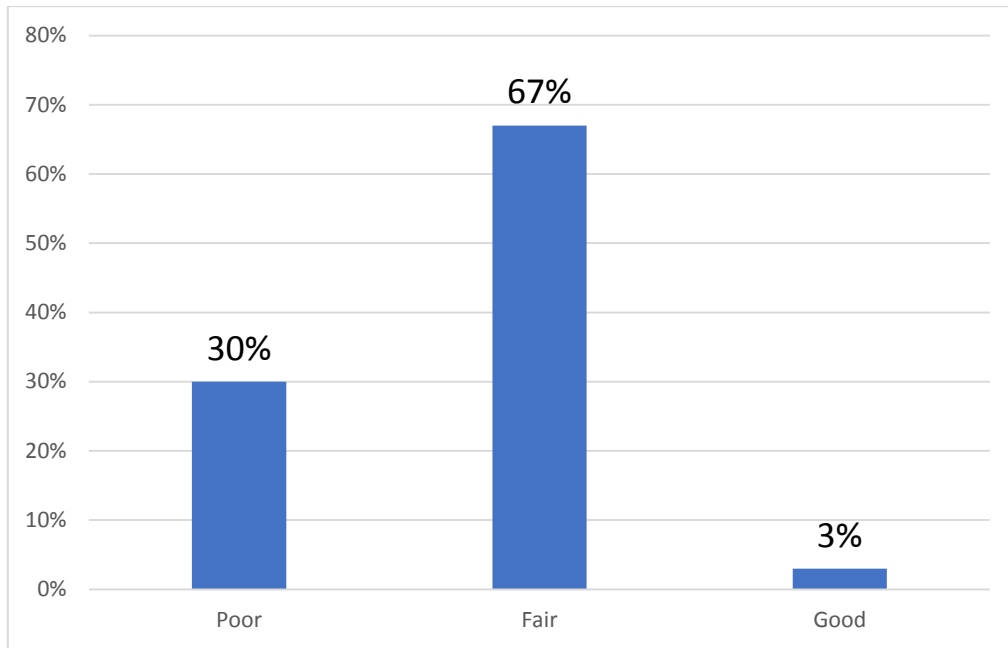


Figure (3): Distribution of the studied infertile women by their marital relation quality of life (n=100)

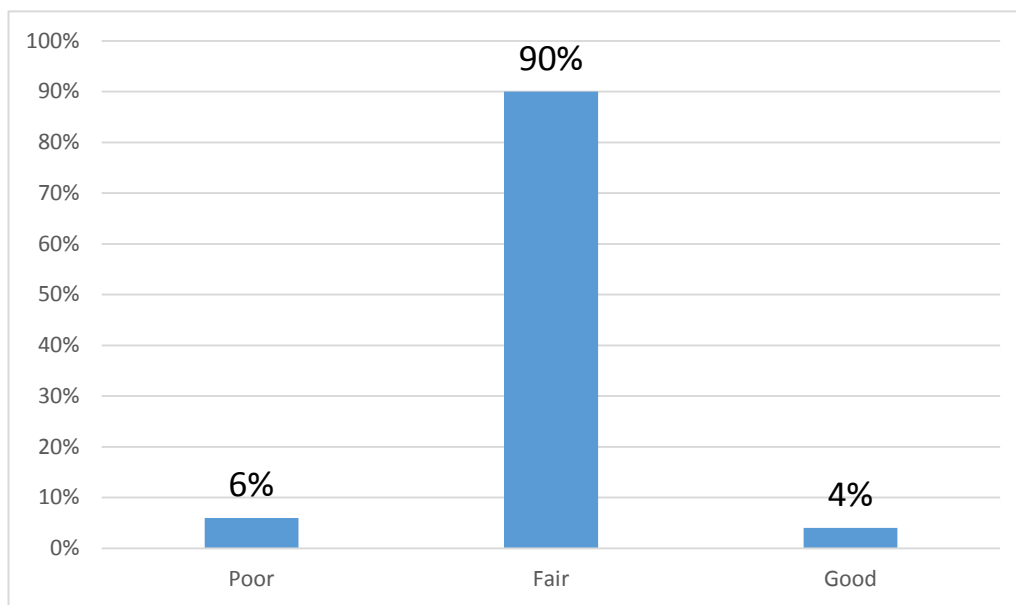


Figure (4): Distribution of the studied infertile women by their social quality of life (n=100)

Table (4): Distribution of the studied infertile women by their management Fertility quality of life (n=100).

Management Tolerability and Environment	Always		Very Often		Quite Often		Seldom		Never	
	No	%	No	%	No	%	No	%	No	%
M1-Does infertility management negatively affects your mood?	9	9.0	44	44.0	35	35.0	11	11.0	1	1.0
M2-Are the infertility medical services you would like available to you?	39	39.0	51	51.0	10	10.0	0	0.0	0	0.0
	An Extreme Amount		Very much		A Moderate Amount		A little		Not At All	
M3-How complicated is dealing with the procedure and/ or administration of medication for your infertility treatments)?	0	0.0	20	20.0	43	43.0	35	35.0	2	2.0
M4-Are you bothered by the effect of management on your daily or work related activities?	3	3.0	60	60.0	24	24.0	11	11.0	2	2.0
M5-Do you feel the infertility staff understand what you are going through?	1	1.0	35	35.0	53	53.0	11	11.0	2	2.0
M6- Are you bothered by the physical side effects of infertility medications and management?	11	11.0	64	64.0	17	17.0	8	8.0	0	0.0
	Very dissatisfied		Dissatisfied		Neither satisfied Nor Dissatisfied		Satisfied		Very satisfied	
M7-Are you satisfied with the quality of services available to you to address your emotional needs?	0	0.0	2	2.0	22	22.0	76	76.0	0	0.0
	Very dissatisfied		Dissatisfied		Neither satisfied Nor Dissatisfied		Satisfied		Very Satisfied	
M8-How would you rate the surgery and/or medical treatment(s) you have received?	4	4.0	2	2.0	31	31.0	63	63.0	0	0.0
M9- How would you rate the quality of information you received about medication, surgery and / or management?	0	0.0	4	4.0	27	27.0	69	69.0	0	0.0
M10-Are you satisfied with your interactions with infertility medical staff?	0	0.0	20	20.0	43	43.0	35	35.0	2	2.0

Table (5): Distribution of the studied infertile women in relation to overall evaluation of physical health and satisfaction with quality of life (n=100)

Overall evaluation of physical health	Very poor		Poor		Neither good not poor		Good		Very good	
	No	%	No	%	No	%	No	%	No	%
A-How would you rate you're your health?	0	0.0	4	4.0	27	27.0	60	60.0	9	9.0
Overall evaluation of satisfaction subscale	Very dissatisfied		Dissatisfied		Neither satisfied nor dissatisfied		Satisfied		Very satisfied	
B-Are you satisfied with your quality of life?	6	6.0	13	13.0	30	30.0	51	51.0	0	0.0

Table (6): Correlation between fertility quality of life subscale and bio-socio-demographic characteristics of the studied infertile women (n=100)

Variables	Emotional subscale		Mind-Body subscale		Marital relations		Social subscale		Treatment	
	r/rho	P	r/rho	P	r/rho	P	r/rho	P	r/rho	P
Age at marriage	0.018	0.855	-0.012	0.908	-0.005	0.957	-0.034	0.735	0.096	0.343
Duration of marriage	-0.011	0.911	0.098	0.330	-0.036	0.720	0.111	0.270	-0.012	0.908
Educational level	0.087	0.388	0.025	0.802	-0.027	0.788	0.033	0.748	0.112	0.267
Body mass index	0.279	0.005*	0.038	0.710	0.013	0.895	0.021	0.834	0.027	0.790
Age in years	0.321	0.001*	0.109	0.282	-0.007	0.942	0.080	0.431	0.089	0.381
Age at menarche	-0.060	0.551	0.109	0.280	0.137	0.173	-0.055	0.586	0.120	0.236

Significance ($p < 0.05$).

Discussion

Infertility is considered as a global concern which can affect quality of life of both genders, especially women, ^(19,20) to assess the quality of life as perceived by infertile women at Tanta City.

The result of the present study clarifies that regarding the bio-socio demographic characteristics and family history of the studied infertile women, nearly two fifths aged more than twenty-five to thirty years

old, with mean age (27.45 ± 4.79), and the mean duration of marriage was (4.15 ± 1.93). These findings supported by **Almowafy et al., (2021)** ⁽²¹⁾ who studied the emotional dimensions of quality of life and related factors for a sample of Egyptian infertile female attending the International Islamic Center and revealed that the mean age participants was (28.99 ± 3.99) and the mean duration of marriage was (6.6 ± 0.5) years. From the researcher's point of view, the

similarity between the previous study and findings of the present study may stem from age more than 25 to 30 years old is more preferable for seeking medical treatment.

Regarding women's occupation, it was found that more than one third of the studied infertile women were worked women. The study findings come in agreement with **Namdar et al. (2017)** ⁽²²⁾, who studied quality of life and general health of infertile women, they mentioned that more than one third of studied women were employed. The findings of the present study disagree with a study carried out by **Mikhael et al., (2022)**.⁽²³⁾ They studied a preliminary study of stress and infertility among Egyptian female sample in Benha City. They reported that more than one half of women were employed. From the researcher's point of view, the difference may be due to differences in culture.

Concerning women's education, the current study illustrated that nearly half of the studied infertile women had university education. This result agrees with a study carried by **Biomy et al., (2023)** ⁽³⁾, they studied quality of life among infertile women in Benha City, they revealed that more than two fifths of the studied women had university education. This finding of the present study disagrees with a study carried by **Mohamed et al., (2019)** ⁽⁸⁾, they assessed the relationship between infertility of women and their quality of life at Alexandria university, they found that more than one third of studied infertile women were illiterate. From the researcher point of view the difference between the result of previous study and the present study was due to their different culture.

Regarding family monthly income the present study reported that nearly two thirds of the studied women had enough family

monthly income. This result agreed with **Moridi et al., (2019)** ⁽²⁴⁾ who studied etiology and risk factors associated with infertility, in the southern region of Iran, (n=250), and they declared that more than four fifth of women had enough monthly income.

Concerning residence of the studied infertile women the present study revealed that more than one half of the studied infertile women lived in rural area. This finding agrees with the study done by **Biomy et al., (2023)** ⁽³⁾, they showed that more than two thirds of women lived in rural area. These results disagree with a study carried by **Wdowiak et al., (2021)** ⁽²⁵⁾, they studied assessment of quality of life of infertility treated women in Poland, they revealed that majority of studied women were from urban area.

Regarding mean duration of marriage, the present study demonstrated that mean duration of marriage was 4.15 ± 1.93 . This result come in line with study done by **Almowafy et al., (2021)** ⁽²¹⁾, they demonstrated that mean duration of marriage was 7 ± 2.7 .

Concerning menstrual history of the studied infertile women, the results of the present study showed that the mean age of menarche of the studied infertile women was (12.64 ± 1.19) . Comparable with the current study **Mahtab et al. (2020)** ⁽²⁶⁾, they established a follow up study on fertility and menstrual pattern in infertile patients after laparoscopy in a tertiary care hospital in Bangladesh, who enrolled 303 infertile women with mean age at menarche was (29.86 ± 4.6) years.

The findings of the present study reported that more than one half of the studied infertile women had regular menstruation. Similarly, a study conducted by **Mahtab et**

al. (2020) ⁽²⁶⁾, revealed that more than half of studied women had regular menstruation. Regarding the reproductive history of the studied infertile women, the present study clarified that less than one fifth of the studied infertile women had previous pregnancy. This finding of the present study disagrees with **Dourou et al. (2023)** ⁽⁴⁾, who assessed quality of life among couples with a fertility related diagnosis, they declared that less than one half of participants had been pregnant in the past. Similarly, a study established by **Keren et al., (2015)** ⁽²⁷⁾ who studied perception of infertility and quality of life among infertile women treated with IVF, they revealed that more than two thirds of women were childless and had primary infertility.

Concerning the cause of infertility of the studied infertile women the results revealed that nearly three quarters of the studied infertile women had polycystic ovarian syndrome and nearly quarter of them had tubal obstruction. These findings is supported by **Mohamed et al. (2019)** ⁽⁸⁾, who revealed that more than one half of participants had polycystic ovary syndrome. The similarity between the previous study and the present study may be stem from most of studied women had problems in their ovaries and this is the main cause of their infertility.

Regarding treatment of infertility the results of the present study clarified that three quarters of them had induction of ovulation and more than one quarter of them did vitro fertilization (IVF). These findings were in line with **Dar et al. (2022)** ⁽²⁸⁾, who implied that psychological psychiatric morbidity and quality of life in infertile females. They reported that more than one third of studied women had drug therapy and then IVF surgery. On the other hand, these findings

are inconsistent with **Bakhtiyar et al. (2019)** ⁽¹⁹⁾, who studied an investigation of the effect of infertility on women, s quality of life. They found that the most frequent method of treatment, nearly one half were IVF and more than two fifth had medical were therapy.

Regarding the management quality of life of the studied infertile women, the results revealed that infertility management affects the mood negatively very often slightly more than two fifths of them , slightly more than one half said that fertility medical services were available to them very often, slightly more than two fifths had moderate amount complications in dealing with the procedure and/or administration of medication for infertility treatments, most three fifths were very much bothered by the effect of management on their daily work related activities, and slightly more than one half felt that the infertility staff understand what they were going through to a moderate amount. The studied infertile women also clarified that slightly less than two thirds were very much bothered by medications and management physical side effects, slightly more than three quarters satisfied with the quality of services available to them to address their emotional needs, slightly more than three fifths were satisfied with the surgery and/or medication they received, slightly more than two thirds were satisfied with the quality of information they received about medication, surgery and/or management they received, and more than two fifths were neither satisfied nor dissatisfied with their interaction with the fertility medical staff.

In this regard **Shahnaz et al., (2016)** ⁽²⁹⁾ revealed that nursing is the process of assessing the patient's comfort needs,

developing and implementing appropriate nursing care plans, and evaluating the patient's comfort after the care plans have been carried out. The comfort theory in nursing includes four general contexts that encompass all aspects of patient comfort: physical, psycho-spiritual, environmental, and social. Comfort exists in three forms: relief, ease, and transcendence. If specific comfort needs of a patient are met, the patient experiences comfort in the sense of relief, ease addresses comfort in a state of contentment. Transcendence is a state of comfort in which patients are able to rise above their challenges.

As regard to the overall evaluation of the studied infertile women physical health and satisfaction with quality of life. The current findings showed that three fifths of the studied infertile women had good physical health; nearly one fifth was dissatisfied and very dissatisfied, and nearly one third was neither satisfied nor dissatisfied with their quality of life. These results are supported with the Indian research done by **Ganth et al., (2013)**⁽³⁰⁾ who assessed the role of infertility, emotional intelligence, and resilience on marital satisfaction among Indian couples. They reported that more than one half of the study participants had good health, and one third was neither satisfied nor dissatisfied with their quality of life.

In addition, the findings of the present study are in line with a study done by **Royani et al., (2019)**⁽³¹⁾ who assessed predictors of quality of life in infertile couples and clarified that more than one half was satisfied with their quality of life, and one third was neither satisfied nor dissatisfied with their quality of life. Similarly, a study conducted by **Amiri et al., (2017)**⁽³²⁾ regarding quality of life

among fertile and infertile women. They reported that more than one half of the studied women were neither satisfied nor dissatisfied with their quality of life.

Regarding the distribution of studied infertile women with their quality of life. The present study declared that infertility affected all QOL domains, but mind-body domain and marital relation domains were affected more than emotional and social domain. The present results disagree with a study done by **Mohamed et al. (2019)**⁽⁸⁾, who assessed quality of life of infertile couples at Mansoura University Hospital, they demonstrated that infertility affected all QOL domains, but the most affected domain was emotional domain among infertile females. The findings also disagree with the study done by **Dar et al. (2022)**⁽²⁸⁾, who reported that infertility quality of life score for the infertile group showed that the lowest score was in the emotional domain.

Concerning the quality of life domains of the studied infertile women the present study revealed that the majority of the studied infertile women had fair emotional quality of life and nearly one tenth had poor emotional quality of life. Slightly more than two thirds of them had fair mind-body quality of life; nearly one third had poor mind-body quality of life. The results of the present study agree with the finding of **Mohamed et al. (2019)**⁽⁸⁾, they revealed that more than quarter of studied infertile women had poor emotional quality of life, more than one tenth of them had poor mind-body quality of life.

Concerning the distribution of studied infertile women in relation to social subscale the current study illustrated that the majority of the studied infertile women had fair social quality of life and (6%) had

good social quality of life. This finding was in line with a study conducted by **Bakhtiyar et al. (2019)**⁽¹⁹⁾, they declared that infertility can potentially affect the social quality of life among infertile women more than that of the fertile women.

Concerning correlation between fertility quality of life subscale and body mass index of studied infertile women the present study declared that there is a significant correlation between body mass index and emotional subscale ($p=0.005$). The finding of this study is symmetrical with a study carried out by **Almowafy et al. (2021)**⁽²¹⁾, they illustrated that there was significant relation between BMI and emotional domain of QOL. This finding also supported by **Ni et al. (2021)**⁽³³⁾, they revealed that body mass index had negative effect on emotional QOL of studied infertile women. The finding of the present study was also in harmony with **Scott et al. (2008)**⁽³⁴⁾, they studied obesity and mental disorders in general population they declared that over weight is an important factor in causing anxiety and depression to infertile women they found that body mass index had negative effect on QOL of the studied infertile women.

Regarding correlation between fertility quality of life subscale and infertile women's education and their duration of marriage, the present study revealed that there is no significant correlation between QOL of the studied infertile women and their education and duration of marriage. Similarly, is a study conducted by **Bakhtiyar et al. (2019)**⁽¹⁹⁾. They revealed that educational level and duration of marriage were non-significantly associated with total QOL. These findings supported by **Namdar et al. (2017)**⁽²²⁾, they revealed that there was no significant association

between infertile women education and all total QOL.

The results of the current study also revealed that there is no significant relation between QOL subscales and studied infertile women job. This finding comes in agreement with **Bakhtiyar et al. (2019)**⁽¹⁹⁾, they reported that there was no significant relation between studied women's occupation and their total QOL. On the other hand, the results of the present study disagree with a study done by **Mostafa et al., (2020)**⁽³⁵⁾. They studied effects of infertility on quality of life among infertile patients at Fayoum city and reported that the emotional domain had significant correlation with educational level of infertile women. From the researcher's point of view the difference between the present study and the previous study stems from the difference of sample and place.

Regarding correlation between core fertility quality of life subscale and age of menarche of the studied infertile women, the current study found that there is no significant relation between core fertility quality of life subscale and age of menarche of the studied infertile women. This finding disagrees with **Saffaet et al. (2019)**⁽³⁶⁾, who conducted research named (Is the timing of menarche correlated with mortality and infertility rates?), they clarified that fertility rates have significant effect on the variation in mean menarche age, suggesting an association between menarche timing and core-fertility quality of life.

Conclusion

Based on the findings of the present study, it can be concluded that the research question of the present study has been answered regarding quality of life as

perceived by the studied infertile women at Tanta City. It was very evident that:

- Infertility had a fair impact on all aspects of the studied woman's quality of life (fair means tool score was from 50% to less than 75%).
- The majority of the studied infertile women had fair emotional quality of life.
- Slightly more than two thirds of them had fair mind-body quality of life.
- Nearly one third of the studied infertile women had poor mind-body quality of life.
- Nearly one third of them had poor marital relation quality of life.
- The majority of the studied infertile women had fair social quality of life.
- There was a significant positive correlation between age and body mass index and emotional quality of life of the studied infertile women.

Recommendations

Based on the results of the present study, the following recommendations are suggested:

- The maternity nurse should conduct health education to infertile women about healthy lifestyle and health promotion regarding methods of infertility treatment.
- Further studies are needed in this field to assess the effect of health education program regarding women's quality of life of infertile women.

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