

Study of the Relationship between Life Stressors and Infertility

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Abstract

Background: Life stressors can affect infertile women through the release of stress hormones such as cortisol which can lead to physiological changes that impact the reproductive. **Aim:** The current study aimed to study the relationship between life stressors and infertility. **Research Design:** A descriptive design was used. **Setting:** The study was conducted at the outpatient clinic for Obstetrics and Gynecology in the International Islamic Center for Population Studies and Research, Al-Azhar University, Cairo, Egypt. **Sample:** Purposive sample composed of 100 infertile women. **Tools:** Four tools for data collection. **First tool:** A structured interviewing questionnaire which consisted of two parts (socio-demographic data and health history). **Second tool:** Psychosomatic assessment sheet. **Third tool:** Infertility distress scale. **Fourth tool:** Stressors assessment sheet. **Result:** The majority of the studied women had psychosomatic symptoms that associated with life stressors and all the studied women had distress. Also, the most studied women had life stressors. In addition, there was high statistically relation between psychosomatic symptoms, infertility distress scale, life stressors and infertility. **Conclusion:** The present study concluded that there is a relationship between life stressors and infertility. **Recommendations:** Develop stress management programs and coping strategies to reduce effect of life stressors on quality of life among infertile women. Programs successful in dealing with psychogenic infertility in Egypt need to include the establishment of a community-based intervention strategy to educate people about psychogenic infertility and give guidelines for proper treatment.

Keywords: *Infertility, Life stressors, Relationship.*

Introduction:

Infertility is defined as the disability to get pregnant in spite of having frequent, unprotected coitus for at least 12 months for most couples. Infertility may result from a problem with either woman or the husband, or a collection of factors that interpose with pregnancy. Latterly, infertility was also referred to be the biological disability of an individual to participate to pregnancy or to a woman who cannot carry a pregnancy to full term (*American Society for Reproductive Medicine., 2022*).

Stressors, the word stressor refers to the stimulation that preceding or precipitating the change. The term stressor is used in a general sense to refer to any stimuli that creates such upset, including general life stressors and those associated



with illness and represents an unmet need and may be physiological, psychological, social, environmental, developmental, spiritual, or cultural (*Potter and Perry., 2021*).

Life stressors can affect infertile women through the release of stress hormones such as cortisol which can lead to physiological changes that impact the reproductive health and the symptoms of stress can be similar whether stressors associated with infertility issues, life challenges and even serious illness or not. When stress levels increase, the duration of infertility will also increase and women will have difficulty to get pregnant (*Marie et al., 2020*).

Nurses play a major role in the care of infertile individuals. Nurses are axial educators about preventive health care. There are numbers of potentially modifiable risk factors related to the development of impaired fertility in women, and women need to be aware of these risks to institute change. The nurse is most effective when offers care and treatment in a professional manner and regards the couple as valued and respected individuals. The nurse must encompass the whole person, not just the results of the various infertility studies. Throughout the entire process, the nurse's role is to; provide information, counselling and anticipatory guidance and stress management (*Luk & Loke., 2022*).

Significant of the study:

According to the World Health Organization (*WHO., 2021*), 52 million couples and 192 million individuals live with infertility globally. About 12.5% of women around the world experienced secondary infertility, and almost 4% experienced primary infertility. The incidence of secondary infertility, specially, varies widely by region and country, ranging from less than 8% to greater than 20% of women. They found that 3.9% of women aged 20-44 who wanted a child were disable to have their first live birth and 13.5% of women who had previously given birth were disable to have another baby after five years of trying. This represented a 0.1% and 0.4% decrease from 2019, respectively.

The infertility rate in the United States would be ranged from 5.8 to 6.9 million, (9.8%) in 2021. While in Egypt the infertility rate is 17% (3 million) of total population (*WHO., 2021*). The infertility is often accompanied by increased psychological distress, and that the stress experienced by many infertile couples may be more a outcome or result than a cause of infertility (*ASRM., 2022*). Therefore, the current study attempted to determine the relationship between life stressors and infertility.

Aim of the study:

The aim of the current study was to study the relationship between life stressors and infertility.

Research question:

What is the relationship between life stressors and infertility?

Subject and methods:

Research Design:

A descriptive research design was used to study the relationship between life stressors and infertility.

Setting:

The study was conducted at the outpatient clinic for Obstetrics and Gynecology in the International Islamic Center for Population Studies and Research, Al-Azhar University, Cairo, Egypt.

Subject:**Type of sample:**

A purposive sample was used to conduct this study.

Sample Size:

The sample composed of one hundred of the infertile women who exposed to life stressors selected according to inclusion criteria for a period of six months.

Inclusion criteria:

- Age range from 18 to 35 years.
- Women who exposure to life stressors.
- Both types of infertility (primary and secondary).

Exclusion criteria:

- Male causes of infertility.
- Women who have medical, surgical, obstetric and gynaecological disorders that cause infertility.

Tools of data collection:

Four tools were used by the researcher to study the relationship between life stressors and infertility:

Tool I: A structured interviewing questionnaire: this tool was designed by the researcher and was written in simple Arabic language, to collect data about the subject and consisted of two parts:

Part one: Sociodemographic data: The questionnaire included 15 questions to assess the socio-demographic data of the infertile women such as (age, education level, place of residence, job, nature of the effort spent at work, family income, treatment cost, duration of marriage, husband's salary, family type, number of family members, number of house rooms, overcrowding rate (number of people / number of rooms) and number of marriages).

Part Two: Health history: This section included 33 questions to assess the health history of infertile women such as; menstrual cycle history, obstetric history, infertility history, history of sexual relation, investigations, medical and surgical treatment for infertility.

Tool II:

Psychosomatic assessment: This tool was adapted from (*Razhan., 2018*), modified by the researcher and written in simple Arabic language to assess psychosomatic symptoms that associated with life stressors for women who suffering from infertility. The questionnaire consisted of 58 closed questions such as; symptoms of circulatory, respiratory, digestive and urinary systems, physical symptoms, symptoms of psychological, financial and social stressors.

Scoring system for psychosomatic symptoms:

The Psychosomatic symptoms question was 58 questions, each question was scored by 0 for a «No» answer, while 1 for «Sometimes» and 2 for a «Yes» answer. The psychosomatic symptoms scores ranged from 0-116, they were evaluated as follows:

Total score of psychosomatic symptoms:

- No psychosomatic symptoms 0% (0)
- Psychosomatic symptoms (1:100%) (1-116)

Tool III:

Infertility distress scale: This tool was adopted from *TAF Preventive Medicine Bulletin., (2015)* and translated by the researcher to simple Arabic language to determine distress levels among infertile women who exposed to life stressors. The questionnaire consisted of 21 closed questions such as; feel as if I were alone in the world, I feel myself excluded out of my family and friends, there are people around me to whom I can admit when I am bored, I have no more power to resist and struggle, I feel myself useless, etc.

Scoring system for infertility distress scale:

The Infertility distress scale was consisted of 21 questions, each question was scored by 0 for a «No» answer, while 1 for «Sometimes» and 2 for a «Yes» answer. The Infertility distress scores ranged from 0-42, they were evaluated as follows:

Total score of Infertility distress scale:

- No distress 0% (0)
- Distress from (1:100%) (1:42)

Tool IV:

Stressors assessment sheet: This tool was designed by the researcher and was written in simple Arabic language to assess different kinds of life stressors that cause women infertility. The questionnaire consisted on 21 closed questions such as; the woman has child suffering from malformations and the woman is afraid that the next child will also be malformed, the previous fetus dead inside the woman's uterus after the completion, the woman has child with Down syndrome, the woman suffers from frequent miscarriages, the woman has delayed pregnancy without an organic reason preventing the woman from getting pregnant, etc.

Scoring system for Life stressors:

The Life stressors questionnaire was consisted of 21 questions, each question was scored by 0 for a «No» answer, while 1 for «Yes». The Life stressors question scores ranged from 0-21, they were evaluated as follows:

Total score for Life stressors:

- No life stressors 0% (0)
- Life stressors (1:100%) (1:21)

Validity:

The revision of the tools was done by a panel of two Maternal and Newborn Health Nursing experts and one Mental Health Nursing expert to test the relevance and clarity of contents. Suggestions were incorporated into the four tools. The validity of the tools was 96% based on opinion of the experts.

Reliability:

Testing reliability of proposed tools was done by Cronbach's alpha test through SPSS computer package. It was 0.859 for "Structured interviewing questionnaire sheet", 0.887 for tool "Psychosomatic symptoms assessment", 0.902 for tool "Infertility distress scale", 0.895 for tool "Life stressors assessment sheet". Which indicate that the four tools were reliable to detect the objectives of the study.

**Ethical and legal consideration:**

Prior study conduction, approval was obtained from the Scientific Research Ethics Committee of Faculty of Nursing – Helwan University. The researcher clarified the aim of the study to the women who included on the study. They were assured that anonymity and confidentiality would be guaranteed, and informed about their right to refuse or withdraw from the study at any time. The study procedures do not entail any harmful effects on participants. An informed consent was obtained from each woman prior to participate in the study.

Pilot study:

A pilot study was carried out on 10 % of the studied women (10 infertile women) to evaluate the applicability of the study tools and estimate the proper time required for answering the required data.

Field work:

The data collected through a period of six months (from 1/7/2021 until 31/12/2021). The researcher visited the outpatient clinic for Obstetrics and Gynecology in the International Islamic Center for Population Studies and Research, Al-Azhar University three days per week in Sunday, Tuesday and Thursday at (8am – 2pm) to collect data.

- The researcher started the assessment and collection of data after taking the informed consent from the administrator of International Islamic Center for Population Studies and Research Al-Azhar University on the official letter from the Dean Faculty of Nursing – Helwan University.
- The researcher introduced herself to the participants, greeted women, explained the purpose and aim of the study before starting the interview questionnaire to gain their confidence and trust to convince them to participate in the study, showing women the informed consent from the administrator of International Islamic Center for Population Studies and Research Al-Azhar University of the official letter from the Dean Faculty of Nursing – Helwan University to conduct the study and the written informed consent was taken from each woman to participate in this study.
- The researcher assessed and collected the data from the women before the medical examination. The researcher interviewed each woman individually at the waiting room and the women are cooperative, responded well to the assessment and answered all the questions.
- Data was collected by using the constructed tools. Any clarifications needed for women were done by the researcher. Take into consideration using simple and clear Arabic language. Questionnaire schedules were completed by the researcher and the average time needed for the completion of each form was around 35 minutes.
- The researcher started to fill out the sociodemographic data about the infertile women by asking the women questions about name, age, education level, place of residence, employment status, etc. This part took about (5 minutes) for each form.
- Then the researcher assessed the infertile women' health history to fill out the health history assessment sheet by asking the women questions about menstrual cycle history, obstetric history, infertility history, history of sexual relation, investigations, etc. This part took about (20 minutes) for each form.
- Then the researcher assessed the infertile women' psychosomatic symptoms that associated with life stressors to fill out the psychosomatic assessment tool by asking the women questions about symptoms of circulatory, respiratory, digestive and urinary systems, physical symptoms, etc. This tool took about (15 minutes) for each form.

- Then the researcher determined the infertile women’s distress levels that result from exposure to life stressors to fill out infertility distress scale. This tool took about (5 minutes) for each form.
- Then the researcher assessed different kinds of life stressors that cause women infertility to fill out stressors assessment sheet. This tool took about (5 minutes) for each form.

Results:

Table (1): Distribution of the studied women with infertility regarding sociodemographic characteristics, (N=100).

Socio-demographic characteristics	The studied sample (N=100)	
	No.	%
Age (years):		
• 18-<28	53	53
• >28-35	47	47
Mean ± SD	28.14 ± 6.532	
Educational level:		
• Can not read and write	1	1
• Primary education (read and write)	8	8
• Secondary education	52	52
• University education	39	39
Place of residence:		
• Rural	31	31
• Urban	69	69
Job:		
• Work	55	55
• House wife	45	45
If the woman work, the nature of the effort spent at work:		
• Not work	45	45
• Simple effort	13	13
• Moderate effort	17	17
• Hard effort	25	25
Cost of treatment:		
• Health insurance	17	17
• At the couple’s expense	83	83
Duration of marriage in years:		
• 1-5	73	73
• 6-10	20	20
• >10	7	7
Family members:		
• 1-3	20	20
• 4-6	17	17
• >6	63	63
Overcrowding rate (number of persons / number of rooms):		
Mean ± SD	1.20 ± 0.474	

Table (1) shows that, more than half (53%) of the studied women were in the age group 18-< 28 years with Mean \pm SD = 28.14 ± 6.532 . Also, more than half (52%) of the studied women had secondary education level and more than two-thirds (69%) lived in Urban area compared to almost one-third (31%) lived in Rural area. Regarding their job, more than half (55%) of the studied women were worked, while quarter (25%) spent hard effort at work. The majority (83%) of treatment cost was at the couple's expense. In addition, less than two quarters (73%) of the studied women married for a period of 1-5 years. As well as less than two-thirds (63%) of the studied women lived in overcrowded homes with Mean \pm SD = 1.20 ± 0.474 .

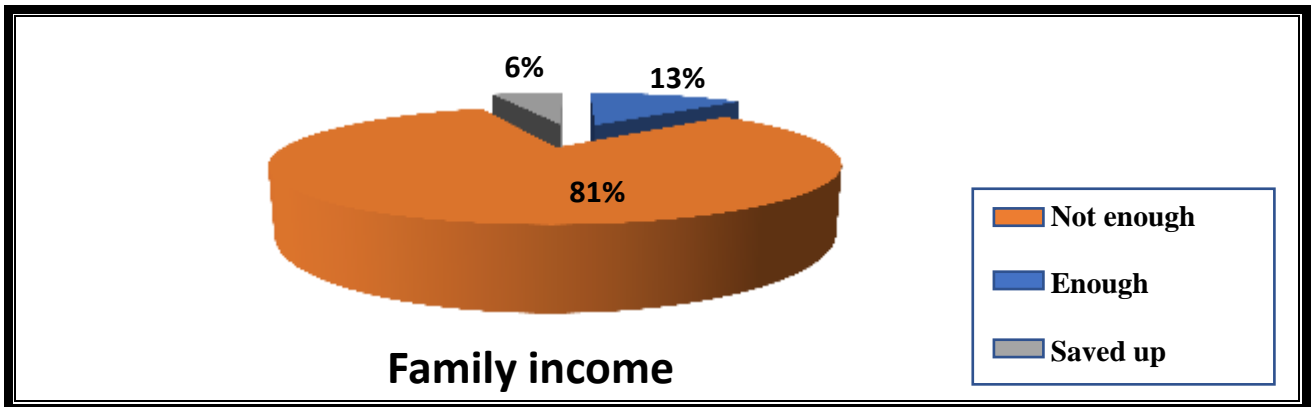


Figure (1): Distribution of the studied women with infertility regarding family income, (N=100).

Fig (1) explains that, the majority (81%) of the studied women with infertility demonstrated that their family income was not enough, while (13%) of them their family income was enough treatment needs as well as (6%) of them their family income was saved up.

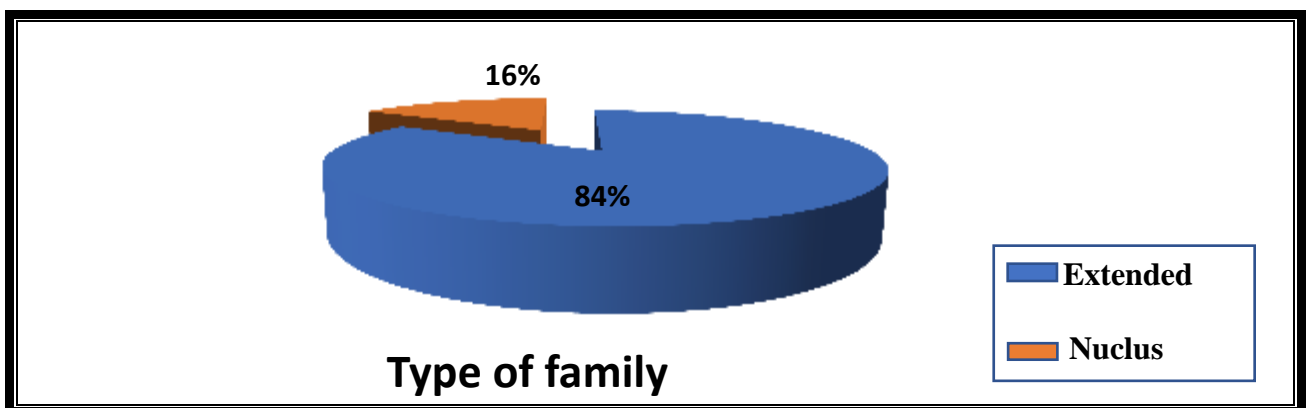


Figure (2): Distribution of the studied woman with infertility regarding family type, (N=40).

Fig (2) illustrates that, the majority (84%) of the studied women with infertility lived within the extended family, while (16%) of them lived within the nucleus family.

Health history of the studied women with infertility:

Table (2): Distribution of the studied women with infertility regarding menstrual history, (N=40).

Menstrual history	The studied sample, (N=100)	
	No.	%
The menstrual cycle:		
• Regular	66	66
• Irregular	34	34
Duration of the cycle:		
• 3-5 days	49	49
• 6-8 days	29	29
• >8 days	22	22
Problems during cycle:		
• Heavy menstrual flow	3	3
• Abdominal pain	4	4
• Fatigue	12	12
• Lethargy	20	20
• Constipation	8	8
• Edema	6	6
• Breast enlargement	10	10
• Headache	12	12
• Acne	16	16
• Back pain	9	9

Regarding menstrual history of the studied women with infertility. **Table (2)** portrays that, over than two-thirds (66%) of the studied women with infertility had regular menstrual cycle and nearly half (49%) of them revealed that their menstrual cycle lasts from 3-5 days. Regarding problems during menstrual cycle, less than quarter (20%) of the studied women with infertility reported that they suffer from lethargy as well as more than one-sixth (16%) of them suffer from acne.

Table (3): Distribution of the studied women with infertility regarding psychosomatic symptoms that associated with life stressors, (N=100).

Psychosomatic symptoms that associated with life stressors	The studied sample, (N=100)					
	Yes		No		Sometimes	
	No.	%	No.	%	No.	%
Symptoms of the circulatory system:						
• Increase heart rate.	57	57	23	23	20	20
• Increase sweating.	43	43	36	36	21	21
• Headache.	31	31	11	11	58	58
• Chest pain.	52	52	6	6	42	42
• Neck vein congestion.	14	14	23	23	63	63
• Varicose veins.	4	4	28	28	68	68
Symptoms of the respiratory system:						
• Difficult breathing.	12	12	27	27	61	61
• Bluish discoloration in the face and extremities	7	7	28	28	65	65

Physical symptoms:						
• General pain in the body.	13	13	25	25	62	62
• Feeling dizziness.	10	10	27	27	63	63
• Clenching on the teeth.	9	9	26	26	65	65
• Moving of the mouth.	10	10	29	29	61	61
• Nail-biting.	7	7	23	23	70	70
• Muscles disorder (muscle strain).	10	10	23	23	67	67
• Difficulty falling asleep and easily dread.	13	13	23	23	64	64
• Neck pain.	3	3	23	23	74	74
• Feeling hotness and redness of the face.	11	11	23	23	66	66
• Waking up tired.	10	10	23	23	67	67
• Face pallor.	8	8	23	23	69	69
• Dryness of the mouth.	8	8	23	23	69	69
Symptoms of the digestive system:						
• Difficulty in the digestion.	7	7	23	23	70	70
• Diarrhea	9	9	23	23	68	68
• Constipation.	13	13	23	23	64	64
• Burning sensation in the stomach.	15	15	23	23	62	62
• Weight gain.	13	13	23	23	64	64
• Weight loss	7	7	23	23	70	70
• Pain in the abdomen	11	11	23	23	66	66
• Nausea and vomiting	13	13	23	23	64	64
• Fullness of the abdomen	15	15	23	23	62	62
• Change in the nature of the food	23	23	26	26	51	51
Symptoms of the urinary system:						
• Rapid urination.	13	13	26	26	61	61
• Frequent urination.	14	14	26	26	60	60
The life stressors:						
• Continuous anxiety and fear.	23	23	21	21	56	56
• Feeling that the life has no goal.	13	13	24	24	63	63
• Thinking about the failure of treatment methods.	11	11	26	26	63	63
• Worry about the future.	11	11	21	21	68	68
• Easily fatigue and tired.	12	12	21	21	67	67
• Persistent anxiety and nervousness.	13	13	21	21	66	66
• Feeling lethargy.	16	16	21	21	63	63
• Extreme sadness.	16	16	30	30	54	54
• Feeling difficult to control the life.	16	16	25	25	59	59
• Difficulty in decisions making.	15	15	31	31	54	54
• Nightmares and cannot sleep well.	15	15	29	29	56	56
• Fear of unknown things.	15	15	22	22	63	63
• Poor memory.	16	16	30	30	54	54
• Feeling guilty.	13	13	29	29	58	58
• Inability to perform daily activities.	15	15	26	26	59	59
• Loss of happiness at work.	14	14	29	29	57	57
• Do not perform the imposed duties.	13	13	28	28	59	59
• Loss of the sexual desire.	10	10	34	34	56	56
• Loss of the self-confidence.	15	15	26	26	59	59
• Insomnia.	13	13	29	29	58	58

Social and economic stressors:						
• Decrease social relationships.	13	13	29	29	58	58
• Escape from talking with people.	13	13	25	25	62	62
• Change in the level of living.	16	16	28	28	56	56
• Change in the entertainment system.	13	13	27	27	60	60
• Feeling lonely and isolation.	11	11	29	29	60	60
• Increase cost of treatment and basic needs	13	13	29	29	58	58

Table (3): represents psychosomatic symptoms that associated with life stressors for the studied women with infertility. Regarding symptoms of the circulatory system, more than half (57%) of the studied women had increased heart rate, less than half (43%) had increased sweating, more than half (52%) had chest pain. According to symptoms of the respiratory system, less than two-thirds (61%) of the studied women sometimes had difficult breathing, nearly two-thirds (65%) sometimes had bluish discoloration in the face and extremities.

The results showed that, the majority of the studied women sometimes had physical symptoms such as general pain in the body, feeling dizziness, clenching on the teeth, etc. in percentages (62%, 63%, 65%, 61%, 70%, 67%, 64%, 74%, 66%, 67%, 69% & 69%), respectively. Concerning symptoms of the digestive system, the most studied women sometimes had difficulty in the digestion, diarrhea, constipation, etc. in percentages (70%, 68%, 64%, 62%, 64%, 70%, 66%, 64%, 62% & 51%), respectively.

Regarding symptoms of the urinary system, less than two-thirds (61%) of the studied women sometimes had rapid urination and less than two-thirds (60%) sometimes had frequent urination. The table clarifies that, the majority of the studied women sometimes had life stressors symptoms such as continuous anxiety and fear, feeling that the life has no goal thinking about the failure of treatment methods, etc. in percentages (56%, 63%, 63%, 68%, 67%, 66%, 63%, 54%, 59%, 54%, 56%, 63%, 54%, 58%, 59%, 57%, 59%, 56%, 59% & 58%), respectively. The results demonstrated that, the most studied women sometimes had social and economic symptoms such as decreased social relationships, escape from talking with people, change in the level of living, etc. in percentages (58%, 62%, 56%, 60%, 60% & 58%), respectively.

Table (4): Distribution of the studied women with infertility regarding infertility distress scale, (N=100).

Infertility distress scale	The studied sample, (N=100)					
	Yes		No		Sometimes	
	No.	%	No.	%	No.	%
Feel as if I were alone in the world.	7	7	14	14	79	79
I feel myself excluded out of my family and friends.	10	10	13	13	77	77
There are people around me to whom I can admit when I am bored.	9	9	16	16	75	75
I have no more power to resist and struggle.	13	13	15	15	72	72
I feel myself useless.	13	13	15	15	72	72
I feel myself unhealthy.	13	13	11	11	76	76
I feel myself anxious and nervous continuously.	13	13	15	15	72	72
I have no pleasure from any of my works.	13	13	16	16	71	71
I feel myself continuously tired recently.	13	13	18	18	69	69
I much more take care of myself when compared to previous time.	13	13	17	17	70	70
I avoid to talk about not being able to have a child.	13	13	15	15	72	72
I wouldn't like being asked questions about not being able to have a child.	13	13	14	14	73	73
My husband and I easily talk about not being able to have a child.	13	13	14	14	73	73

I easily have friendship with families who have children.	13	13	18	18	69	69
I think people around me accuse me of not being able to have a child.	13	13	16	16	71	71
I Think my husband accuse me.	13	13	11	11	76	76
That I cannot have a child affects sexual partnership with my husband.	13	13	12	12	75	75
I feel anger to my husband.	13	13	16	16	71	71
I think my husband does not currently love me as much as previously.	13	13	14	14	73	73
Relationship between me and my husband been affected negatively.	13	13	16	16	71	71
My husband is interested in me much more than before.	13	13	18	18	69	69

Table (4): presents the infertility distress scale for the studied women with infertility. The results demonstrated that, the majority of the studied women sometimes had all items of the scale such as feel as if I were alone in the world, I feel myself excluded out of my family and friends, there are people around me to whom I can admit when I bored, I have no more power to resist and struggle, I feel myself useless, etc. in percentages (79%, 77%, 75%, 72%, 72%, 76%, 72%, 71%, 69%, 70%, 72%, 73%, 73%, 69%, 71%, 76%, 75%, 71%, 73%, 71%, 69%), respectively.

Table (5): Distribution of the studied women with infertility regarding life stressors, (N=100).

Life stressors	The studied sample, (N=100)			
	Yes		No	
	No.	%	No.	%
The child suffering from malformations and are you afraid that your next child will also be malformed.	73	73	27	27
The previous fetus dies inside the uterus after his or her completion.	72	72	28	28
The child with Down syndrome.	85	85	15	15
Suffer from frequent miscarriages.	62	62	38	38
Delayed pregnancy without an organic reason preventing you from getting pregnant.	71	71	29	29
The relationship with husband and husband's family bad	87	87	13	13
Faced a negative situation that affected your life.	85	85	15	15
Suffer from stress and excessive fear of infertility.	83	83	17	17
Suffer from problems at work.	81	81	19	19
Suffer from economic problems.	75	75	25	25
Suffer from social or family problems.	75	75	25	25
The live with husband in a separate house.	81	81	19	19
Inability to respond to insults from others.	73	73	27	27
Life threatened by separation or divorce at any time.	78	78	22	22
Find difficulty to express your feelings and the pressures you face.	71	71	29	29
Someone close to you die recently	80	80	20	20
Someone dear to you been seriously ill.	72	72	28	28
Suffer from anxiety and think a lot about not getting pregnant.	74	74	26	26
Suffer from many questions from friends and relatives about the reasons for not getting pregnant.	74	74	26	26
The husband pushes you to engage in sexual intercourse without being indifferent to the fatigue you feel.	81	81	19	19
There in the family previous members suffer from infertility.	56	56	44	44

Table (5): displays life stressors assessment for the studied women with infertility. The results clarified that, the most studied women had all items of the questionnaire such as the woman had child suffering from malformations and the woman is afraid that the next child will also be malformed, the previous fetus die inside the woman’s uterus after the completion, the woman had child with Down syndrome, the woman suffer from frequent miscarriages, the woman had delayed pregnancy without an organic reason preventing the woman from getting pregnant, etc. in percentages (73%, 72%, 85%, 62%, 71%, 87%, 85%, 83%, 81%, 75%, 75%, 81%, 73%, 78%, 71%, 80%, 72%, 74%, 74%, 81%, 56%), respectively.

Table (6): Correlation between total scores of psychosomatic symptoms, infertility distress scale and life stressors of the studied women with infertility, (N=100).

Total Scores of	Psychosomatic symptoms		Infertility distress scale	
	R	Sig.	R	Sig.
Psychosomatic symptoms	---	---	---	---
Infertility distress scale	0.498	.000	---	---
life stressors	0.654	.000	0.625	.000

*Significant (P<0.05)

r= Pearson Correlation Coefficient

Table (6): displays the correlation between total scores of psychosomatic symptoms, infertility distress scale and life stressors of the studied women with infertility. The results demonstrated that, there was high statistically significant relationship between total scores of psychosomatic symptoms, infertility distress scale, life stressors and infertility at P value < 0.05.

Discussion:

Psychogenic infertility refers to the disability to get pregnant without any physiological reasons, in other words there are no physical or bodily causes for the infertility. Approximately 17% of couples had experienced psychogenic infertility. The main causes possibly being linked to psychological stressors (*Anvar et al., 2022*). Actually, a crisis of infertility is a difficult emotional experience as infertility influence different aspects of marital and individual life such as social relations, life objectives, quality of life, and sexual relations (*Domar et al., 2021*).

Regarding socio-demographic characteristics, the findings of the current study revealed that more than half of the studied women were in the age group 18-<28 years. The present study findings were partially agreement with (*Shewikar., 2021*) who studied “A preliminary study of stress and infertility among Egyptian women”, conducted at Gynecological and Obstetrics unit, in Benha University Hospitals, Egypt and reported that about half of the studied women were in the age group 18-<25 years.

As regards education, more than half of the studied women had secondary education. These findings agreed with (*Shewikar., 2021*) who indicated that the mean age of the study and control groups was less than two-thirds of both groups have secondary education. These findings were partially contradicted with (*Hanan., 2020*) who investigated “Infertility profile, psychological ramifications and reproductive tract infection among infertile women”, in northern Upper Egypt and mentioned that less than three quarters of the studied women were university education or higher.



Concerning place of residence of the studied women, the current study showed that more than two-thirds of the studied women lived in urban area compared to almost one-third of the studied women lived in rural area. These results were supported by (*Omnya., 2021*) who studied “The Effect of a Mind - Body Therapeutic Program for Infertile Women Repeating In Vitro Fertilization on Uncertainty and Anxiety” conducted in International Islamic Center for Population Studied and Research – ART Unit – Al-Azhar University, Cairo, Egypt and reported that two-thirds of the studied women lived in urban area compared to more than one-third of the studied women lived in rural area.

According to the studied women’s job, the current study revealed that more than half of the studied women were worked, while quarter of the studied women spent hard effort at work. These results were in accordance with (*Mahmut et al., 2019*) who entitled “Effects of infertility treatment on anxiety and depression levels” in Turkey and reported that more than half of the studied women were worked and nearly quarter of the studied women spent hard effort at work with no statistically significant difference regarding the socio-demographic characteristics between the two groups. In my opinion, this reflects that the two groups were homogenous.

Concerning cost of treatment of the studied women, the present study showed that the majority of treatment cost was at the couple’s expense. These findings were in agreement with (*Hanan., 2020*) who stated that the most cost of treatment was at the couple’s expense. Also, these results were supported by (*Eniko., 2022*) who studied “Anxiety and depression among infertile women” in Hungary and indicated that two-thirds of treatment cost was at the couple’s expense.

In relation to duration of marriage in years of the studied sample, the present study revealed that less than two quarters of the studied women married for a period of 1-5 years. These results were disagreed with (*Miok., 2023*) who entitled “The Effect of a Mind – Body Therapeutic Program for Infertile Women on Uncertainty, Anxiety and Implantation rate” in Korea and mentioned that half of the studied women married since more than 5 years.

According to overcrowding rate, the current study showed that less than two-thirds of the studied women lived in overcrowded homes. These results agreed with (*Abedi et al., 2020*) who studied “Effectiveness of Mindfulness-Based Cognitive Group Therapy on Marital Satisfaction and General Health in Women with Psychogenic infertility” in Iran and reported that two-thirds of the studied women lived in overcrowded homes.

According to family income, the results of current study showed that, the majority of the studied women demonstrated that the family income was not enough. These findings were in agreement with (*Alicia et al., 2022*) who entitled “The Supportive Interactions in Infertility Treatment Decrease Cortisol Levels” in Poland and reported that, the most studied women stated that the family income was not enough.

As regarding type of family, the present study revealed that the majority of the studied women lived within the extended family. This is following the statement of (*Gulzhanat., 2023*) who studied “The effect of psychological distress on IVF outcomes” in Kazakhstan and mentioned that more than two quarters of the studied women lived within the extended family. From the researcher’s point of view, the women who live within the extended family are more likely to face different types of life stressors that cause infertility.

Regarding menstrual history of the studied women, the results of the present study showed that over than two thirds of the studied women had regular menstrual cycle and nearly half of the studied women revealed that the menstrual cycle



lasts from 3-5 days. These findings were on the same line with (*Gulzhanat., 2023*) who mentioned that more than two-thirds of the studied women had regular menstrual cycle and half of the studied women stated that the menstrual cycle lasts from 3-6 days. In my opinion, the similarity between results can be due to the methodological similarities between the studies.

Regarding problems during menstrual cycle, the results of this study showed that less than quarter of the studied women suffer from lethargy as well as more than one-sixth of the studied women suffer from acne. These findings were in agreement with (*Amal., 2022*) who studied “The Depression and Anxiety among infertile Women”: A Cross Sectional Study in the Reproductive Health Centre in Moroccan and mentioned that quarter of the studied women stated that they had lethargy, while one-tenth of the studied women had acne. In the researcher’s opinion, problems during menstrual cycle contributed to change in level of hormones and effect of stress on the women’s body.

Concerning psychosomatic symptoms that associated with life stressors of the studied women, in relation to circulatory symptoms, the present study finding showed that more than half of the studied women had increased heart rate, less than half had increased sweating, more than half had chest pain. According to symptoms of the respiratory system, less than two-thirds of the studied women with infertility sometimes had difficult breathing, nearly two-thirds of the studied women sometimes had bluish discoloration in the face and extremities.

These results were in accordance with (*Ying et al., 2020*) who indicated that about half of the studied sample had increased heart rate, nearly half of the studied sample had increased sweating, more than half of the studied sample had chest pain. Also, nearly two-thirds of the studied sample had difficult breathing, two-thirds of the studied sample had bluish discoloration in the extremities.

The results of the current study revealed that the majority of the studied women sometimes had physical symptoms such as general pain in the body, feeling dizziness, clenching on the teeth, etc. Concerning, symptoms of the digestive system the most studied women sometimes had difficulty in the digestion, diarrhea, constipation, etc. These findings were similar with (*Razhan., 2023*) who studied “The Relationships among Stressors, Stress Level, and Mental Symptoms for Infertile women” in France and reported that the most studied women had symptoms of the digestive system and the majority had physical symptoms.

Regarding symptoms of the urinary system, the results of the current study showed that less than two-thirds of the studied women sometimes had rapid urination and less than two-thirds sometimes frequent urination. While, the results showed that the majority of the studied women sometimes had life stressors symptoms such as continuous anxiety and fear, feeling that the life has no goal thinking about the failure of treatment methods, etc. Also, the results demonstrated that the most studied women sometimes such as decreased social relationships, escape from talking with people, change in the level of living, etc.

These results were in agreement with (*Ghada., 2020*) who stated that two-thirds of the studied sample had frequent urination and nearly two-thirds had rapid urination. As, the most studied sample had social and economic symptoms and more than three quarters had life stressors symptoms. From the researcher’s point of view, the compatibility between the result of the present study and the study of (*Ghada., 2020*) would be because there is homogenous between the studied groups of the two studies.



As regards infertility distress scale, the results of the present study showed that the majority of the studied women sometimes had all items of the scale such as feel as if I were alone in the world, I feel myself excluded out of my family and friends, there are people around me to whom I can admit when I bored, I have no more power to resist and struggle, I feel myself useless, etc. These results were in accordance with (*Metwally and Desoky., 2021*) who indicated that the most studied sample had all items of the infertility distress scale.

Regarding life stressors assessment, the results of the present study showed that the most studied women had all items of the life stressors assessment form such as the woman has child suffering from malformations and the woman is afraid that the next child will also be malformed, the previous fetus dead inside the woman's uterus after the completion, the woman has child with Down syndrome, the woman suffers from frequent miscarriages, the woman has delayed pregnancy without an organic reason preventing the woman from getting pregnant, etc. These findings were agreed with (*Khalifa et al., 2019*) who investigated "A dyadic mediation study on social support, coping, and stressors among women starting fertility treatment" in Dubai, UAE and mentioned that the majority of the studied sample had many and different types of life stressors.

As regards correlation between psychosomatic symptoms, infertility distress scale, life stressors and infertility, the findings of the present study showed that there was high statistically significant relationship between total scores of psychosomatic symptoms, infertility distress scale, life stressors and infertility. These results were matched with (*Abdulqader., 2019*) who indicated that there was a high statistically significant relationship between psychosomatic symptoms and occurrence of infertility among the studied sample.

Conclusion:

The results of the current study revealed that there was high statistically significant relationship between the psychosomatic symptoms that associated with life stressors and occurrence of infertility among the studied women. The findings of the present study showed that all the studied women had distress. The results of the current study revealed that all the studied women had life stressors. The findings of the present study revealed that there was high statistically significant relationship between total scores of psychosomatic symptoms, infertility distress scale, life stressors and infertility. The present study concluded that there is a relationship between life stressors and infertility. So, the results of the current study answered the research question.

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Recommendations:

Develop stress management programs and coping strategies to reduce effect of life stressors on quality of life among infertile women. Programs successful in dealing with psychogenic infertility in Egypt need to include the establishment of a community-based intervention strategy to educate people about psychogenic infertility and give guidelines for proper treatment.

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