

Violence against infertile women: comparative study in Upper verses Lower Egypt

Abstract

Background: Infertility is a common gynecological problem that is associated with social stigma, social neglect, economic deprivation, emotional stress, unhappiness and marital instability. Violence against women is a global major health and human right concerns as this affects millions of women all over the world across ethnicity, culture, socioeconomic and educational classes. Infertile women have been deemed particularly vulnerable to domestic abuse in several studies.

Aim: highlight and compare the prevalence and trends of domestic violence among infertile women receiving treatment for infertility in Upper verses Lower Egypt.

Methods: A cross-sectional comparative study on 200 infertile women. The study was carried out at Beni-Suef University's Center for Diagnosis and Treatment of Delayed Reproduction and Gynecological Outpatient Clinic Beni-Suef University Hospital and gynecological outpatient clinic, Port Said University Hospital.

Results: Women either upper Egyptian or lower Egyptian infertile women experienced and exposed all forms of domestic violence. The Upper & Lower studied Egyptian women experienced physical violence in about 70.0% & 68.0% and verbal violence in about 69.0% & 62.0% and financial violence in about 48.0% & 46.0% and violence in about sexual violence in about 45.0% & 28.0%, since not been able to have a baby successfully and in the past years. Relationships between physical and verbal aggression that are statistically significant include age, different types of infertility, the gender of children ($p < 0.05$).

Conclusion: However, is no statistically significant deference between geographical area (upper or lower) and types of violence experienced by infertile women, all form of violence were more prevalent among upper Egyptian infertile women.

Recommendations: (1) It is recommended that additional research be done with a larger sample from other provinces of Upper Egypt with regard to infertility and its psychological effects. (2) The relationship between violence and reproductive results requires more study, as do effective psychosocial interventions. Research on emotions and coping mechanisms within the context of treatment is particularly important.

Keywords: domestic violence, infertile women, physical violence, verbal violence, sexual violence, financial violence

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Introduction

Infertility is a universal phenomenon, with 40% having a female factor, 40% a male factor, and 20% a combination of both or an unknown etiology.¹⁻³ Infertility affects 186 million people worldwide, affecting 15% to 20% of couples.⁴ Its prevalence varies across countries, with 20% in developed countries⁵ 16% in the US and one in seven in the UK.⁶ In Iran, two million couples are infertile.⁷ According to the American Society for Reproductive Medicine (SRM), infertility is caused by a male or female reproductive system disease that prevents child conception. It should be evaluated at least one year before infertility, unless medical history, age, or physical findings dictate earlier treatment.⁸⁻¹⁰ Infertility has decreased significantly in the last 50 years, with 15.0% of couples experiencing difficulties conceiving.¹ A married couple is said to be infertile if they are unable to conceive despite having regular, frequent, and unprotected sex. About 12.0% of Egyptian couples are affected by it; of those, 4.3% have primary infertility (meaning they have never been pregnant), and 7.7% have secondary infertility, meaning they have already been pregnant.¹¹ The aim of having children is one that many couples strive to achieve, and failing to do so can have a negative impact on the couple's social life, emotional state, marital relationship, future goals,

self-esteem, and body image.¹² The diagnosis of infertility, the course of treatment, and the results of that treatment cause worry and anxiety in couples.¹³ The spouses may argue as a result of this circumstance. Due to the psychological burden this places on marriage, it can lead to incompatibility between partners and even divorce.¹⁴

According to Dufort et al.¹⁵ domestic violence is any violent conduct used against another person or members of the family. It can result in physical, mental, social, economic, or sexual harm. Suicide attempts can also result from domestic violence. Violence against women is a global health and human rights concern, affecting millions worldwide. The United Nations' 1992 Declaration defines it as gender-based violence causing physical, sexual, or psychological harm. The WHO estimates that at least one in five women has experienced violence in their lives.¹⁶ Infertile women have been deemed particularly vulnerable to domestic abuse in several studies. According to a study by Yldzhan et al.¹⁷ in Turkey, 33.6% of women with primary infertility had experienced domestic violence as a result of their infertility. Verbal abuse accounted for the majority of cases (63.4%), and abused women (87%) had received divorce threats from their husbands. For women who received infertility treatment, Leung et al.¹⁸ found a 1.8% prevalence of lifelong marital violence.

Furthermore, a study conducted in Nigeria by Ameh et al.¹⁹ found that 41.6% of infertile women face spousal violence as a result of their infertility. Similar to this, 61.8% of infertile women reported experiencing spousal abuse in a study by Ardabili et al.²⁰

Significance of the study

The number of couples seeking infertility therapy has sharply increased in recent years. This rising interest in reproductive treatments has increased knowledge about and sparked research into the psychological effects of infertility. An infertility workup and associated treatment have an influence on a person on many levels, including psychologically, physically, spiritually, and financially. The most prevalent potential disruptions were anxiety, low self-esteem, intense psychological tension, marital crisis, separation, and divorce when the psychological effects of human infertility had been thoroughly examined. Additionally, a number of reviews discuss anxiety, depressive symptoms, and stress in relation to fertility.^{21, 22} There are several studies on risk factors for domestic violence in pregnancy while studies on domestic violence and infertility are limited in Egypt. It has been found that women with infertility are twice more likely to be at risk of suffering from violence than women who have children.^{23, 24} The life time prevalence of domestic violence against women with infertility varies widely all over the world: it is 1.8% in Hong Kong,²⁵ 33.6% in Turkey²³ and 61.8% in Iran²⁴ while one of the few available studies from Nigeria reported 41.8%.²⁶ Women who experience violence are more likely to have depression, anxiety, psychosomatic symptoms, eating problems and sexual dysfunctions. The effects of violence may also be fatal as a result of intentional homicide, severe injury or suicide.²³ Despite the magnitude and enormous nature of violence against women, there is paucity of studies on violence against women with infertility in Egypt. This study's goal was to highlight and compare the prevalence and trends of domestic violence among infertile women receiving treatment for infertility in Upper versus Lower Egypt.

Operational definitions

Infertility: Infertility, as defined by the World Health Organization, is a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse, without the use of contraception.²⁷

Primary infertility: Couples who have been no prior conception after at least one year, having sex without usage birth control methods.²⁸

Secondary infertility: Couples who have been able to get pregnant at least once, but now are unable to conceive.²⁸

Domestic violence: Domestic violence is any violent conduct used against another person or members of the family. It can result in physical, mental, social, economic, financial, or sexual harm.¹⁵

Violence against women: Any act of gender based violence that results or likely to result in physical, sexual or psychological harm or suffering to women including threats of such harm, coercion or arbitrary deprivation of liberty whether occurring in public or private life.²⁹

Research questions

- A. What is proportion of infertile women who experience domestic abuse?
- B. What are kinds and sources of domestic violence among women who are infertile?

- C. What about variables that affect the incidence of violence against infertile women?

Subject and methods

Research design

A cross- sectional descriptive study was used to investigate the current research problem.

Research setting

This study was conducted in Centre for diagnosis and treatment of delayed reproduction and gynecological outpatient clinic, Beni-Suef University Hospital and gynecological outpatient clinic, Port Said University Hospital.

Subjects

Two hundred women gynecologically diagnosed infertile women were chosen during the trial period, which ran from the first of January 2018 to the end of December 2018 According to the estimated prevalence of domestic violence in the study sample, women were split into two groups: 100 women those who were from Upper Egypt and 100 those who were from Lower Egypt. The following criteria were used to determine who should be included in this study:

- A. Having a definite, specific infertility diagnosis
- B. Agree to take part in the study.

Tools of data collection

In order to obtain the necessary information from the following parts was designed by the researchers after reviewing the related literature: The first part: personal, socio-demographic characteristics, and reproductive health. It is divided into two sections, as stated below:

Section I: Researchers designed a questionnaire covering women's characteristics as socio-demographic information about women and their husband, including (1) age, marital status, degree of education, job title, and length of marriage; (2) a medical history that includes prescription medication use for hepatitis C, diabetes mellitus, hypertension, anemia, heart disease, and other conditions; (3) a menstrual history that includes the age of menarche, the length of the cycle, the frequency, and the presence of menstrual abnormalities; (4) obstetrical history, including gravidity, parity, the number of abortions, the number of children still alive, and the method of delivery; (5) family history of infertility, relationship to the affected individual; and (6) history of the reasons for infertility.

Section II: Researchers used a data collection form and Marital Violence against Women (SDVW) to gather data on women's reproductive health statuses, marital violence, and socio-demographic factors. The form included questions on spouse age, education, occupational status, and marital history, as well as reproductive health service access. The "Scale for Marital Violence against Women" (SDVW) was developed for the Turkish population. The scale includes 50 items in five subgroups: physical, emotional, verbal, economic, and sexual violence. The total score measures marital violence against women. The questionnaire uses a Likert type scale, with a minimum score of 50 and a maximum score of 150. A significant correlation was found between the total SDVW score and each subscale's scores, with an alpha value of 0.88.³⁰ Besides this scale, women were asked another single question: "Do you experience violence in your marriage?" The answers for this question were as follows:

- I. I never experience violence
- II. I rarely experience violence
- III. I always experience violence from my husband

Ethical considerations

Ethical approval was obtained from the Research Ethics Committee at the Faculty of medicine Beni-Suef University. All ethical considerations were considered for privacy and confidentiality. Written consents were obtained from the women participating in the study after a brief explanation of the study's aim and they were reassured that the information obtained would be private and used only for the study with their right to withdraw at any time without any consequence. The subject of this study was not address religious, ethical, moral, or cultural issues among women

Pilot study

A pilot study was conducted on 20 women (about 10% of the projected sample size; 10 women from Upper Egypt and 10 from Lower Egypt) in order to determine the study's viability, the instrument's clarity, the tools' dependability, and the time required for data collection. The reliability of the tools was evaluated using the Cronbach's alpha coefficient test ($r=0.85$), which showed that each item had generally homogeneous components.

Statistical design

The SPSS statistical package, version 22.0, was used to conduct statistical analyses and calculations. To describe the full sample and compare outcomes, sample characteristics were examined using descriptive statistics, independent t tests, and Chi Square, where necessary. The analysis of variance (ANOVA) test for numerical values and the chi-square test for categorical data will be used to compare the two groups.

Descriptive statistics included:

- a. Count (N)
- b. Percentage (%)
- c. Arithmetic mean and standard deviation (Mean \pm SD).

Inferential statistics included:

- a. X^2 : Chi-Square test
- b. t: Student t-test
- c. Z: Mann Whitney test
- d. ^{MC}P : Monte Carlo corrected P-value
- e. ^{FE}P : Fisher's Exact test

The following degrees of significance of results were considered:

- a. P-values greater than 0.05 are not significant.
- b. P-value ≤ 0.05 indicates significance.

Results

Table 1 presents Socio-demographic and infertility characteristics of the studied Upper versus Lower Egyptian infertile women; for 200 infertile women who participated in this study, which is depicted in Table 1. For Upper Egyptian women the mean age of them was 28.9 ± 8.5 year. One-third of them (33.0%) have a secondary or technical education. Additionally, 60.0% of them are housewives, and

86% are rural dwellers. Considering the crowdedness index, more than half of them (51.0%) have between one and two people per room. Additionally, around half of them (49.0%) do not have sufficient family income; 49.0% women were share in expenditure. About two-thirds of the studied women (65.0%) have primary infertility, 60.0% of women who have secondary infertility have female kids. In addition, 68.0% of them experienced infertility for between one and ten years. Moreover, for lower Egyptian women the mean age of them was 29.1 ± 6.4 year. More than one-third of them (38.0%) have a secondary or technical education. Additionally, 58.0% of them are housewives, and 59.0% are rural dwellers. Considering the crowdedness index, around two-thirds of them (64.0%) have between one and two people per room. Additionally, half (50.0%) of them do not have sufficient family income; 53.3% women were share in expenditure. About two-thirds of the studied women (68.0%) have primary infertility, 58.4% of women who have secondary infertility have female kids. In addition, 81.0% of them experienced infertility for between one and ten years.

Figure 1 & Table 2 demonstrates Upper versus Lower Egyptian infertile women's exposure to violence. They reveals that 70.0% & 78.0% of the examined upper and lower Egyptian women, respectively, experienced physical abuse as a result of infertility; 55.7% & 54.4% of them, respectively, were always exposed to physical violence by their husband and husband's relatives. Moreover, around two-thirds of them (69.0% & 62.0%) were exposed to verbal abuse; 76.8% & 80.6% exposed to verbal violence by their spouse and his family. Nearly two thirds of them (65.5%) were exposed to verbal abuse as a result of infertility. Additionally, almost half of them (47.3%) experienced some form of verbal abuse. This shows that more than one-thirds (45.0%) of the upper Egyptian women compared to only 28.0% in the study experience sexual violence, whereas over a third (42.2%) and around two-thirds (64.2%) always did. The majority of them (97.8% & 92.9%) of upper versus lower Egyptian infertile women were forced to sexual relations. Additionally, nearly half of upper and lower Egyptian infertile women, respectively, (48.0% & 46.0%) were subjected to financial violence, while more than one-third (41.7% & 43.5%) were exposed to All types of financial violence (stinginess, grab woman's income against her will, refuse pay money on medical expenses).

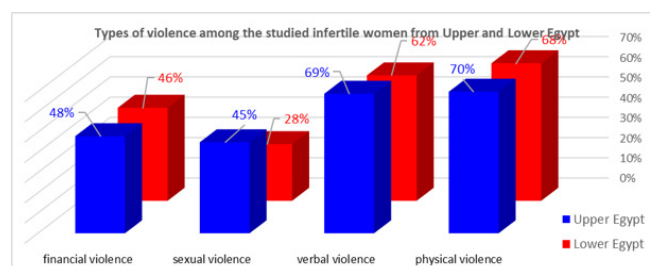


Figure 1 Exposure to violence among the studied infertile women from upper and lower Egypt.

Table 3 shows that there is a statistically significant relationship ($P\leq 0.05$) between the study's upper versus lower infertile women's exposure to physical violence and their age, the gender of their children, the crowding index, and the type of infertility. There is no statistically significant correlation between their educational attainments, employment, or place of residence, and family income. Table 4 shows that there is a statistically significant relationship ($P\leq 0.05$) between the upper and lower studied Egyptian infertile women's gender of the studied infertile women and their exposure to verbal violence, but not between their age, educational level, occupation, place of residence, crowding index, family income,

or type of infertility. Table 5 depicts that there is no statistically significant relationship ($P > 0.05$) between the upper and lower studied Egyptian infertile women's age, educational level, occupation, gender of children, residence, crowding index, and family income, but there is a statistically significant relationship ($P \leq 0.05$) between the studied infertile women's exposure to sexual violence and their type and duration of infertility, as well. Table 6 clarifies explains that there is

no statistically significant relationship ($P > 0.05$) between the studied upper versus lower Egyptian infertile women's exposure to financial violence and their age, occupation, residence, crowding index, family income. However, there is a statistically significant relationship ($P \leq 0.05$) between their exposure to financial violence and their education level, gender of children, type of infertility.

Table 1 Socio-demographic and infertility characteristics of the studied Upper and Lower Egyptian infertile women

Socio-demographic characteristics	Studied women (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Age (years)			
Min-Max	13.0-50.0	16.0-50.0	$t=0.197$
Mean \pm SD	28.9 \pm 8.5	29.1 \pm 6.4	$P=0.844$
Educational level			
Illiterate	33	29	$X^2=0.642$
Read and write/basic education	16	15	$P=0.887$
Secondary/technical education	33	38	
University education	18	18.8	
Occupation			
House wife	60	58	$X^2=0.083$
Work	40	42	$P=0.774$
Residence			
Rural	86	59	$X^2=43.685$
Urban	14	41	$P<0.0001^*$
Crowding index (person/room)			
Less than 1	28	2	$t=3.254$
1-<2	51	64	$P=0.001^*$
2 or more	21	34	
Min-Max	0.5-4.0	0.7-3.0	
Mean \pm SD	1.3 \pm 0.8	1.6 \pm 0.6	
Family income			
Enough	30	34	$X^2=0.940$
Not enough	49	50	$P=0.626$
More than enough/can save	21	16	
Wife share in expenditure			
Yes	49	53	$X^2=0.320$
No	51	47	$P=0.572$
Type of infertility			
Primary	65	68	$X^2=0.202$
Secondary	35	32	$P=0.653$
Gender of children	[n=35]	[n=32]	
Male	40	40.6	$X^2=0.001$
Female	60	59.4	$P=0.958$
Duration of infertility (years)			
1-<10	68	81	$Z=1.881$
10-<20	23	19	$P=0.060$
20- \leq 30	9	0	
Min-Max	1.0-30.0	1.0-15.0	
Median (Q1-Q3)	5.0 (3.0-11.8)	4.5 (3.0-8.0)	

X², chi-square test; t, student; t, test; Z, mann whitney test; *significant at $P \leq 0.05$.

Table 2 Exposure to violence among the studied infertile women from Upper and Lower Egypt

Exposure to violence	Studied women (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Exposure to physical violence due to infertility			
Yes	70	68	$X^2=0.094$
No	30	32	$P=0.760$
Person who causes physical violence			
Husband	22.9	27.9	$X^2=0.610$
Husband's relatives	21.4	17.7	$P=0.736$
Both	55.7	54.4	

Table 2 Continued...

Exposure to violence	Studied women (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Exposure to verbal violence due to infertility			
Yes	69	62	X ² =1.084
No	31	38	P=0.298
Person who causes verbal violence			
Husband's relatives	23.2	19.4	X ² =0.290
Husband and his relatives	76.8	80.6	P=0.593
Exposure to sexual violence			
Yes	45	28	X ² =6.234
No	55	72	P=0.013*
Frequency of exposure to sexual violence			
Sometimes	31.1	17.9	X ² =3.400
Frequently	26.7	17.9	P=0.183
Always	42.2	64.2	
Type of sexual violence			
Forceful sexual relation	97.8	92.9	F ² P=0.554
Abnormal sexual relation	2.2	7.1	
Exposure to financial violence			
Yes	48	46	X ² =0.080
No	52	54	P=0.777
Type of financial violence			
Stinginess	16.7	10.9	X ² =1.870
Grab woman's income against her will	22.8	32.6	P=0.601
Refuse pay money on medical expenses	18.8	13	
All types of financial violence	41.7	43.5	

^All had no an emergency plan on exposure to violence

 X^2 , chi-square test; MCP , monte carlo corrected P-value, FEP , fisher's exact test; *significant at $P \leq 0.05$.**Table 3** relationship between exposure to physical violence and socio-demographic as well as infertility characteristics of the studied infertile women from Upper and Lower Egypt

Socio-demographic characteristics	Exposure to physical violence (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Age (years)			
Min-Max	14.0-49.0	13.0-50.0	t=2.520
Mean±SD	28.1±6.8	31.2±8.5	P=0.013*
Educational level			
Illiterate	67.7	32.3	X²=4.363
Read and write/basic education	83.9	16.1	P=0.225
Secondary/technical education	67.6	32.4	
University education	61.1	38.9	
Occupation			
House wife	65.3	34.7	X²=1.888
Work	74.4	25.6	P=0.169
Residence			
Rural	67.1	32.9	X²=0.189
Urban	70.1	29.9	P=0.664
Crowding index (person/room)			
Min-Max	0.5-4.0	0.5-3.0	t=2.051
Mean±SD	1.5±0.8	1.3±0.5	P=0.042*
Family income			
Enough	70.3	29.7	X²=0.090
Not enough	68.7	31.3	P=0.955
More than enough/can save	67.6	32.4	
Wife share in expenditure			
Yes	62.7	37.3	P=3.807
No	75.5	24.5	P=0.051
Type of infertility			
Primary	76.7	23.3	X²=10.981
Secondary	53.7	46.3	P=0.001*

Table 3 Continued...

Socio-demographic characteristics	Exposure to physical violence (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Gender of children			
Male	33.3	66.7	X ² =7.570 P=0.006*
Female	67.5	32.5	
Duration of infertility (years)			
Min-Max	30-Jan	20-Jan	Z=0.133 P=0.894
Median (Q1-Q3)	5.0 (3.0-9.0)	5.0 (3.0-11.0)	

X², chi-square test; t, student t-test; Z, mann whitney test, *significant at P≤0.05.**Table 4** Relationship between exposure to verbal violence and socio-demographic as well as infertility characteristics of the studied infertile women from Upper and Lower Egypt

Socio-demographic characteristics	Exposure to verbal violence (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Age (years)			
Min-Max	15.0-50.0	13.0-49.0	t=0.630
Mean±SD	28.8±7.2	29.5±8.2	P=0.530
Educational level			
Illiterate	71	29	X ² =4.281 P=0.233
Read and write/basic education	58.1	41.9	
Secondary/technical education	59.2	40.8	
University education	75	25	
Occupation			
House wife	69.5	30.5	X ² =2.029 P=0.154
Work	59.8	40.2	
Residence			
Rural	68.5	31.5	X ² =0.456 P=0.500
Urban	63.8	36.2	
Crowding index (person/room)			
Min-Max	0.5-4.0	0.5-3.0	t=1.129
Mean±SD	1.5±0.8	1.4±0.6	P=0.260
Family income			
Enough	67.2	32.8	X ² =1.230 P=0.539
Not enough	65.7	34.3	
More than enough/can save	56.8	43.2	
Wife share in expenditure			
Yes	65.7	34.3	X ² =0.003 P=0.955
No	65.3	34.7	
Type of infertility			
Primary	69.2	30.8	X ² =2.370 P=0.125
Secondary	58.2	41.8	
Gender of children (n=67)			
Male	29.6	70.4	X ² =15.185 P<0.0001*
Female	77.5	22.5	
Duration of infertility (years)			
Min-Max	1.0-21.0	1.0-30.0	Z=0.979
Median (Q1-Q3)	5.0 (3.0-10.0)	5.0 (2.0-9.0)	P=0.328

X², chi-square test; t, student t-test; Z, mann whitney test, *significant at P≤0.05.**Table 5** Relationship between exposure to sexual violence and socio-demographic as well as infertility characteristics of the studied infertile women from Upper and Lower Egypt

Socio-demographic characteristics	Exposure to sexual violence (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Age (years)			
Min-Max	13.0-50.0	15.0-49.0	t=0.706
Mean±SD	28.7±7.7	29.5±7.2	P=0.481
Educational level			
Illiterate	54.8	45.2	X ² =6.183 P=0.103
Read and write/basic education	71	29	
Secondary/technical education	60.6	39.4	
University education	77.8	22.2	

Table 5 Continued...

Socio-demographic characteristics	Exposure to sexual violence (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Occupation			
House wife	63.6	36.4	$X^2=0.001$
Work	63.4	36.6	$P=0.983$
Residence			
Rural	58.9	41.1	$X^2=1.048$
Urban	66.1	33.9	$P=0.306$
Crowding index (person/room)			
Min-Max	0.5-4.0	0.5-4.0	$t=1.464$
Mean±SD	1.5±0.7	1.4±0.7	$P=0.145$
Family income			
Enough	71.9	28.1	$X^2=3.510$
Not enough	61.6	38.4	$P=0.173$
More than enough/can save	54.1	45.9	
Wife share in expenditure			
Yes	62.7	37.3	$X^2=0.051$
No	64.3	35.7	$P=0.821$
Type of infertility			
Primary	56.4	43.6	$X^2=8.657$
Secondary	77.6	22.4	$P=0.003^*$
Gender of children (n=67)			
Male	85.2	14.8	$X^2=1.493$
Female	72.5	27.5	$P=0.222$
Duration of infertility (years)			
Min-Max	1.0-20.0	1.0-30.0	$Z=2.708$
Median (Q1-Q3)	4.0 (3.0-7.0)	7.0 (3.5-11.5)	$P=0.007^*$

X^2 , chi-square test; t , student t -test; Z , mann whitney test, *significant at $P \leq 0.05$.

Table 6 Relationship between exposure to financial violence and socio-demographic as well as infertility characteristics of the studied infertile women from Upper and Lower Egypt

Socio-demographic characteristics	Exposure to financial violence (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Age (years)			
Min-Max	14.0-49.0	13.0-50.0	$t=0.520$
Mean±SD	28.8±7.1	29.3±8.0	$P=0.604$
Educational level			
Illiterate	22.6	77.4	$X^2=36.239$
Read and write/basic education	67.7	32.3	$P<0.0001^*$
Secondary/technical education	60.6	39.4	
University education	77.8	22.2	
Occupation			
House wife	52.5	47.5	$X^2=0.024$
Work	53.7	46.3	$P=0.876$
Residence			
Rural	52.1	47.9	$X^2=0.041$
Urban	53.5	46.5	$P=0.839$
Crowding index (person/room)			
Min-Max	0.5-4.0	0.5-4.0	$t=0.148$
Mean±SD	1.4±0.7	1.5±0.7	$P=0.820$
Family income			
Enough	59.4	40.6	$X^2=3.360$
Not enough	46.5	53.5	$P=0.186$
More than enough/can save	59.5	40.5	
Wife share in expenditure			
Yes	52.9	47.1	$X^2=0.001$
No	53.1	46.9	$P=0.986$
Type of infertility			
Primary	45.9	54.1	$X^2=8.115$
Secondary	67.2	32.8	$P=0.004^*$

Table 6 Continued...

Socio-demographic characteristics	Exposure to financial violence (n=200)		Significance
	Upper Egypt (n=100)%	Lower Egypt (n=100)%	
Gender of children (n=67)			
Male	88.9	11.1	$\chi^2=9.678$ P=0.002*
Female	52.5	47.5	
Duration of infertility (years)			
Min-Max	1.0-21.0	1.0-30.0	Z=1.371 P=0.170
Median (Q1-Q3)	5.0 (3.0-8.0)	5.0 (2.0-11.3)	

χ^2 , chi-square test; t, student t-test; Z, mann whitney test, *significant at $P \leq 0.05$.

Discussion

Since the beginning of human history, infertility has been a serious medical and societal concern.³¹ Infertility is still a very common condition on a global scale in the second decade of the new millennium. Between 8.0% and 12.0% of couples in reproductive age are thought to be affected by infertility globally, with 9.0% now being suggested as the likely norm.³² Due to postponed childbearing, primary infertility, high divorce rates, and delayed marriage, fertility rates have recently been falling quickly in western industrialized nations. This is partly explained by the tendency of some women to put off having children until their mid- to late-30s and the resulting decline in fertility after the age of 35. In contrast, early first marriages and minimal conscious effort to defer birth are more typical in the developing world.^{33–38} According to the American Society for Reproductive Medicine (ASRM, 2008), 10% to 15% of couples of reproductive age experience infertility, which is regarded as an issue in almost all cultures and nations.³⁹ One of the key transitions in women's adult lives is becoming mothers. Failure to grant a child's wish is perceived as a stressful scenario. It has been linked to several psychological and emotional conditions, such as stress, tension, anxiety, and depression. In the context of their infertility, couples may face stigma, a sense of loss, and lowered self-esteem.⁴⁰

One of the most urgent public health issues affecting women today is violence against women, particularly intimate relationships and sexual violence. Violence of this kind impacts the physical, sexual, reproductive, emotional, mental, and social health of the individual and their family, in addition to breaching fundamental human rights. According to Satyanarayana and Theesan⁴¹ domestic violence (DV) against infertile women is a serious health issue that negatively affects their wellbeing. Our aim of the current study was investigate the magnitude and types of domestic violence among infertile women seeking infertility treatment in Beni-Suef City involved 200 infertile women. A total of 200 infertile women reported history of having experienced violence as a result of their infertility. There were no significant differences between the women in Upper and Lower Egypt groups in the most of their Socio-demographic and infertility characteristics (mean age, education, occupation, family income, type of infertility, gender of children, and duration of infertility). These indicate homogeneity of the study sample. Our findings indicated that the studied upper and lower infertile Egyptian women, respectively, had a mean age of 28.9 ± 8.5 & 29.1 ± 6.4 years, and a higher-than-average proportion had a secondary or technical education. Moreover, almost half of them did not have sufficient family income. These findings are corroborated by a study by Afkhamzadeh et al.⁴² which found that a majority of women had secondary education. Despite inconsistent with a survey by Fiebai et al.⁴³ that revealed the majority of women had bachelor's degrees.

Additionally, the recent findings showed that about two-thirds of the analyzed upper & lower Egyptian infertile studied women (65.0% & 68.0%), respectively, had primary infertility. Additionally, between

1 and 10 years of infertility affected about 68.0% of upper Egyptian studied sample compared to 81.0% of lower Egyptian studied sample. According to these findings, which were corroborated by a study by Rijal et al.⁴⁴ the majority of the study's female participants experienced primary infertility, with roughly two thirds of them experiencing it for longer than two years. In addition, Ghoneim et al.⁴⁵ found that the duration of infertility was 3.73 ± 3.61 and more than two-thirds had primary infertility. Regarding exposure to violence among the studied infertile women from Upper and Lower Egypt, the results of the current study reveals that high percentage women either upper Egyptian or lower Egyptian infertile women experienced and exposed various forms of domestic violence (physical, verbal, sexual, and financial). All form of violence always practiced by husbands and husband's family. Although there is no statistically significant deference between geographical area (upper or lower) and types of violence experienced by infertile women, all form of violence were more prevalent among upper Egyptian infertile women. The women with infertility reported one or more forms of violence against them. Regarding exposure to violence among the studied infertile women from Upper and Lower Egypt, the results of the current study reveals that physical violence was the commonest form of violence against them ever followed by verbal violence, the financial one, and sexual violence was the last one. The Upper & Lower studied Egyptian women experienced physical violence in about 70.0% & 68.0% and verbal violence in about 69.0% & 62.0% and financial violence in about 48.0% & 46.0% and violence in about sexual violence in about 45.0% & 28.0%, since not been able to have a baby successfully and in the past years, respectively. All form of violence always practiced by husbands and husband's family.

Although there is no statistically significant deference between geographical area (upper or lower) and types of violence experienced by infertile women, all form of violence were more prevalent among upper Egyptian infertile women. Regarding relationship between socio-demographic as well as infertility characteristics of the studied infertile women from Upper and Lower Egypt and exposure to any type of violence (physical, verbal, sexual, and financial). The results of the current study reveal that all types of violence is more prevalent among infertile women in Upper Egypt regardless their age, educational level, occupation, crowding index, family income, wife share in expenditure, type of infertility, gender of children, duration of infertility. This may be due to the fact that in Upper Egypt; infertility is primarily attributed to family stress, as reproduction is crucial for maintaining family name. Studies from Eastern countries show that relatives and families of infertile couples significantly impact treatment-seeking behavior and psychological symptoms.⁴⁶ Infertility is a social onus for Upper Egyptian men, who must have children early in their marriage. Childlessness can result in social stigmatization, blame, and pressure from relatives, family, and society, contributing to psychological problems.⁴⁷ Additionally, a diagnosis of infertility can cause males to question their masculinity, as fertility through fatherhood reflects masculinity.^{47–49} This stigma can lead to stress

and a culture of secrecy, with women sometimes taking blame for the couple's childlessness.⁵⁰ Globally, 10.0% believe fertility through fatherhood reflects masculinity, causing insecurities in infertile men and causing social stigma, stress, and a culture of secrecy, with women sometimes taking blame.^{51,52}

Additionally, the present study found that 70.0% & 78.0% of the studied upper and lower Egyptian women, respectively, experienced physical abuse as a result of infertility. Additionally, 55.7% & 54.4% of them, respectively, were always exposed to physical violence by their husband and husband's family. Additionally, Moreover, around two-thirds of them (69.0% & 62.0%) were subjected to verbal abuse; 76.8% & 80.6% experienced verbal violence by their husband and his family members as a result of their infertility. These findings conflict with a 2019 study by Akpinar et al.⁵³ which claimed that less than one fifth of the investigated women experienced physical assault. Additionally, according to Alijani et al.⁵⁴ 25% of the investigated women who were exposed to various forms of violence experienced physical violence. According to Lotfy et al.⁵⁵ the top three domains with the highest scales were exposure to traditional behaviors, punishment, and domestic violence, with scales of 20.84±7.67, 18.25±4.15, and 14.63 3.18 points, respectively. In addition, Ozturk et al.⁵⁶ showed that one fifth of the women in the study had experienced physical violence. Additionally, our findings indicated that more than one-thirds (45.0%) of the upper Egyptian women compared to only 28.0% in the study exposed to sexual violence. Additionally, nearly half of upper and lower Egyptian infertile women, respectively, (48.0% & 46.0%) were subjected to financial violence. These findings are corroborated by Rijal et al.⁴⁴ who found that 6.2% of respondents experienced economic violence and 12.5% experienced sexual assault. Bondade et al.⁵⁷ also discovered that just 5% of the women in their study had experienced sexual violence. According to Rahedi et al.⁵⁸ more than two-thirds reported having encountered psychological violence, more than half had experienced sexual violence, and more than half had experienced physical violence in the past. Additionally, Poornowrooz et al.⁵⁹ revealed that more than one-quarter were exposed to sexual violence.

Regarding relationship between exposure to physical violence and socio-demographic characteristics of the studied infertile women from Upper and Lower Egypt, the results of the current study reveal statistically significant relationships ($P \leq 0.05$) between the study's upper versus lower infertile women's exposure to physical violence and their age, the gender of their children, the crowding index, and the type of infertility. This may attribute to male kid is very curial issue in Upper Egypt as he is the responsible one who carry and extend the family name. These findings are in line with those of Ali and Prince⁶⁰ who found a highly statistically significant correlation between the overall level of domestic violence among infertile women exposed to domestic violence and their level of education, occupational status, place of residence, length of marriage, and presence of a second wife to their husband ($p < 0.05$).

Regarding Relationship between exposure to verbal violence and socio-demographic characteristics of the studied infertile women from Upper and Lower Egypt, The results of the current study reveal a statistically significant relationship ($P \leq 0.05$) between the study's upper versus lowers infertile women's exposure to verbal violence and the gender of their children. These findings are at odds with those of Basar and Demirci⁶¹ who found a strong correlation between the mean SDVAW score and level of education ($p \leq 0.05$). According to Lotfy et al.⁵⁵ study, psychological violence and verbal abuse were the most prevalent types of DV.

According relationship between exposure to sexual and financial violence and infertility characteristics of the studied infertile women from Upper and Lower Egypt, the results of the current study reveal a statistically significant relationship ($P \leq 0.05$) between the study's upper versus lowers infertile women's exposure to sexual and financial violence and type of infertility. These findings, which differ from those of Iliyasa et al.⁶² demonstrated that work in the informal sector, a lack of formal education, and having a spouse who is unemployed or has a poor level of education were all independently related to sexual assault. Additionally, Afkhamzadeh et al.⁴² noted that women with self-employed spouses reported higher probabilities of sexual assault than women with partners who were employees ($OR = 1.96$ (1.11-3.4)). But compared to women whose spouses had university-level education, those whose spouses had primary or secondary education reported a lower incidence of sexual assault $OR = 0.17$ (0.05–0.57). Moreover, these findings support a study by Celik& Kirca⁶³ that found no association between economic aggression and residency, work position, or age. Additionally, Wang et al.⁶⁴ found a correlation between education level and the outcome.

Conclusion

All women either upper Egyptian or lower Egyptian infertile women experienced and exposed all forms of domestic violence (physical, verbal, sexual, and financial). There is no statistically significant deference between geographical area (upper or lower) and types of violence experienced by infertile women, however all form of violence were more prevalent among upper Egyptian infertile women.

Recommendation

- I. Nurses play a crucial role in counseling and guidance for infertile couples, requiring expertise in mental health, maternity, and gynecologic health. Training in psychological and social domains is essential for nurses in fertility settings to better understand clients' challenges and adapt to daily challenges.
- II. Healthcare professionals should take spouse presence into account and provide effective counseling about the negative effects of all forms of violence
- III. It is recommended that additional research be done with a larger sample from other provinces of Upper Egypt with regard to infertility and its psychological effects.
- IV. The relationship between violence and reproductive results requires more study, as do effective psychosocial interventions. Research on emotions and coping mechanisms within the context of treatment is particularly important.

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Conflicts of interest

The author declares that there are no conflicts of interest.

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