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Intimate partner violence against infertile women

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Abstract: *Violence against women is a global public health issue that has serious implications on women's health. Infertility is a very stressful condition that affects social and marital life of a couple. Compared to fertile women, infertile women are twice as vulnerable against violence*
This study
Aimed *to identify the intimate partner violence against infertile women attending El-Shatby Maternity University Hospital.*
Methods: *A simple descriptive research design was utilized.*
Setting*: The study was conducted at the infertility outpatient clinic for in-vitro fertilization (IVF), gynecologic outpatient clinic and gynecologic inpatient ward affiliated to El-Shatby Maternity University Hospital in Alexandria.. The study was carried out from the beginning of November 2017 till the end of March 2018. A convenient*
sample *of 300 infertile women was selected from the previously mentioned setting according to the following criteria: age ranged from 15-49 years, Married for at least one year without using any contraceptive methods and had primary infertility.Two tools were used to collect the necessary data. 1) A socio-demographic and clinical data structured interview schedule. 2) Intimate Partner Violence against infertile women structured interview schedule.*
The results *revealed that the majority (96.3%) of women were exposed to psychological violence, one-half (50.7%) of them were exposed to physical violence. And less than one-half (45.7 %) of them were exposed to sexual violence. A statistically significant difference was found between the wife's age and the exposure to sexual violence. Where, less than one-half (46.7%) of women who exposed to sexual violence aged 30 to less than 40 years. Another statistically significant difference was observed between women's residence and exposure to physical violence. In this regard, more than three-fifths (61.8%) of women who exposed to physical violence were living in rural areas.*
Conclusion:*Infertile women were exposed to different patterns of intimate partnerviolence as physical, psychological and sexual patterns. Reasons for violence were considered to be primarily domestic issues that may have been related to female infertility.*
Recommendation:*Routine screening for intimate partner or domestic violence in infertility clinics should be mandatory to identify the victims, and provide them with appropriate health care and supportive services.*
Key ward: *Infertility- Intimate partner violence-domestic violence*

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I. Introduction

Reproduction is a natural desire and a fundamental human need. It is considered to be the most important element for enduring marital relationship (1). The desire to have children is strong and compelling, so infertility can be devastating for couples who are unable to conceive (2). The woman who gives birth to alive as well as healthy child is expected to feel proud and she is highly valued in her society. Consequently, infertility is not only a gynecological illness but also a bio-psycho-social health problem (3).

Infertility has always existed but it is now recognized as a global reproductive health (RH) problem and as an important component of RH (4,5).According to World Health Organization (WHO), infertility is defined as "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" (6,7). Infertility is rarely absolute, and most couples have a degree of subfertility. Around 84% of the normal fertile population will conceive within 1 year of regular, unprotected intercourse, and 92% by the end of 2 years (8). There are two types of infertility, primary and secondary. Primary infertility is a condition where couples, who have no previous pregnancies, are unable to conceive. Secondary infertility is a condition where couples, who have at least one previous pregnancy, are unable to conceive (9).

Infertility is a global health issue that affects approximately one in six couples at some stage in their life [8]. It varies across regions of the world and affects 10-15% of couples worldwide [10,11]. In addition, WHO estimates that there are 60-80 million infertile couples worldwide with the highest incidence in some regions of Sub-Saharan Africa which is said to have an "infertility belt" warped around its center, as infertility rate may reach 50% compared to 20% in Eastern Mediterranean Region and 11% in the developed world [12].**In Egypt**, although the estimates of infertility prevalence are not very accurate from region to another, about 10.4 % of couples experience some form of infertility problem during their reproductive lives. The prevalence of primary infertility among Egyptian females at reproductive age was 2.5 %, while the prevalence of secondary infertility among them was 7.9 % [13].

When the role of women at any society is determined according to their capacity to reproduce, infertility becomes a threat for marital life stability [14]. It could lead to serious implications for women's psychological, physical, economic and social well-being. Where motherhood is a confirmation of their feminine as well as maternal identities. Furthermore, the infertile woman could become a victim of various forms of violence especially domestic violence [15].

Generally speaking violence against women is a major health and human right concern [16].The prevalence of violence ranges between 15%-71% worldwide [17].Global estimates published by WHO indicated that about one in three (35%) women worldwide had experienced either physical and/or sexual violence in their lifetime [18]. On the other hand, Egypt Demographic and Health Survey (EDHS) 2014 estimated that one in four women aged 15-49 years reported physical violence by their husbands [19].

One of the most common forms of violence against women is intimate partner violence [20].This type of violence refers to violence perpetrated against adolescent or adult females within the context of family or marital relationships [21].Each year, 5.3 million cases of domestic violence are reported by women aged above 18 years old [22].

Violence affects women of all ages, races, and ethnic backgrounds, from all socioeconomic levels, all educational levels, and all walks of life [20].Violence cannot be attributed to a single cause. Infertility is a factor which contributes to marital violence when it is combined with other risk factors such as women's educational status and age at marriage [23].

Infertility is another face of violence against women which introduces many factors that may induce or increase violence [24]. Following an infertility diagnosis, the couple begins to have physical, psychological and financial problems. They experience a stressful period that is created by the high cost of treatment procedures, costly tests, and ongoing visits to infertility clinics that are sometimes located in distant cities which require extensive traveling. Besides, they also endure by a definite sexual intercourse timetable which is established by the physician. In addition, women suffer from stress and conflicting emotions because of the pressures of family and society to have a baby as soon as possible and they are not able to explain the problem [25].

Moreover, diagnosis and treatment of infertility significantly decreases marital quality by having a negative effect on the couple's sexual life , communicating with family and friends, and having a role distribution in the family. These factors that decrease marital quality and satisfaction are also reported to be risk factors that contribute to marital violence [26]. Furthermore, Hormonal changes during the treatment of infertility have a significant impact on the emotions of infertile couples. Therefore, the rate of aggression increases in individuals receiving treatment for infertility. When men feel powerless and have low self-esteem, they react through aggressive behavior. While, aggression in women is manifested through the transitory loss of self-control, high stress levels, social pressure and extreme feeling of guilt. Aggressive behavior in infertile men is also considered as a major risk factor for violent behavior. Consequently, all these factors may challenge the personal life of infertile couples [27].

In Islamic countries, childbearing is considered highly desirable, where an absence of children with a first wife may lead husbands to take a second wife with or without divorcing the first one [28].Consequently, women experience anxiety and stress every month at the beginning of theirmenstrual cycle when trying to conceive. Infertile couples also experience chronic stress each month in case of the failure of fertilization. Hormonal changes during the treatment of infertility have a significant impact on the emotions of infertile couples. All these factors may challenge the personal life of infertile couples [27, 29].

Nurses play a major role in combating violence against women through the application of the three levels of prevention. Primary prevention aims at stopping violence from happening in the first place. Secondary prevention focuses on dealing with abusers in early stages, with the goal of preventing progression of abuse. Tertiary prevention, activities are geared toward helping severely abused women to recover and become productive members in the society [30].

Violence against infertile women, although considerable, is an unreported problem. Therefore, it is believed that studying the infertility-violence relationship in different societies and in couples from different socio-economic levels will increase the reliability of the findings that are related to violence against infertile women [23].Little is known about the domestic violence against infertile women. Thus, this study aims at identifying the

profile of domestic violence against infertile women. The result will enrich health care providers (especially nurses) with comprehensive information about violence against infertile women. Consequently, they definitely will provide more appropriate nursing care [31].The aim of the study was to identify the intimate partner violence against infertile women attending El-Shatby Maternity University Hospital.

II. Materials And Method

Materials

Research design: A simple descriptive research design was adopted in this study.

Setting: This study was conducted at El-Shatby Maternity University Hospital in Alexandria, specifically: Infertility outpatient clinic for in-vitro fertilization (IVF), gynecologic outpatient clinic and gynecologic inpatient ward (Infertile cases such as laparoscopic and fibroid cases).
These clinics receive women from Alexandria and the surrounding rural areas that were referred either for primary infertility investigations or under infertility treatment. The working hours of these clinics are from 9 am to 1 pm all days per week except Friday. This hospital was particularly chosen because the turnover was satisfactory for the study. Also it represents different socio-economic and educational levels of the study subjects.

Subjects and Criteria: A convenient sample of approximately 300 infertile women who were available at the time of data collection was recruited from the above mentioned setting. All subjects fulfilled the following inclusion criteria: Women at reproductive age (15-49 years), married for at least one year without using any contraceptive methods, had primary infertility and willing to participate in the study.

Sample Size: The Epi-info 7 statistical program was used to estimate the sample size by applying the following information:
Population size : 900 over 3 months,
Expected frequency: 50%
Acceptable error: 5%
Confidence coefficient: 95%
Minimal sample size : 270

Tools for data collection: Two tools were used to collect the necessary data:
Tool I: Socio-demographic and clinical data structured interview schedule: This tool was developed by the researchers based on recent relevant literature. It included four parts:
Part1: Socio-demographic characteristics: Such as age, age at marriage, duration of marriage, religion, level of education, occupation, residence, family type, crowding index and family income.
Part 2: Couple's health status: Past and present medical history for women.
Part 3: Gynecological history: Past and present gynecological history such as menstrual irregularities, vaginitis, cervicitis, cervical tumor, ovarian tumor, salpingitis and uterine prolapse. Surgical history such as curettage and laparoscopy.
Part 4: Infertility profile: Such as duration, causes, duration of treatment, investigations and frequency of in-vitro fertilization (IVF) attempts. In addition to the traditional practices which were used for treatment of infertility such as consulting traditional healers, herbs, women's sudden shock, magic and zaar, visiting mausoleums and carrying written amulets.
Tool II: Intimate partner Violence against infertile women structured interview schedule: It consisted of two main parts:-
Part 1: Patterns of violence: This tool was developed by Güliz Onat (2014)to determine the pattern of violence against infertile women [124]. It was adapted and translated into Arabic language by the researcher. It consisted of three sections:

A. **Physical violence:** Forms of physical violence such as kicking, pushing, slapping, twisting arm, throwing with objects, threatening or hitting with sharp instruments, exposure to heavy punishment such as tough housework and forcing woman to several traditional practices such as consulting traditional healers and using traditional drugs.
B. **Psychological violence:** Isolation, deprivation from food or medical care, Negative comparison to fertile women, Public humiliation.

- Threatening with divorce or getting married to a fertile woman.
- Uses of grieving names by others as (infertile, unproductive).
- Pushing her to declare that she is the infertile one.

- Ignoring her decisions.
- Others intrusion in her private matters.

C. Sexual violence:

- Forced sex.
- Humiliation during marital relation.
- Deprivation from sexual satisfaction.
- Husband avoidance with sexual relation.

Part 2: Violence correlates: It contained three main sections:
A: Reasons for violence: such as family pressure, High cost of treatment, un-accessibility of treatment, difficulty to follow sexual intercourse timetable as physician order, and repeated or failed IVF.
B: Violence aggressors such as husband, husband's family, wife's family, friends and neighbors.
C: Subject's response to violence such as: Leaving home, requesting divorce, Isolation, crying, discontinuation of treatment, seeking help and refraining from help.

Method: The study was executed according to the following steps:-

1. An official letter from the Faculty of Nursing, Alexandria University was submitted to the responsible authorities of the study setting to take their permission for data collection after explanation of the purpose of the study.
2. Tool I and II (part 2) were developed by the researcher after extensive review of recent relevant literature.
3. Tool II (part 1) was adapted and translated into Arabic language by the researcher.
4. The study tool was reviewed and tested for content validity by seven experts in the related fields of Obstetric and Gynecological Nursing and Public Health Nursing. The required modifications were carried out accordingly.
5. Tools' reliability was tested by Cronbach's Alpha Coefficient (Internal consistency). The reliability result for the tool was r = 0.774 which is considered acceptable.
6. A pilot study was carried out on 30 women (excluded from the study subjects) to test the feasibility of the tools as well as to ascertain their clarity and applicability. In addition, the time needed to complete the tools was also estimated. Based on the results of pilot study tools were revised, reconstructed and made ready for use.
7. Written informed consent from every woman before the outset of the interview was taken after explanation of the aim of the study. Each participant was assured about the confidentiality of the collected data.
8. Each woman was interviewed individually while attending gynecologic outpatient clinic or during her stay in gynecologic inpatient department of the previously mentioned setting.
9. Participation in the study was voluntary, and the spouses of infertile women weren't required to be present at the time of interviews due to the sensitivity of the subject.
10. Data was collected by using the developed tools through an interview method after explanation of the objectives of the study. Data was collected from previously mentioned settings for three days weekly, mainly Saturday, Monday and Thursday, each week. Around three to five women were interviewed daily in the waiting area by the researcher.
11. Data collection covered a period of five months started from the beginning of November 2017 till the end of March 2018.
12. Statistical analysis was done by the researcher after collection of data. Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp).Qualitative data were described using number and percent. Quantitative data were described using range (minimum and maximum), mean, and standard deviation. Significance of the obtained results was judged at the 5% level.Chi-square-test and Fisher's Exact or Monte Carlo correction test with significant at ≤ 0.05 level were used to find out the statistical significant difference of the results.

Ethical consideration:

Securing subject's oral informed consent, keeping the subject's privacy, assuring the subjects data confidentiality, and the right to withdraw at any time was considered for each recruited subject in the study.

III. Results

Table (1) presents distribution of women according to their socio- demographic characteristics. **Regarding age**, it was observed that less than one-half (47.7%) of women aged 30 to less than 40 years. While more than two-fifths (41%) of them aged 20 to less than 30 years. Thus, the mean age of women was30.01 ± 6.15. **Considering age at marriage**, it was revealed that more than one-half (54%) of women married at the age of 15 to less than 25 years, and Only 1.7% of them married at the age of less than 15 years. The mean age of women at marriage was 24.30 ± 6.09. **In relation to the duration of marriage**, it was clear that more than five years among less than one-half (45.7%) of women, while it was less than five years among more than two-fifths (43%) of them.

Concerning the level of education, it was clarified thatone-third (33.7%) of women were illiterate or read and write, while those who had basic and secondary education constituted 18.3% and 27% of them respectively. **Regarding occupation**, it was illustrated that the majority (82.3%) of women were housewives. According to those who had jobs, more than three-quarters (79.2%) of them were working as professional workers, while one-fifth (20.8%)of them were working as non-professionals. **Concerning women's residence,** more than one-half (54.7%) of women were living in rural areas.

In relation to family type, it was found thatmore than two-thirds (71%) of women had nuclear family **and** it was noticed that all (100%) women had a crowding index 1-3 persons. The mean crowding index was 1.20 ± 0.38.**Regarding family income,** it was obvious that income was just enough for a living among about three-quarters (74.3%) of women, and only 2% of them had income that is enough and can save from it. Furthermore, it was noticed that slightly more than one-half (51%) of womenkept some of their income for themselves, while more than one-third (35.8%) of them gave all of their income to their husbands.

Table (1): Number and percent distribution of the study subjects according to their socio-demographic characteristics

Socio-demographic characteristics	No. (n=300)	%
Age (years)		
<20	15	5.0
20 – 30	123	41.0
30 – 40	143	47.7
≥40	19	6.3
Min. – Max.	17.0 – 47.0	
Mean ± SD.	30.01 ± 6.15	
Age at marriage (years)		
<15	5	1.7
15–25	162	54.0
25–35	115	38.3
≥35	18	6.0
Min. – Max.	12.0 – 43.0	
Mean ± SD.	24.30 ± 6.09	
Duration of marriage (years)		
< 5	129	43.0
5	34	11.3
> 5	137	45.7
Religion		
Muslim	292	97.3
Christian	8	2.7
Level of education		
Illiterate or read and write	101	33.7
Basic education	55	18.3
Secondary	81	27.0
University or higher level	63	21.0
Occupation		
Housewives	247	82.3
Working	53	17.7
Type of work	**(n = 53)**	
Professional	42	79.2
Non professional	11	20.8
Residence		
Rural	164	54.7
Urban	136	45.3

Table (1): Cont. Number and percent distribution of the study subjects according to their socio-demographic characteristics

Socio-demographic characteristics	No. (n=300)	%
Family type		
Nuclear	213	71.0
Extended	87	29.0
Crowding index		
1-	300	100.0
3-	0	0.0
5+	0	0.0
Min. – Max.	0.67 – 2.0	
Mean ± SD.	1.20 ± 0.38	
Family income		
Enough and save	6	2.0
Just enough for a living	223	74.3
Not enough	71	23.7
Women's control over their income	**(n = 53)**	
Give all income to husband	19	35.8
Keep some for her self	27	51.0
Keep all for her self	7	13.2

Table (2) reveals distribution of women according to their health status. It was clear that the majority (90.7%) of women had no **medical diseases**, while 9.3% of them had medical diseases such as hypertension (35.7%), diabetes mellitus (28.6%), and hypotension (25%). The table also demonstrates that more than two-fifths (46.7%) of women had **past history of gynecological diseases** such as menstrual irregularities (60%) and vaginitis (15%). In addition, cervicitis, salpingitis and endometrial cancer were reported by 8.6%, 7.1% and 5% of them respectively.

In relation to recent complaining of gynecological diseases, it was found that slightly more than three-fifths (61%) of women were complaining of gynecological diseases. One-third (33.3%) of them reported uterine diseases, ovarian diseases (30.1%), and fallopian tube obstruction (29.5%). Ovulation disorders were reported by 7.1% of them. The table also illustrates that more than two-fifths (43.3%) of women had **surgical history**. Of those who reported having surgical history, the majority (80.8%) of them reported doing laparoscopy, while less than one-six (15.4%) of them reported doing hysteroscopy. Surgical removal of ovarian cyst and cholecystectomy were done by equal sizable proportion (1.5% and 1.5%) of them.

Table (2): Number and percent distribution of the study subjects according to their health status

Women's health status	No. (n=300)	%
Presence of medical diseases		
No	272	90.7
Yes	28	9.3
Types of medical diseases	**(n = 28)**	
Hypertension	10	35.7
Diabetes mellitus	8	28.6
Hypotension	7	25.0
Others*	3	10.7
Past history of gynecological diseases		
No	160	53.3
Yes	140	46.7
Type of gynecological diseases **	**(n = 140)**	
Menstrual irregularities	84	60.0
Vaginitis	21	15.0
Cervicitis	12	8.6
Salpingitis	10	7.1
Endometrial cancer	7	5.0
Cervical tumor	3	2.1
Ovarian tumor	1	0.7
Others #	20	14.3
Recent complaining of gynecological diseases		
No	117	39.0
Yes	183	61.0
Type of gynecological diseases	**(n = 183)**	
Uterine diseases (adhesions, endometriosis, fibroids, septum, bicornuate, polyp)	61	33.3
Ovarian diseases (Polycystic ovary, cyst, tumor)	55	30.1
Fallopian tube obstruction	54	29.5
Ovulation disorders	13	7.1
Surgical history		

No	170	56.7
Yes	130	43.3
Type of surgery	**(n = 130)**	
Laparoscopy	105	80.8
Hysteroscopy	20	15.4
Surgical removalof ovarian cyst	2	1.5
Cholecystectomy	2	1.5
Appendectomy	1	0.8

* Others as (arthritis, thyroid disorder, anemia)
\# Others as (fallopian tube obstruction, endometriosis, polycystic ovary syndrome, bicornuate uterus, ovarian cyst)** More than one answer

Table (3) reveals distribution of women according to their infertility profile. Regarding **duration of infertility**, it was clarified that more than two-thirds (68.7%) of women were infertile for more than 3 years, while 13.6% of them were infertile for 2 years. **Concerning cause of infertility,** it was obvious that more than one-half (51.3%) of women had female factor infertility, while more than one-fifth (22%) of them had unexplained infertility. It was clear that all (100%) women were seeking medical care and doing investigations. **In relation to medication intake,** more than one-half (55.3%) of women were taking medications such as stimulants (70.5%), medications for polycystic ovaries and regulation of menstruation (21.7% and 4.2% respectively).

The table also reveals that the **duration of infertility treatment** was more than 5 years in less than one-half (45.3%) of women, and less than 5 years in more than two-fifths (44.7%) of them.It was found that one-third(33.3%) of women underwent in-vitro fertilization at least once (76%). The table also illustrates that about one-quarter (25.3%) of women reported doing traditional practices such as: herbs (43.4%), visiting graveyards (39.5%), visiting religious leaders (19.7%), and traditional healers (13.2%).

Table (3): Number and percent distribution of the study subjects according to their infertility profile

Infertility profile	No. (n=300)	%
Duration of infertility (years)		
1	6	2.0
2	41	13.6
3	47	15.7
> 3	206	68.7
Causes of infertility		
Female factor infertility	154	51.3
Male factor infertility	53	17.7
Combined male and female factors	27	9.0
Unexplained infertility	66	22.0
Seeking medical care		
No	0	0.0
Yes	300	100.0
Investigations	**(n = 300)**	
No	0	0.0
Yes	300	100.0
Medication intake		
No	134	44.7
Yes	166	55.3
Type of medication intake	**(n = 166)**	
Stimulants	117	70.5
Treatment for polycystic ovaries	36	21.7
Treatment for regulation of menstruation	7	4.2
Anti-inflammatory	4	2.4
Others (Anticoagulants, Antibiotics)	2	1.2

Table (3): Cont. Number and percent distribution of the study subjects according to their infertility profile

Infertility profile	No. (n=300)	%
Duration of infertility treatment (years)		
< 5	134	44.7
5	30	10.0
> 5	136	45.3
In-vitro fertilization (IVF) attempts		
No	200	66.7
Yes	100	33.3
Frequency of IVF attempts	**(n= 100)**	
Once	76	76.0
Twice	17	17.0
+ Twice	7	7.0
Traditional practices		

No	224	74.7
Yes	76	25.3
Type of Traditional practices**	**(n = 76)**	
Herbs	33	43.4
Visiting graveyards	30	39.5
Visiting religious leaders	15	19.7
Traditional healers	10	13.2
Hijama	5	6.6
Others #	8	10.5

Others as (Crossing over placenta of delivered woman, Taking bath by necklace, Mushahara)
**More than one answer

Figure (1) presents distribution of women according to their patterns of *intimate partner*violence. It was observed that the majority (96.3%) of women were exposed to psychological violence, one-half (50.7%) of them were exposed to physical violence. And less than one-half (45.7 %) of them were exposed to sexual violence.

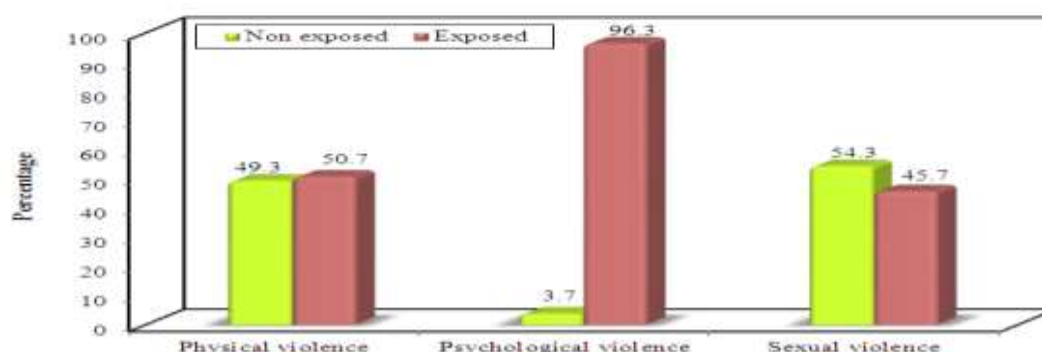

Figure (1): Distribution of the study subjects according to their patterns of *intimate partner*violence

Table (4) presents distribution of women according to their exposure to physical violence. **Concerning forms of physical violence,** women had experienced different forms of physical violence. It was found that less than one-half (46.1%) of women were exposed to several traditional practices by husband or mother in law, while about two-fifths (39.5%) of them were exposed to tough housework. **As regards beating in the presence of others,** it was observed thatonly 10.5% of women had been beaten in the presence of others such as husband's family (68.75%) and neighbors (18.75%). **In relation to last time of beating**, more than one-half (56.25%) of women reported beating from long time ago. All (100%) women did not seek any medical care for their injuries.

Table (4): Number and percent distribution of the study subjects according to their exposure to physical violence

Woman exposure to physical violence	No. (n=152)	%
Forms of physical violence **	**(n = 152)**	
Forced to do several traditional practices by husband or mother in law	70	46.1
Exposure to tough housework	60	39.5
Slapping	10	6.6
Twisting arm	7	4.6
Pushing	6	3.9
Kicking	4	2.6
Throwing with objects	3	2.0
Others (threatening with killing)	1	0.7
Beating in presence of others	**(n = 152)**	
No	136	89.5
Yes	16	10.5
If yes, whom	**(n = 16)**	
Husband 's family	11	68.75
Neighbors	3	18.75
Others (at the street and doctor 's clinic)	2	12.5
Last time of beating	**(n = 16)**	
Long time ago	9	56.25
Recent	7	43.75
Presence of injuries	**(n = 16)**	
No	15	93.75
Yes	1	6.25

Seeking medical care	(n =16)	
No	16	100.0
Yes	0	0.0

** More than one answer

Table (5) presents distribution of women according to their exposure to psychological and sexual violence. **Concerning the forms of psychological violence**, women had experienced different forms of psychological violence such as quarrel (56.1%), isolation (37.4%) and negative comparison to fertile women (17.3%). In addition, contempt, mockery and throw her out of home were reported by 10.4%, 9.7% and 1.4% of women respectively. The table also shows that the majority (98.6%) of women were exposed to others intrusion in her private matters, while more than one-half (58.1% and 53.6%) of them respectively were exposed to public humiliation and grieving names by others as (infertile, unproductive). Furthermore, less than one-third (30.4%) of them were threatened with divorce. In addition, equal sizable proportion (18.7% and 18.7%) of them were exposed to threatening with getting married to a fertile woman and ignoring her decisions.

Regarding exposure to sexual violence, the table also reveals that less than three-quarters (70.1%) of women reported that the husband has the right to have sex at any time. While more than two-fifths (43.8%) of them reported husband avoidance with sexual relation.On the other hand, more than one-third (35%) of them were deprived from sexual satisfaction. Only 7.3% of them were humiliated during marital relation.

Table (5): Number and percent distribution of the study subjects according to their exposure to psychological and sexual violence

Woman exposure to psychological violence	No. (n=289)	%
Forms of psychological violence **		
Quarrel	162	56.1
Isolation	108	37.4
Negative comparison to fertile women	50	17.3
Contempt	30	10.4
Mockery	28	9.7
Throw her out of home	4	1.4
Threatening with divorce		
Yes	88	30.4
No	201	69.6
Threatening with getting married to a fertile woman		
Yes	54	18.7
No	235	81.3
Public humiliation		
Yes	168	58.1
No	121	41.9
Uses of grieving names by others as (infertile or unproductive)		
Yes	155	53.6
No	134	46.4
Pushing her to declare that she is the infertile one		
Yes	15	5.2
No	274	94.8
Ignoring her decisions		
Yes	54	18.7
No	235	81.3

Woman exposure to sexual violence	No. (n=137)	%
Husband has the right to have sex at any time		
Yes	96	70.1
No	41	29.9
Forced sex		
Yes	3	2.2
No	134	97.8
Humiliation during marital relation		
Yes	10	7.3
No	127	92.7
Deprivation from sexual satisfaction		
Yes	48	35.0
No	89	65.0
Husband avoidance with sexual relation		
Yes	60	43.8
No	77	56.2

**More than one answer

Table (6) presents distribution of women according to violence correlates. **Regarding reasons for domestic violence,** it was found that more than one-half (58.7%) of women reported exposure to violence due to family pressure of both couples. While more than one-third (35%) of them were exposed to violence due to high cost of treatment. On the other hand, more than one-fifth (21.3%) of them were exposed to violence due toun-accessibility of treatment. **Concerning violence aggressors**, it was obvious thatabout two-thirds (65.7%) of women had experienced violence from husband's family**,** while about one-half (50.3%) of them had experienced violence from their husbands.On the other hand, 9.7% of them had experienced violence from the wife's family. The table also illustrates **women's response to violence**, multiple responses were obtained i.e. isolation (43.7%), crying and shouting (24.7%), leaving home (17.3%) anddiscontinuation of treatment (9.7%). No reaction and requesting divorce were the response of 8.3% and 2.7% of them respectively.

Concerning seeking help, it was observed that less than one-half (47.7%) of womensought help when they were exposed to violence. **In relation to helping persons,** the majority (87.4%) of women sought help from wife's family followed by husband's family (7%). Only 5.6% of them sought help from friends or neighbors. **Considering reasons for not seeking help,** it was noticed that slightly more than one-half (51.6%) of women reported that violent act is to be considered an individual matter, while about one-fifth (19.1%) of them were afraid of getting married to a fertile woman.

Table (6): Number and percent distribution of the study subjects according to violence correlates

Violence correlates	No. (n=300)	%
Reasons for domestic violence **		
Family pressure of both couples	176	58.7
High cost of treatment	105	35.0
Un-accessibility of treatment	64	21.3
Repeated or failed IVF	31	10.3
Having problems with husband's family	18	6.0
	9	3.0
Difficulty to follow sexual intercourse timetable as physician order		
	21	
Others #		7.0
Violence aggressors **		
Husband 's family	197	65.7
Husband	151	50.3
Wife's family	29	9.7
Friends and neighbors	28	9.3
Subject 's response to violence **		
Isolation	131	43.7
Crying and shouting	74	24.7
Leaving home	52	17.3
Discontinuation of treatment	29	9.7
No reaction	25	8.3
Requesting divorce	8	2.7
Others (Speak together to find solution)	1	0.3
Seeking help		
Yes	143	47.7
No	157	52.3
Helping persons	**(n = 143)**	
Wife's family	125	87.4
Husband 's family	10	7.0
Friends or neighbors	8	5.6
Reasons for not seeking help **	**(n = 157)**	
It is considered individual matter	81	51.6
Afraid of getting married to a fertile woman	30	19.1
Afraid of not giving money for treatment	17	10.8
Can't complain	12	7.6
Afraid of getting divorce	10	6.4
Others *	11	7.0

**More than one answer # others as (Continuous treatment for long periods, Refraining from medical care ,Refuse to do IVF).
* Others as (Afraid of hitting, Afraid of problems with husband's family)

According to table (7) a significant difference was found between the wife's age and the exposure to sexual violence (p = 0.018). In this regard, less than one-half (46.7%) of womenwho exposed to sexual violence aged 30 to less than 40 years. On the other hand, no significant difference was observed between the wife's age and the exposure to physical and psychological violence. Concerning women's residence, there was also a significant difference between women's residence and exposure to physical violence (p = 0.011). In this regard,slightly more than three-fifths (61.8%) of women who exposed to physical violence were living in rural

areas. On the other hand, there is no significant difference between women's residence, husband's occupation and exposure to psychological and sexual violence.

Table (7): Relation between socio-demographic characteristics and patterns of intimate partnerviolence

	Physical violence		Psychological violence		Sexual violence	
	Yes (n=152)		Yes (n=289)		Yes (n=137)	
	No.	%	No.	%	No.	%
Wife's age (years)						
<20	9	5.9	15	5.2	10	7.3
20-30	59	38.8	117	40.5	60	43.8
30– 40	73	48.0	139	48.1	64	46.7
≥40	11	7.3	18	6.2	3	2.2
χ^2(p)	1.287(0.732)		1.409^{MC}P=(0.647)		10.03* (0.018*)	
Wife's level of education						
Illiterate or read and write	53	34.9	97	33.6	41	29.9
Basic education	28	18.4	55	19.0	26	19.0
Secondary	45	29.6	78	27.0	39	28.5
University or higher level	26	17.1	59	20.4	31	22.6
χ^2(p)	3.134(0.371)		3.420 MCP=(0.316)		1.624(0.654)	
Residence						
Rural	94	61.8	158	54.7	83	60.6
Urban	58	38.2	131	45.3	54	39.4
χ^2(p)	6.401* (0.011*)		0.0 ^{FE}P=(1.000)		3.563(0.059)	
Husband's occupation						
Unemployed	4	2.6	5	1.7	4	2.9
Professional	40	26.3	83	28.7	42	30.7
Non professional	106	69.7	199	68.9	91	66.4
Retired	2	1.4	2	0.7	0	0.0
χ^2(p)	4.447^{MC}P=(0.172)		4.350 MCP=(0.301)		3.703 MCP=(0.258)	

χ^2: **Chi square test** MC: **Monte Carlo** FE**: Fisher Exact** *: Statistically significant at $p \leq 0.05$

IV. Discussion

Infertility is a stressful condition as infertile women suffer from anxiety and depression because of not having a child as well as due to the fear of losing husband's interest (32). The situation becomes gloomier for those women who become the victims of violence due to their infertility. Moreover, the infertile women are not only socially stigmatized but also they have to bear the burden of being infertile and becoming the victims of violence (1).

Domestic violence is one of the main social-public health and human rights issues that influence women’s health (33). Women who experience domestic violence are more likely to have depression, anxiety, psychosomatic symptoms, eating problems, and sexual dysfunctions. Furthermore, the effects of violence may also be fatal as a result of intentional homicide, severe injury, or suicide (34).

The violence against infertile women, although considerable is an unreported problem. Therefore, studying the infertility-violence relationship in different societies and in couples from different socioeconomic levels would enrich health care providers (especially nurses) with comprehensive information about violence against infertile women. Consequently, they definitely will provide more appropriate nursing care (23). The purpose of this study was to identify the profile of domestic violence against infertile women.

On dealing with data related to women's health status,the results of the present study indicated that uterine diseases such as adhesions, endometriosis, fibroids, septum and polyp are the main causes of infertility. This result is not in line with the finding of **Devroey P et al**(2009) in Iran about "Approaches to improve the diagnosis and management of infertility",. They reported that the main causes of infertility include pelvic infections due to sexually transmitted diseases (STDs) (35).In addition, it doesn't matchesthe study of **Sule J et al** (2008) in Nigeria, about "The prevalence of infertility in women in a South Western Nigerian community Africa". They found that the most common cause of infertility is tubal-peritoneal abnormalities (36). Moreover, the present study revealed that the most common surgery among female was laparoscopy. This finding is incongruent with the findings of **Gichuhi J et al** (2015), who had done a study in Kenya titled "A comparative study on the outcome of open and laparoscopic tuboplasty on patients with tubal factor as the cause of infertility". They concluded that the most common surgery among female was tuboplasty (37).

Regarding the causes of infertility,the results of the present study showed that more than one half of women had female factor infertility. This finding is in accordance with the previously mentioned study **by Otwori C** (2013). Theyhad reported that female factor infertility constituted 52.9 % of women (38).On the other hand, the present study's same results is not in line with the results of two other studies. First, an Iranian study that was done by **Taebi M et al** (2016) titled"Association between infertility factors and non-physical partner

abuse in infertile couples". They concluded that the most common cause of infertility was male factor [39]. Second,**Li L et al** (2013).They conducted a study in China titled "Depression in Chinese men undergoing different assisted reproductive technique treatment: Prevalence and risk factors". They reported idiopathic factor as the most common cause for infertility [40].

Moreover, the current study finding also revealed that slightly more than one six (17.7%) of them had male factor infertility. This small rate of male factor infertility could be attributed to in some African cultures, if male-factor infertility is the problem, there is typically significant denial by all parties (husband, wives, and even caregivers) and a lack of treatment [41]. Yet, women are consistently held responsible for infertility [42].

Children are considered a great treasure and a source of power for women in the family and the society. Indeed, infertile women reported that they had failed as wives and mothers, and that without a child a woman's life had no meaning. These factors had forced infertile women to use various traditional practices to have a child [43].Traditional practices to treat infertility are more widely employed in developing countries, where health facilities and health education are still beyond the reach of the majority of the population.

Concerning the types of traditional practices, which were used by women as a treatment for their infertility, the results of the present study revealed that the most commonly used method was herbs. This result is not in line with a study that was done by **Abd El MoneimA** (2008) in Kafer El- Dawar, Beheira Governorate, Egypt about "Traditional practices for treatment of infertility among rural women". Who reported that rituals were the most common used method such as taking bath by mushahara necklace, visiting mosques and licking certain stone beside the mosque until bleeding of the tongue occurs [44].

Violence affects women of all ages, races, and ethnic backgrounds, from all socioeconomic levels, all educational levels, and all walks of life [20].It is usually divided into three main categories: physical, psychological or emotional and sexual abuse.[45]. On assessing prevalence and patterns of violence in the present study, it was found that, the prevalence of physical, psychological and sexual violence was 50.7%, 96.3% and 45.7%, respectively. The commonest type of intimate partnerviolence experienced by women was the psychological violence. This could be attributed to more than one half of women were living in rural areas, where childbearing is considered a highly desirable aim and a source of power for women in the family and the society. This finding is inconsistent with two other studies. First, a study that was done in Iran by **Sheikhan Z et al** (2014) titled "Domestic violence in Iranian infertile women". They found that the prevalence of physical violence was 5.3%, psychological violence 74.3%, and sexual violence 47.3% in infertile women [46]. Second, another Iranian study which was done by **Ardabily H et al** (2011) titled "Prevalence and risk factors for domestic violence against infertile women in an Iranian setting". They indicated that the prevalence of physical, psychological and sexual violence was 14%, 33.8% and 8% respectively in infertile women, which was lower than the present study [47]. This discrepancy between the aforementioned study results and the finding of the current study may be attributed to the difference in cultural diversities in the study populations, as well as the different data collection tools

Physical violence is defined as any action that threatens the physical well-being of the victim [45]. The present study showed that women had got various punishments such as exposure to traditional practices and tough housework. It was clear that less than one half of women were exposed to several traditional practices by husband or mother in law, while about two fifths of them were exposed to tough housework. This could be attributed tothe majority of women were illiterate andtraditional practices to treat infertility are more widely employed in rural areas [48].

The present finding is relatively consistent with the study of **Onat G** (2014), in the Istanbul about "Development of a scale for determining violence against infertile women ".The study indicated that despite an infertile woman's unwillingness, they were forced to do several traditional practices such as eating some kind of food which is believed to facilitate conception [49].In addition, it relatively matches with the study of **Dyer S et al** (2009), in South Africa about "Psychological distress among men suffering from couple infertility in South Africa: A quantitative assessment", where they found that women had got various punishments in their societiessuch as exhausting housework [42].

Forms of physical violence include direct physical injuries such as pushing, shoving, slapping, and kicking, punching, hitting, pinching, pulling hair, choking, use of weapons, throwing objects, or the use of restraints. It also consists of actions that indirectly injure the victim, such as withholding of medical care or medications [50].The present study revealed that small percentages of women were abused by slapping, twisting arm and pushing. This finding doesn't correspond with the study of **Sambisa W et al** (2011), who studied the "Prevalence and correlates of physical spousal violence against women in slum and non-slum areas of urban Bangladesh". They concluded that slapping, twisting arm and pushing were the most common forms of physical violence among the studied women [51]. In addition, the results of the current study also showed that only 2% of women were abused by throwing with objects. This result is incongruent with **Gareeb A** (2006), who did a study titled "Study of domestic violence among attendants of out-patients clinics in Assuit university hospital". She found that 82.8% of women were abused by hitting them with hands or throwing any other object at

them.This discrepancy between the former study findings and the results of current study could be attributed to difference in the characteristics of husbands and cultural differences [52].

On exploring the psychological violence that faced women, the present study indicated that many forms of psychological violence were mentioned by women in this study as the intrusion of others in women's private matters, negative comparison to fertile women, ignorance,contempt and isolation. As well as, threatening with divorce or throwing them out of home. The present result is relatively similar to the results of **Sami N** and **Ali T** (2012). They conducted a study in Karachi, Pakistan about "Domestic violence against infertile women in Karachi, Pakistan". They found that the majority of the abused women were threatened by their husbands for divorce and ejection from home [1]. In addition, this finding is also in agreement with the results of another study done by **Yildizhan R et al** (2009), they made a study in Turkey about "Domestic violence against infertile women in a Turkish setting". They indicated that 87% of the abused women were threatened with divorce by their husbands [53]. Moreover, the present finding is in accordance with that of**InhornM** (2009), who had done a study titled "Right to assisted reproductive technology: Overcoming infertility in low-resource countries (Egypt)". She reported that infertile women were generally excluded from daily events and celebrations that are related to mothers and children because it is believed that the children will be injured and affected by the evil eye of an infertile woman’s jealousy [41]. Furthermore, the present study also revealed thatwomen were threatened with getting married to a fertile woman and humiliated in public. This result is in line with the previously mentioned **OnatG** (2014) study, who concluded that women were exposed to psychological violence via social isolation, threatening with divorce, humiliating curious questions, and pressure from his/her family [49].

Regarding sexual violence, the present study showed that women were abused by their husbands either by forced sex,humiliation during marital relation or husband avoidance with sexual relation. This study also indicated that forced sex was reported by a small percentage (2.2%) of women. This result is nearly similar to thepreviously discussed **YildizhanR et al** (2009) study, who reported sexual violence in the form of being forced to have sexual intercourse at a rate of 7.3% of infertile women [53]. On the other hand, this study result was disagree with **Abd ElwahedO** (2011), who did a study about "Patterns of violence against women and its impact on children's behavior" in Alexandria, Egypt. She found that about one third of women had been forced to have sex by their spouses [54].

This study also revealed that more than one third of women reported deprivation from sexual satisfaction during marital relation.This result is congruent with the previously mentioned **Yildizhan R et al** (2009) study, who indicated that the abused women were mostly unsatisfied with their sexual lives. They added that sexual violence was possibly due to marital conflicts that resulted from infertility and its treatment [53].

The present study showed that the reasons for *intimate partner*violence were family pressure, costly and un-accessibility of treatment as well as repeated or failed IVF. Other reasons for domestic violence such as having problems with husband's family and difficulty to follow sexual intercourse timetable as physician order were also reported by women. This finding is consistent with **Onat G and Aba Y**(2015)**.** He carried out a study about" The effects of a healthy lifestyle and of anxiety levels on IVF outcomes". They found thatthe most common reason for domestic violence was family pressure. This result could be attributed to a child is thought to be a guarantee for the future and old age. Also, he is considered to be an important manpower in agriculture-based societies [55]. In addition, the present finding is congruent with**Al-Homaidan H**(2011), who conducted a study about "Depression among women with primary infertility attending an infertility clinic in Riyadh, Kingdom of Saudi Arabia: Rate, severity, and contributing factors". He reported that factors such as infertility treatments, family pressure, regular physician appointments, and waiting for the results of treatment may challenge the personal life of infertile couples [56].

The current study revealed that the most common violence aggressors that the women had experienced from husband's family, and their husband. This finding agrees with the results of at least two other researches. *The first,***Ardabily H et al** (2011), who stated that husbands were the perpetrators of all cases of domestic violence [47]. *The second,***Ameh N et al** (2007), who had done a study about the Burden of domestic violence amongst infertile women attending infertility clinics in Nigeria". They reported that (48.5%) of cases of domestic violence toward infertile women in Nigeria were abused by their husbands [57].Simultaneously, the same finding is inconsistent with the findings of **Yildizhan R et al** (2009), they found that 19.5% of women were abused by their husband’s family [53].

When women in the present study asked about response to violence,the most common response that was reported by women was isolation from others. While, more than one six of them responded by leaving home. This could be attributed to the majority of women were housewives and illiterate so they were likely to be financially dependent on their husbands[58]. This finding is not in line with **Rakovec-Felser Z** (2014), who conducted a study titled "Domestic violence and abuse in intimate relationship from public health perspective ". She mentioned that higher percentage of abused women responded by leaving home [59].

In relation to women seeking help, the present study indicated that less than one half of women sought help when they were exposed to violence. Regarding helping persons, the present study showed that the

majority of women sought help from their families followed by husband's family. This result is in line with the previously discussed **Abd Elwahed** O (2011) study. He concluded that, the majority of battered women sought help from their families followed by husband's family [54].

The present study also found that more than one half of women were not seeking help. Concerning reasons for not seeking help, the present study showed that more than one half of women mentioned that domestic violence is an individual matter which concerns them only. The present study also revealed that some women could not complain because they were afraid of getting divorce and there was no use from seeking help. This finding is consistent with the results of **Hajian S et al** (2014), who did a study about "Violence against women by their intimate partners in Shahroud in Northeastern region of Iran". They reported that 54% of abused women in Egypt did not seek help for the following reasons: 60% of them did not seek help because it is useless, while 19% of them were worried about exacerbating the situation, 9% of them were embarrassed from the abuse act and 9% did not seek help because they did not know to whom to go [60].

The present study revealed that women's age was significantly associated with sexual violence. This finding is in line with**Keeling J** (2013), who studied "Violence against women: current theory and practice in domestic abuse, sexual violence and exploitation". She found a significant relationship between women's age and experiencing domestic violence [61]. On the other hand, this finding does not match with that of **Mohamadian F et al** (2016), who had done a study about "Prevalence and risk factors of domestic violence against Iranian women: A cross-sectional study". They mentioned that there was no significant relationship between age and experience of domestic violence [62].

The result of this study also showed that there was no significant association between women's level of education and exposure to intimate partnerviolence. This finding is consistent with two studies. First, the previously discussed **Sami N** and **Ali T** (2012) study. They reported that there was no association between violence against infertile women and women's educational status [1]. Second, **Etesami R** and **Banihashemian K** (2011) had made "Comparison of sex disorders and couple abuse among fertile and infertile women" in Iran. They concluded that the educational level of women did not affect their exposure to domestic violence. Such agreement between the current study finding and that of the two previously mentioned studies could be attributed to the fact that women with low educational level have to depend on their husband in cultures with male-centered domination [63].However, the present study's same result is not congruent with the findings of **Iliyasu Z et al** (2016), who studied the "Phenotypes of intimate partner violence among women experiencing infertility in Kano, Northwest Nigeria".They showed that there was a relationship between low educational level of women and prevalence of domestic violence [64].

The present study found that there was no significant association between husband's occupation and exposure to intimate partnerviolence. This finding is inconsistent with the previously mentioned **Ardabily H et al** (2011) and **Yildizhan R et al** (2009) studies. They reported that there had been a strong relationship between violence against infertile women and husband's employment status. The women of unemployedhusbandswere more likely to be the victims of violence [47,53].

IV. Conclusion

Based on the findings of the present study, it can be concluded that: Infertile women were exposed to different patterns of intimate partnerviolence as physical, psychological and sexual patterns. The majority of them were exposed to psychological violence.Reasons for violence were considered to be primarily domestic issues that may have been related to female infertility. Thus, the most common reason for intimate partner violence was family pressure to have a baby as soon as possible. In addition, the exposure to this type of violence is linked with multiple risk factors including wife's age and residence.

Reverences

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