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Pregnancy Outcomes and Empowerment-Based Nursing Intervention against Intimate Partner Violence for Pregnant Women

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Abstract: *Various types of intimate partner violence (IPV) affect the pregnant women's physical and psychological health in forms of maternal and neonatal complications. An empowerment-based nursing intervention designed to empower pregnant women against intimate partner violence and improves their pregnancy outcomes and health related quality of life.*

The aim of the study was *to study the effectiveness of nursing intervention on the abused women's pregnancy outcomes and evaluate the effect of empowerment-based nursing intervention on the abused pregnant women's quality of life and on the women's empowerment against intimate partner violence.*

An intervention study *(pre-posttest) research design was adopted. This study was conducted at antenatal/postnatal wards, delivery room and outpatient clinic at Ain Shams University Maternity Hospital, Egypt, at 2016/2017.*

Subjects*: A total of 100 abused pregnant women. They were randomly assigned into two groups (50 for each).*

Four tools *were used to collect data; A Questionnaire Sheet, Abuse Assessment Screen Sheet, the 36-items Short form Health Survey, and Modified Empowerment Scale.*

The study findings *revealed that the percentage of the abused women's pregnancy outcomes related complications was decreased after the intervention; also the mean scores of HRQOL and empowerment sub-scales dimensions of the abused pregnant women were improved after the intervention with statistically significant differences between pre and post-test intervention and among both groups (intervention and control).*

In study ***conclusion****, intimate partner violence had a negative effect on pregnant women's pregnancy outcomes, which decreased with the intervention. The empowerment-based nursing intervention improved pregnant women quality of life and empowered them against IPV.*

This study ***recommended*** *that providing long-term health services and counseling intervention for abused pregnant women and their partners to reduce maternal and neonatal complications and empowered them against violence.*

Keywords: *Pregnancy Outcomes, Empowerment-based Nursing Intervention, Health Related Quality of Life (HRQOL), Intimate Partner Violence.*

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I. Introduction

Intimate partner violence (IPV) against pregnancy is a global social and public health problem, affecting a third of the pregnant women who exposed to IPV in the form of emotional, physical, and/or sexual violence by their husbands in Egypt 2014. [(1)] IPV remains more prevalent in Egypt, although increasing educational levels of the males and females, and initiatives to decrease wife violence. Meanwhile, behavior patterns of wife violence may have moved less severe forms recently (2009). [(2)] The researchers found in their study the highest prevalence in Egypt (32%), followed by India (28%), Saudi Arabia (21%) and Mexico (11%) at (2004). [(3)] Worldwide, at least one in three women is beaten, abused in her life and forced to have sex (2012). [(4)] Intimate partner violence(IPV) refers to a domestic violence by a male spouse against his wife, it a pattern of abusive behavior employing threat, power or fear, isolation, coercion and intimidation from one partner (male spouse) to another (female spouse) that results in physical, psychological or emotional trauma in an abusive situation, such as in marriage. [(5)] The “World Health Organization” defines IPV as the range of physical, psychological or sexual coercive acts used against women by their current husbands. It has different types such as physical, psychological, sexual and economic violence. [(6)] An abused women at each stage of pregnancy, whether verbal, physical, or emotional violence produces more undesirable psychological and physical influences on both the mother and her

fetus. [7] Pregnant women are more vulnerable to violence by their partners. IPV during pregnancy identified as a significant risk factor and negative consequences not only impacts on a woman's health, but also the unborn child. [8] Various health consequences of violence during pregnancy include hemorrhaging, increased incidence of miscarriage, uterine rupture, and infection, low birth weight of the baby, premature birth, fetal distress, and perinatal death. [9, 10] Also, abused pregnant women are more likely to delay prenatal care because of restriction, unable to gain weight appropriately and come down with sexually transmitted diseases. The prevalence of unwanted pregnancy is also higher because of sexual abuse or denial to use contraception. [11, 12] Anxiety, depression, and post-traumatic stress disorders are the psychological influences of IPV against pregnant women. [13] Different factors associated with intimate partner violence include; History of violence since childhood; dissatisfaction and marital discord; the unequal position of women relative to other partner; and when one partner feels distrust and low self-esteem, has excessive jealousy, difficulties in controlling his emotions and anger, and/or when the husband feels inferior to his wife in education and socioeconomic background. [14]

Poor health status and poor health-related quality of life of the pregnant woman are indicators for IPV. However, IPV has wide-ranging negative impacts on health-related quality of life (HRQOL) of pregnant women. HRQOL applied to describe abused pregnant women health status and to evaluate nursing intervention outcomes. [15] IPV against pregnant women had a significant negative association with their quality of life, so that, the need for implementing an empowerment intervention to improve HRQOL of abused women. [16] Intimate partner violence is an issue that affects both users and professionals providing maternity services. Although, the Government has recognized the need to raise the awareness, recognition, and understanding of IPV to encourage victims to come forward; However, research has shown that nurses do not feel adequately prepared to deal with victims of intimate partner violence, this a gap in knowledge and practice requires education and support. [17] Many antenatal care innovations suggest that women's empowerment is an effective mechanism affects health outcomes; meanwhile, health-related empowerment mediates the relationship between the innovation and behavior change outcomes. Empowerment defined as the continuous process of enabling individuals to improve their capacities, to analyze situations critically and to take action plans to improve those situations. Empowerment for pregnant women can be described as increasing awareness and capacities for health decision making, improved health care quality and promoting opportunities for social support. [18]

Empowerment of women against IPV is the critical and essential element to instill confidence and self-esteem in the women, enabling them to make right decisions and protect themselves. Empowerment-based nursing intervention reduces long-term physical, psychological, and emotional trauma, improve safety planning for the abusive situation and increase awareness and knowledge of the issue within communities.[5] An empowerment-based nursing intervention that is implemented in marriage and empowers the women with knowledge and skills to mitigate and cope with violence is urgently needed. It aimed at increasing women's independence and control of safety, problem-solving, and choice making. [19] Women's empowerment has multiple dimensions involve; self-esteem, participation in household decisions, disagreement towards domestic violence, and social capital. Also, women's economic empowerment contributes to decreasing risk of violence by the current husbands against women depends on other elements of their environments and circumstances. [20]

1.1Justification of the study

In Egypt, in spite of the governmental initiatives for decreasing wife violence, intimate partner violence still have a high prevalence. The present research study focused on the abused pregnant women with IPV due to its high prevalence, adversely pregnancy outcomes, negative health consequences, in addition, empowerment-based nursing intervention application toward women. Empowerment of pregnant women is considered as the key focus to reduce violence against them. All abused pregnant women need for their empowerment against intimate partner violence to; protect and support abused women; improve maternal and neonatal health outcomes; improve physical, psychological, social' quality of life and; mitigate intimate partner violence against pregnant women. [2]

Despite little studies have examined the association between violence during pregnancy and adverse pregnancy outcomes and women's empowerment against violence, there is the belief among women that violence during pregnancy increases maternal and neonatal complications which need interventions to overcome. Our purpose was to study the effectiveness of the empowerment-based nursing intervention on the abused pregnant women pregnancy outcomes; women's health-related quality of life and on women's' empowerment against IPV.

1.2 Operational definition:

Pregnancy outcomes; in the current study refer to results of pregnancy, birth, and puerperium and also for perinatal (fetal/neonatal) results.
Intimate partner**;** in the current study refers to male spouse.

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1.3 This study aimed to; a) Study the effectiveness of the nursing intervention on the abused pregnant women pregnancy outcomes; b) Evaluate the effect of empowerment-based nursing intervention on the abused pregnant

women's health related quality of life d) Evaluate the effectiveness of empowerment-based nursing intervention on the pregnant women's empowerment against IPV.

1.4 Hypothesis:

H_1. There is a significant difference between the pre and post-test of pregnancy outcomes among both groups.
H_2. There is a significant difference in abused pregnant women's health related quality of life between pre and post-test among both groups.
H_3. There is a significant difference in abused pregnant women s' empowerment between pre and post-test among both groups.

II. Subjects and Methods

2.1 Research design, Setting, and Timing:

Intervention study was conducted by using pretest-posttest design in antenatal/postnatal wards, delivery room and outpatient clinic at Ain Shams University, Maternity Hospital, Cairo Governorate, Egypt during the academic year 2016-2017. This study is based on matched husband-wife data.

2.2 Sampling size and technique:

A purposive sample of 100 abused pregnant women who at their first trimester of pregnancy. They were randomly assigned into two groups (50 for each); the first 50 subjects was the intervention group who received the intervention and the next 50 subjects was the control group who received only a usual maternity care (usual antenatal, natal, and post-natal care). The rule of sum and sample equation based on information from relevant studies and the daily numbers of hospital admission was used to determine the sample size of the study. An abused pregnant women were participated in the present study based on the inclusion and exclusion criteria. ***Inclusion criteria:*** risky pregnant women at their first trimester of pregnancy, had history of severely abuse with IPV in the previous and current pregnancy and willingness to participate in the study, the period between previous and current pregnancy did not exceed two years. ***Exclusion criteria:*** multiple pregnancy, chronic diseases, and drug addiction.

2.3 Tools for data collection: four tools were used for data collection. These consisted of a questionnaire sheet, abuse assessment screen, and short form health survey and modified empowerment scale. Subjective and objective data was collected until complete the required sheets.

i. ***Arabic questionnaire sheet*:** This tool was designed by the researchers to collect data after literature review. The questionnaire sheet was categorized in; 1) *Socio-demographic characteristics* (age, current marriage period, educational level, occupation and family income), 2) *Pregnancy outcomes sheet* includes; (gestational age, gravida, number of children and type of complication with pregnancy, labor, postnatal and for the newborn. Apgar score of the newborns was recorded from the patients' file.3) *Depression rating scale* (DRS) ;[(21)] it is a ten-question self-rating scale was used to identifying patients at risk for perinatal depression. This test was specially designed for women who are pregnant or just had a baby. DRS is calculated by summing all seven input items after recording each input item to a three-point (0,1,2) scale. For each input item, above, the first two levels, 0 and 1, are not recorded; level 2 is recorded to 1; and level 3 is recorded to 2. Scores of 3 or greater indicate major or minor depressive disorders. Women were permitted to ask questions for clarify any statement that she did not understand. The researchers recorded any complaints or needs.

ii. **Abuse Assessment Screen**; It was used to screen the intimate partner violence. It contains five questions and identifies if a woman is experiencing intimate violence. Positive responses to any of the five questions, in which the perpetrator was the husband, were coded as IPV. All the patients were asked about being physically hurt by someone during pregnancy or otherwise and about being touched in an unwanted sexual way ***(McFarlane et al., 1992)***. [(22)] Pregnant women were abused psychologically or physically hurt by their husband who used abusive language, kicked and slapped, prevent them from going to see relatives, and friends, or abused them emotionally etc. *Physical abuse* refers to; women faced with physical aggression (e.g. injury, harm or death) by their husbands during the pregnancy. *Emotional abuse* refers to; women faced with humiliating, repeated yelling or threatening acts by their husbands during the pregnancy. *Sexual abuse* refers to; women faced with the use of coercion or force to engage in a sexual act by their husbands. [(23)] *Economic abuse* refers to; controlling over the pregnant women access to economic resources by their husbands, which minimize their ability to support themselves and forces them to depend on the husband financially. [(24)]

iii. ***The 36-items Short Form Health Survey (SF-36); adopted from (Ware et al, 2003).*** [(25)] It was used as an outcome measure to assess pregnant women health related quality of life (HRQOL). It is a brief self-administered questionnaire. The psychometric properties of the SF-36 are well documented. The SF-36 contains 8 subscales

assessing physical functioning, role limitation due to physical problems, bodily pain, general health, fatigue/energy (vitality), social functioning, role emotional due to emotional problems and mental health. Possible score on each subscale range from 0 (the worse) to 100 (the best) conditions.

iv. ***Modified Empowerment Scale*:** This scale developed based on *The Personal Progress Scale-Revised (PPS-R)* [26, 59] and *The Rosenberg Self-Esteem Scale (RSE).* [27]It consisted of 34 items, categorized in 6 subscales namely; self-esteem and confidence (14 items), disagreement to IPV (3 items), household-decision making (4 items), social communication (6 items), community participation (5 items) and economic security (2 items). Responses were measured on 5 points Likert scale ranged from strongly agree (5), to strongly disagree (1), Possible score on each subscale range from 0 (strongly disagree) to 100 (strongly agree).

2.4 Field work

A written permission was obtained from the institutional authority of maternity hospital before conducting the study. After that, the researchers were introduced themselves to the abused pregnant women who met the inclusion criteria and inform them about the purpose of this research to get their acceptance and cooperation to be recruited in it. Confidentiality of information was ensured to gain women confidence and trust. The researchers were constructed and prepared the different data collection tools, designed the empowerment-based nursing intervention, teaching materials of booklets were developed by the researchers and revised by experts in the field of maternity, administration nursing and psychiatric nursing. The collection of data covered a period of 10 months from June 2016 to March 2017. Two periods of data collection: pre-test and post-test periods; in the pretest, data was collected at first trimester from the abused pregnant women with IPV related to the previous pregnancy, then at the same time the researcher began the empowerment-based nursing intervention beside the maternity care for the "intervention group" and the maternity care for the control group and follow-up them throughout the pregnancy, delivery and postnatal after that the researchers collected the data of the current pregnancy as posttest. Data collection was carried out through three phases: assessment phase, implementation phase, and evaluation phase.

2.4.1 Assessment phase*:* At the beginning; the pregnant women were evaluated for IPV by Abuse Assessment Screen, then the pre-test data collection was conducted by the researcher for the abused pregnant women at the first trimester of pregnancy in both groups. The questionnaires were filled in while conducting interviews from women required approximately 10-20 minutes to complete data collection form, after informed consent then the researcher recorded the women's' telephone number and address in order to follow-up them.

2.4.2 Implementation phase: In this phase, the selected women were randomly assigned into two groups (50 for each). The first group "intervention group" comprised of 50 abused pregnant women who were faced with the empowerment-based nursing intervention beside the usual maternity care and the other group "control group" who were faced with the usual maternity care only; the researchers provided also maternity health education and referral for clinics if needed.

Intervention was administered at first trimester through individual and group counseling, one session/week (60 minutes for each session) for six weeks followed by follow-up of data collection through face to face and telephone interviews, follow-up occurred till the immediate postnatal period. Intervention and follow-up activities continued until March, 2017. This intervention was applied by using PowerPoint presentation, brochures, videos and scenarios as put the women in similar daily life situations and training them how to deal with these situations.

Empowerment-based nursing intervention; was designed for intervention group of abused pregnant women based on literature review and the pre-test results. It aimed to empower women against intimate partner violence and improves their pregnancy outcomes and HRQOL. The following contents were covered; a) A written information about the types and causes of violence (e.g., emotional, physical, economic and sexual), b) A safety plan brochure to avoid violence (e.g., safe exit action plan for leaving an abusive situation), c) An empowering plan for the women against IPV; *psychologically* as (increasing self-esteem, confidence, and independence), *socially* as (increase the ability of household-decision making, effective communication plan and community participation) and *economically* as (encourage to financial independence and how to get financial support), d) Supporting women with the Islamic evidence in Quran and sauna about family relationship. e) A list of community resources with addresses and phone numbers for abused women.

***A usual maternity care*;** included the care provided for the women at the antenatal/postnatal wards, delivery room and outpatient clinics.

2.4.3 Evaluation phase*:* In this phase, the abused pregnant women were evaluated for the pregnancy outcomes, HRQOL and their empowerment by using pregnancy outcomes assessment tool, HRQOL and empowerment scales.

The Post-test consumed about 15-20 min for each woman. The researchers kept on a continuous telephone contact with women to determine the exact time for measuring the post-test.

2.5 Content validity and reliability

Study tools were submitted to a panel of five experts in the field of maternity nursing, nursing administration and psychiatric nursing to test the content validity. Modifications were done according to the panel's judgment on the clarity of sentences and content appropriateness. Reliability analysis was conducted to investigate the instrument internal consistency which used in the study. Internal consistency describes the extent to which all the questionnaire items measure the same concept or construct. Cronbach alpha coefficients were calculated to examine the measurement reliability with multipoint items. The accepted values of Cronbach alpha coefficient range from 0.60 to 0.95. [28, 29] The questionnaire items of the present study (*SF-36*) were proven reliable where $\alpha = 0.92$ and $\alpha = 0.91$ for empowerment scale (34 items).

2.6 Pilot Study

It was conducted on 10% of the participants, were selected randomly and excluded from the total sample. Its aim was to evaluate the simplicity and clarity of the tools. It also helped in the estimation of the time needed to fill in the forms. According to the pilot study results, simple modifications were done as rephrasing or canceling some questions.

2.7 Ethical consideration

An official permission was granted from the director of the Ain Shams University Maternity Hospital. The researchers introduced themselves to the women who met the inclusion criteria and informed them about the purpose of this study in order to obtain their acceptance to share in this study, the researchers ensured that the study posed no risk or hazards to their health and their participation in the study is voluntary. Pregnant women who were willing to participate in the study and met the inclusion criteria were approached by the researchers and asked for verbal consent to confirm their acceptance, and all events that occurred during data collection were considered confidential.

2.8 Statistical design

All statistical analyses were done using SPSS version 20. Initially, the internal consistency coefficients were examined to ensure the reliability of the used instrument for the present samples. Frequencies, means and standard deviations were calculated to describe the samples. Independent and paired T-tests were used to compare the means of pre and post intervention of the abused groups. Statistical significance was considered at p-value <0.05.

III. Results

Table (1) revealed that the mean age of the abused pregnant women in the both groups "intervention and control" was (29.6 ±5.48) and (29.3 ±4.98), while the mean current marrital period was (8.0 ± 5.7) and (9.0 ±6.6) respectively. More than half of the abused pregnant women was moderately educated in the intervention group and control group with the same for their husbands and from rural area. Moreover, most of the abused pregnant women had not enough family income and not working in both groups.

Figure (1) showed The distribution of intimate partner violence types among the abused pregnant women in the intervention and control groups was as the following; 58% and 48% of the abused pregnant women had physical violence,60% and 76% of women had psychological violence, 40% and 43% of women had economic violence and finally 36% and 32% of women had sexual violence in both groups respectively.(pre intervention).

Regarding the prevalence of maternal and perinatal outcomes; **table (2)** illustrated that various maternal and perinatal complications affected by the different types of intimate partner violence among the abused pregnant women were pregnancy complications as (Bleeding, preterm labor, obstructed labor and premature rupture of membrane), pregnancy related medical complications as (anemia, hypertension, severe headache, severe abdominal disturbance, tension and anxiety andante/postpartum depression) and perinatal complications as (intrauterine death, low birth weight, and 5-minute Apgar score < 7). It was found that after the intervention, the complications were decreased between the pretest (at previous pregnancy) and the posttest (at the current pregnancy) in the "intervention group" with statistically significant difference between the pretest and posttest among the abused pregnant women in the same group and between the groups at p< 0.05., while there was no change in the control group.

Table (3) Indicated that the mean scores of HRQOL sub-scale dimensions of the abused pregnant women in the "intervention group" were improved after the empowerment-based nursing intervention with highly statistically significant differences between the pretest and posttest in the same group while, there was no significant differences in the "control group" between the pretest and posttest. Also, there was statistically significant difference between the intervention and control groups related to HRQOL sub-scales dimensions.

Table (4) revealed that abused pregnant women had higher mean score in the **intervention group** for the following dimensions; **disagreement to intimate partner violence**, **household decision- making power**, **social communication** and **community participation** (98.2 ± 4.8, 68.1 ± 13.2, 51.5 ± 8.7, and 61.8 ± 11.1) respectively after empowerment-based nursing intervention, as compared to before intervention (75.2 ± 18.9, 47.6 ± 19.8, 41.4 ± 17.6, and 35.1 ± 19.5) respectively with highly significant difference at $p \leq 0.001$. Meanwhile, there was a significant increase of self-esteem and confidence among abused women in the post- nursing intervention as compared to pre-intervention at $P < 0.05$. Also, there was no a significant difference between pre and post intervention in the ***economic security*** among abused women. In addition, this finding indicated that there was a significant difference between the pretest and posttest among the abused pregnant women in the same group and between both groups at $p < 0.001$, while there was no change in the control group.

Table (1). Percentage Distribution of Scio-demographic Characteristics among Studied Samples.

Items	Intervention group (n=50)	Control group (n=50)
	n (%)	n (%)
Age:		
20-30 years	29(58.0)	27(54.0)
31-40 years	21(42.0)	23(46.0)
Mean ± SD	29.6 ±5.48	29.3 ±4.98
Current marital period		
< 10 years	38(76.0)	35(70.0)
10-20 years	9(18.0)	10(20.0)
>20 years	3(6.0)	5(10.0)
Mean ± SD	8.0 ± 5.7	9.0 ±6.6
Wife educational level		
- High education	12(24.0)	14(28.0)
- Moderate education	28(56.0)	26(52.0)
- Low education	10(20.0)	10(20.0)
Husband educational level		
- High education	15(30.0)	17(34.0)
- Moderate education	29(58.0)	27(54.0)
- Low education	6(12.0)	8(16.0)
Occupation:		
- Working	19(38.0)	22(44.0)
- Not working	31(62.0)	28(56.0)
Family income		
- Enough	15(30.0)	19(38.0)
- Not enough	35(70.0)	31(62.0)
Residence		
- Rural	29(58.0)	26(52.0)
- Urban	21(42.0)	24(48.0)

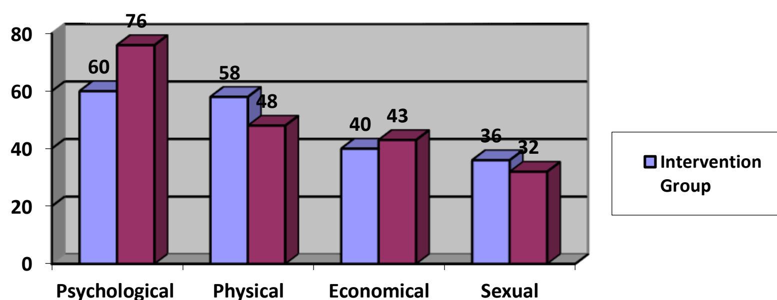

Figure (1). Distribution of Intimate Partner Violence Types among Studied Groups. (Pre-intervention)
Note: *More than one type was reported by the women (Some women gave positive responses to more than one question.)*

Table (2). Comparison of Changes in Maternal and Perinatal Outcomes Prevalence before and After the Intervention among Studied Groups.

Maternal & perinatal outcomes	Intervention (N=50)		Control (N=50)		Independent-t-test
	Previous pregnancy (Pre)	Current pregnancy (Post)	Previous pregnancy (Pre)	Current pregnancy (Post)	
Pregnancy complications					Pre-test t= 0.65, P =.46
- Bleeding	(10)20%	(3)6%	(8)16%	(7)14%	
- Preterm labor.	(5) 10%	(1)2%	(7)14%	(5)10%	
- Obstructed labor.	(4) 8%	(1)2%	(4)8%	(3)6%	Post-test t= -3.6 , P= 0.001*
- PROM	(5)10%	(0)0%	(3)6%	(5)10%	
	Paired-t= 4.6 p< 0.001*		Paired-t= 0.0 p=1.0		
Pregnancy related medical complications					
- ↓ Hemoglobin level(anemia)	(6)12%	(2)4%	(8)16%	(10)20%	Pre-test t= 1.01, P =0.32
- ↑blood pressure (hypertension)	(17)34%	(6)12%	(13)26%	(15)30%	
- Severe headache	(13)26%	(2)4%	(16)32%	(18)36%	
- Severe Abdominal disturbance	(25)50%	(5)10%	(21)42%	(24)48%	Post-test t= -2.29 , P= 0.02*
- Tension and Anxiety	(35)70%	(5)10%	(29)58%	(32)64%	
- Ante/postpartum Depression.	(10)20%	(3)6%	(9)18%	(11)22%	
	Paired-t= 9.8 p< 0.001*		Paired-t= -1.65 p=0.1		
Perinatal complications					Pre-test t= -1.1, P =0.25
- Intrauterine death	(1)2%	(0)0	(3)6%	(1)2%	
- Low birth weight(<2500gms)	(5)10%	(1)2%	(7)14%	(9)18%	
- 5-minute Apgar score < 7	(4)8%	(1)2%	(6)12%	(4)8%	Post-test t= -3.16 , P= 0.002*
	Paired-t= 2.9 p= 0.005*		Paired-t=0.75 p=0.45		

Statistically Significant Differences at P < 0.05

Table (3). Comparison of Abused Pregnant Women's Health Related Quality of Life Scores Before and After Empowerment-Based Nursing Intervention among Studied Groups.

HRQOL-subscale items	Intervention (n=50)		Control (n=50)	
	(pre) M ± SD	(post) M ± SD	(pre) M ± SD	(post) M ± SD
Physical functioning	47.9 ± 24.2	69.4 ± 10.5	49.7± 14.6	48,0± 23.60
	Paired-t= 5.47	p< 0.001*	Paired-t=0.40	p=0.68
Role limitations due to physical health	32.8 ± 28.3	69.3 ± 8.97	35.1± 19.5	37.1± 18.2
	Paired-t= 8.72	p< 0.001*	Paired-t= 0.63	p=0.53
Role limitations due to emotional problems	47.6± 19.84	61.8 ± 21.03	43.5± 22.3	42.0± 19.8
	Paired-t= 3.24	p< 0.002*	Paired-t= 0.48	p= 0.63
Energy/fatigue (vitality)	43.0 ± 21.9	73.5 ± 5.4	46.5± 19.4	45.0± 17.1
	Paired-t= -9.66	p< 0.001*	Paired-t= 1.03	p=0.30
Emotional well-being	41.8 ± 21.4	72.9 ± 6.3	46.7± 11.2	44.2± 12.5
	Paired-t= -10.13	p< 0.001*	Paired-t= 0.93	p= 0.35
Social functioning	48.0 ± 23.6	73.8 ± 3.8	51.0± 16.7	51.5± 8.65
	Paired-t= -7.75	p< 0.001*	Paired-t= 0.18	p=.85
Bodily Pain	42.0 ± 16.2	48.5 ± 16.3	39.1± 7.98	41.4± 17.64
	Paired-t= -2.12	p=.039*	Paired-t= 0.88	p=0.38
General health	37.0 ± 18.2	72.8 ± 5.3	36.7±20.5	39.7± 17.7
	Paired-t= 13.7	p< 0.001*	Paired-t=1.33	p=.19

*** High scores indicate better health.**
****Highly statistically significant differences at (p ≤ 0.001)**

Table (4). Comparison of Abused Women's Empowerment Scores Before and After the Empowerment-based Nursing Intervention among Studied Groups.

Empowerment –subscale items	Intervention (n=50)		Control (n=50)		Independent t-test
	(pre) M ± SD	(post) M ± SD	(pre) M ± SD	(post) M ± SD	
Self-esteem and confidence.	**60.9 ± 15.0**	**66.7 ± 4.2**	**61.4 ± 5.5**	**62.2 ± 5.2**	**Pre; t=-1.3, p=0.2 Post; t=4.7, p=.001***
	Paired-t= 2.5 p= 0.02*		**Paired-t=1.71 p= 0.09**		
Disagreement to domestic violence	**75.2 ± 18.9**	**98.2 ± 4.8**	**72.3± 3.9**	**71.0± 9.2**	**Pre; t=1.0, p=0.3 Post; t=18.3, p=.001***
	Paired-t= 7.79 p< 0.001*		**Paired-t=1.15 p= 0.25**		
Household decision-making power	**47.6 ± 19.8**	**68.1 ± 13.2**	**54.7± 11.7**	**54.8± 12.8**	**Pre; t=-2.2, p=0.03* Post; t=5.1, p=.001***
	Paired-t= 5.72 p< 0.001*		**Paired-t=.00 p= 1.0**		
Social communication	**41.4 ± 17.6**	**51.5 ± 8.7**	**39.2± 7.9**	**41.2± 8.3**	**Pre; t=0.8, p=0.4 Post; t=6.1, p=.001***
	Paired-t= 10.87 p< 0.001*		**Paired-t= 1.94 p= 0.06**		
Community participation	**35.1 ± 19.5**	**61.8 ± 11.1**	**40.4± 11.7**	**44.2± 12.5**	**Pre; t=-1.6, p=0.1 Post; t=7.4, p=.001***
	Paired-t= 13.37 p< 0.001*		**Paired-t= 1.91 p= 0.06**		
Economic security	**66.8 ± 22.1**	**72.7 ± 7.86**	**64.0± 10.3**	**61.3± 14.4**	**Pre; t=0.8, p=0.4 Post; t=4.9, p=.001***
	Paired-t= 1.83 p= 0.07*		**Paired-t= 1.39 p=0.17**		

**** Statistically significant differences at (p < 0.05)***

IV. Discussion

Violence against pregnant women by their husbands is a prevalent problem in Egypt, likely affecting on maternal and neonatal's health outcomes adversely and on women's' health-related quality of life. An empowerment-based nursing intervention suggested managing abused pregnant women and empowering them against IPVand improve their health status. The purpose of the current study was to study the effectiveness of the nursing intervention on the abused pregnant women pregnancy outcomes; Evaluate the effect of an empowerment-based nursing intervention on the abused women's health-related quality of life and on the women's empowerment against IPV.

These study findings revealed that the majority of abused pregnant women with IPV in both study group were aged from (20-30) years, were moderately educated. In addition to, most of them had not enough family income and not working. This finding consistent with some studies has demonstrated that there is a positive relationship between young age and increased risk for violence during pregnancy, [30 and 31] and there is a relationship between unemployment of women and increased risk of domestic violence by their husband during pregnancy. [32 and 33] In the same respect, the study of ***Bacchus et. al.*** reported that incidence rate of abused pregnant women is higher due to low-income. [34] In contrast, the study of ***Kwagala et al.*** revealed more than half of the abused pregnant women who work in an agriculture have reduced exposure to IPV compared to those who were not working.[30]

Our study finding was similar to the study of ***Jeyaseelan et al.*** revealed a higher rate of pregnant women withIPV was a moderate level of education than women with a high level of education. [35] Also, in the same line with a study of ***Chandrasekaran et al.*** which found that there was a strong association between abused women with IPV and low household income. [36] It simply means that higher levels of education make the couples open-minded, knowledgeable about the importance of the family relationship, every partner knows the rights of the other one, may make them with a good job with enough household income.

Our result indicated that intimate partner violence types among the abused pregnant women in the intervention and control groups were as the following; 58% and 48% of the abused pregnant women had physical violence,60% and 76% of women had psychological violence, 40% and 43% of women had economic violence and finally 36% and 32% of women had sexual violence in both groups respectively(pre-intervention). This finding was consistent with a study of ***Kharboush et al.***which found that percent of pregnant women with IPV have psychological violence (71%), physical violence (50%), economic violence (43%) and sexual (37%) at Alexandria Governorate hospitals, Egypt 2010[37].During the recent political and social uprisings in Egypt, there is an increase in IPV against women by their husband. [38]In the same line, the study of ***Lafaurie*** illustrated that psychological violence is the most frequently among pregnant women. [39] In contrast, the study of ***Tiwari et al.*** reported less

psychological abuse, minor physical violence and not sexual violence among abused women. [40] Also, another study reported that 4% of abused women had sexual violence with their husbands. [2]

Regarding the changes in maternal and perinatal outcomes prevalence before and after the intervention among abused pregnant women. Our study result illustrated that there were various pregnancy, pregnancy-related medical, and perinatal (fetal/neonatal) complications among abused pregnant women affected by different types of intimate partner violence in previous pregnancy. **In the intervention group**, the current study findings revealed that there was a statistically significant decrease of pregnancy complications (Bleeding, preterm labor, obstructed labor and premature rupture of membrane) among abused pregnant women "after nursing intervention compared to the findings before intervention at $p< 0.001$. Also, there was statistically significant decrease of pregnancy-related medical complications (anemia, hypertension, severe headache, severe abdominal disturbance, tension and anxiety andante/postpartum depression) among abused pregnant women "after nursing intervention compared to before intervention at $p<0.001$. In addition, there was a significant decrease of perinatal complications (intrauterine death, low birth weight, and 5-minute Apgar score < 7) among abused pregnant women "post-intervention" at $p= 0.005$.While, **in the control group,** there were no significant differences between the previous and current pregnancy. The current study finding indicated that there was a significant difference between an intervention group and control group in pregnancy outcomes among pregnant women with IPV at $P < 0.05$. Our study findings indicated that there were better pregnancy outcomes among abused pregnant women who participated in nursing intervention than the abused pregnant women who received only usual maternity care in control group.

The present study finding was consistent with study of ***Alrahmani et al;*** which indicated that abused pregnant women with IPV were associated with an increased risk of bleeding in the form of miscarriage. [41]In the same respect, a study of ***Paker et al.*** found that pregnancy complications, including first and second trimester bleeding, are significantly higher for women with IPV. [42] Similarly, the study of ***Coker*** found that the women with IPV during pregnancy were associated with increased risk of an intrauterine death. [43] Also, this finding was compatible with a study of ***Guzik*** which indicated that pregnant women with violence had complications such as high blood pressure and a higher incidence rate of depression. [44]

Our findings were in agreement with a study of ***Bailey***, indicated that pregnant women who have domestic violence with their husband are associated with adverse neonatal outcomes, including preterm birth and low birth weight.[45] Likewise, Numerous studies showed that there was a relationship between intimate partner violence and an increased risk of following obstetrical complications during the perinatal period: low birth weight, preterm labor and/or delivery, premature rupture of membranes, late fetal loss, abortion, vaginal bleeding, anemia, and hypertension. [46, 47, 48]

Pregnant women experiencing IPV was associated with increased risk of anxiety, nervousness, ante/postnatal depression and stress, and psychosomatic complaints such as a headache and abdominal pain.[49] Abused pregnant related anxiety, depression, and stress may increase stress hormones production (adrenaline, noradrenaline, and cortisol) which effect on uterine activity and lead to slow progress during delivery.[50] The current research result consistent with the study of ***Jahanfar et al.*** revealed a statistically significant reduction in depression during pregnancy and the postnatal period among abused women after an intervention. The researcher reported that there were significant differences between intervention and control group. [51] Also, The study found a statistically significant decrease in pregnancy complications among abused women after an intervention, compared to control group. [52]In the same line, other studies reported a reduction of risky pregnancy outcomes post-intervention, this result indicating to an effectiveness of the intervention on pregnancy outcomes. [53, 48]

On another hand, the study of ***Zareen et al.*** indicated that antenatal complications were not observed in both intervention group and control group of abused pregnant women with no a statistically significant difference between them. [54] The differences in the findings of this study and our study findings may be related to the differences in the culture, age, inclusion criteria and sample size of the women included in the studies.

As regard to abuse pregnant women's health-related quality of life scores between pre and post empowerment-based nursing intervention. The study results indicated that the mean score of eight subscales of HRQOL (physical functioning, role limitations due to physical health, role limitations due to emotional problems, vitality, emotional well-being, social functioning, bodily pain, and general health) were improved among abused pregnant women affected by IPV with highly statistically significant improvement after the empowerment-based nursing intervention except bodily pain item was significant at $p= 0.039$. Also, there was a highly significant difference between pre and post-test in the intervention group at $p \leq 0.001$, while, there was no significant difference between them in the control group of abused pregnant women. Overall, there was a significant difference between pretest and post-test among the two groups.

These findings indicated that empowerment-based nursing intervention leads to promoting the teaching and training approach received by abused pregnant women, resulting in a positive impact on all dimensions of HRQOL of abused women, so that, there was statistically significant differences were observed in all dimensions after intervention except bodily pain subscale was the lowest significant. This nursing intervention was an indicator for improvement of abused women's health and well-being.

This result was consistent with a study of ***Tiwari et al.*** reported that mean scores of HRQOL subscales among abused pregnant women were increased after empowerment training, however, the experimental group had significantly improved scores on the physical functioning, role limitations due to emotional problems, role limitations due to physical health and bodily pain after intervention, as compared to control group at $p < 0.05$. **(40)**Meanwhile, ***Tavoli et al***. found that pregnant women IPV were the significant adverse association with their quality of life**.** **(55)**

On other hands, the study of ***Cripe et al.*** reported that both groups of pregnant women with IPV had higher scores for physical functioning, bodily pain, role-physical and emotional scales, social functioning and vitality, and there was no a significant differences in the mean score between pre and post-test among both groups of abused women because the researchers mentioned that community resources which they used in their study were low. **(49)**

Regarding abused women's empowerment scores before and after the empowerment-based nursing intervention. **In the intervention group**, this study finding revealed that abused pregnant women had higher mean score after empowerment-based nursing intervention for the following dimensions; **disagreement to domestic violence, household decision- making power, social communication, and community participation**, as compared to before intervention with a highly significant improvement at p≤ 0.001. The significant improvement of these dimensions as the key elements in empowering abused pregnant women against IPV. While there was a significant increase in **self-esteem and confidence** among abused women post nursing intervention (66.7 ± 4.2), as compared to pre-intervention (60.96 ± 15.0) at P< 0.05. These our results indicated that empowerment-based nursing intervention was an effective mechanism for empowering women and increasing their awareness, self-esteem and general power in mitigating violence. Also, our finding revealed there was no a significant difference between pretest and post-test in the **economic security** among abused women in the intervention group. **In the control group**, there was no a significant difference between pretest and post-test in all women's empowerment dimensions. In addition, this finding indicated that there was a significant difference between the pretest and posttest among the abused pregnant women in the same group (intervention group) and between both groups at p< 0.001, while there was no change in the control group, this indicating that nursing intervention has a beneficial effect on women's empowerment.

The present study findings were agreement with a study of ***Estebsari et al***. which indicated that mean scores of self-esteem was significant improvement after educational intervention-based on women's empowerment model, as compared to before intervention, also, the study found a higher mean score in the household decision- making power post-intervention than pre intervention among abused pregnant women and there is significant difference between them at (P<0.001), this confirmed better impact of intervention in an increasing women's empowerment against violence. **(56)** In the same line, the study of ***Shimamoto*** revealed that decision making on visits to the family and self-health care are positively significant on abused women after women s' empowerment intervention. **(57)** Our study was consistent with the study of ***Lopez-Avila*** indicated that social relationship and community participation significantly decreased the risk of IPV among pregnant women post empowerment-based nursing intervention. On other hands, it found that there is no relationship between women's participation in household decisions making and risk of IPV. **(58)**

Our study finding analysis revealed there was no a statistically significant difference between pre and post-test in economic security among abused women because most of the abused pregnant women were not working and they had not enough family income. Conversely, the study of ***Kwagala et al.*** illustrated that women' employment was a significant reduction of intimate partner violence, these indicating that women who employee had decreased risk of violence compared to those who were not working, meanwhile, the women may not be beaten by their husbands through their economic empowerment. **(30)** Based on the study in rural Haryana, ***Chowdry*** found that women's economic independence can help reducing violence against women. **(59)**
According to a study of ***Leneghan et al.*** which showed that counseling intervention was significant with woman' empowerment against violence.**(60)** Accordance with ***Sharps et al.*** who indicated that intervention group of abused pregnant women is greater empowered in their relationships with others and they had the ability to cope, as compared to control group. **(61)** Similarly, The study revealed there is a significant difference between experimental and control group in women s' empowerment during pregnancy. **(40)**

V. Conclusion

Since intimate partner violence by a male spouse against his pregnant wife is a side-effect in the Egyptian society, it cannot be wiped out. However, educating and empowering abused pregnant women was essential through providing effective nursing interventions to avoid adverse pregnancy outcomes and reduce the incidence of intimate partner violence. The results of this study indicated that abused pregnant women had pregnancy-related medical, and perinatal complications affected by different types of IPV during pregnancy, and also, there was a statistically significant decrease of pregnancy outcomes after the intervention and significant difference between

the pre and post-test among both groups. Additionally, the study finding indicated that empowerment-based nursing intervention had a positive impact on abused women health-related quality of life. Also, the highest mean score of the abused women empowered against IPV post-intervention in all dimensions of empowerment with a highly significant improvement except economic security. Moreover, there was a significant difference between the pre and post-test intervention and among both groups (intervention and control).

Some limitations of this study; the first limitation was the researchers didn't' focus on reducing violence by perpetrators of abuse but changing abused pregnant women attitudes and behaviors against IPV. The second limitation was participants were women only without their husbands.

VI. Recommendation

In light of the study findings, the following recommendations are suggested:

1. Providing long-term health services and counseling intervention for abused pregnant women to reduce maternal and neonatal complications and empowered them against violence.
2. Studying of cognitive behavioral therapy for perpetrators of IPV for changing abusive behaviors toward women.
3. Implementing empowerment programs for both men and women against violence.
4. Encouraging the women to work and have the financial independence to make informed decisions that best reflect their interests and needs.
5. Screening for intimate partner violence during pregnancy is important for assessment because most of the prenatal providers do not routinely inquire about intimate partner violence.
6. More empowerment training is needed to assist health care providers in identifying and managing intimate partner violence during pregnancy.

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