

## Effectiveness of antenatal education on Posttraumatic Stress Disorder Symptoms following childbirth in Al-najaf Governorate

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### ABSTRACT

**Background;** Antenatal education is an essential component of antenatal care that prepares and facilitates the acquisition of women's skills and confidence required for positive experiences throughout pregnancy, birth and the postnatal period

Aim of the study; To investigate the effects of antenatal education program on women expectation and experiences during childbirth. Methods; Quesi-experimental study conducted, comparing two groups of women: an antenatal education intervention group and a usual prenatal care control group, Non – probability / purposive sample which include 80 pregnant women who attended in the main primary health care centers at AL-Najaf AL-Ashraf governorate. Questionnaire used for data collection by interview forms and Wijma Delivery Expectancy/Experience Questionnaire B and A version (W-DEQ-A, W-DEQ-B). Data analyzed through utilize (SPSS) software version (26) where, included descriptive analysis and inferential data analysis.

**Results:** there is non-significant relationship between study and control group before education related to women expectations during the labor and delivery while after education the study find that there is high significant relationship between study and control group related to women experiences during labor and delivery.

**Conclusion:** Based on the finding of present study educational program effect on maternal expectations during labor and delivery.

**Recommendations:** Further testing is needed to assess WDEQ-A women expectation and experiences during labor in different cultural settings and to evaluate its potential applicability in clinical settings to evaluate the emotional health of women facing childbirth and identify those at risk.

**Keywords:** Antenatal, education program, childbirth.

## INTRODUCTION

Childbirth is both a natural and challenging experience that includes positive and negative psychological responses. Women's psychological responses to birth are largely determined by retrospective appraisal of the birth process, and interpretation, thoughts and emotions during and after birth (G. Gökçe İsbir et al., 2016)

Births experienced as particularly traumatic might thus have a negative impact on a woman's postnatal psychological well-being. Recently, researchers have increasingly focused on women's psychological trauma and its symptoms following child-birth, It should also be noted that PTSD symptoms following childbirth are related not only to actual birth trauma but also to other factors can make women more vulnerable or at risk of developing PTSD symptoms following childbirth (Ayers, 2014)

Some studies found that PTSD following childbirth can also negatively interfere with the mother-infant relationship. For some women, caring for their baby continues to be a reminder of traumatic experiences, which may in turn make it harder for them to develop strong bonds and secure attachments with their baby. One of the symptoms of PTSD is emotional detachment, and mothers may be therefore be unable to feel and show affection towards their baby (Akmaliyah, 2013).

The risk factors associated with the development of PTSD symptoms post-delivery can be categorized primarily into vulnerability-related, trauma-related, and postpartum factors. Among variables present at delivery, null parity, low socioeconomic status, perception of poor social support during pregnancy, history of psychological/ psychiatric problems, sexual trauma, trait anxiety or anxiety in late pregnancy, higher anxiety sensitivity, prepartum depression, and severe fear of childbirth have all been associated with the development of PTSD (Verreault et al., 2012)

The existence of post-traumatic stress disorder (PTSD) and PTSD symptoms following childbirth remained unrecognized for a long time by many professionals, perhaps because of the common belief in society that child-birth is and should be a positive experience. Since the 1990s, there has been growing focus on traumatic birth experiences and childbirth-related PTSD (de Graaff et al., 2018)

Symptoms of PTSD are generally divided into three categories including re-experience/intrusion via nightmares, intrusive thoughts or flashbacks; avoidance and numbing; and increased arousal such as hypervigilance, irritability, difficulty concentrating and other emotional dysregulation. For birth-related PTSD, two clusters of symptoms were identified: (1) re-experiencing and avoidance symptoms; and (2) emotional numbing and arousal symptoms (G. Gökçe İsbir et al., 2016)

Prevalence estimates of PTSD symptoms following childbirth vary substantially across studies; yet, in a recent review the subjective birth experience has been found to have the strongest effect on PTSD symptoms following childbirth (R. Grekin, 2014). In addition, complications during childbirth may increase postpartum fear of birth, and intense fear during birth may be more predictive than perceived threat of injury or death for postnatal PTSD symptoms following childbirth (K. Stoll et al., 2014).

Preparation for childbirth during prenatal period by attendance to antenatal classes seems to be helpful in achieving more optimal per- and postnatal outcome moreover, organized group activities facilitate experience exchange and provide emotional support from other women in similar life circumstances (J. Kacperczyk-Bartnik et al, 2019)

Antenatal education programs often have a range of aims, such as to influence health behavior; build women's confidence in their ability to give birth; prepare women for childbirth; prepare for motherhood; develop social support networks; and contribute to reducing perinatal morbidity and mortality (Boorman, R et al., 2016). Therefore, education may be provided during the antenatal period or childbirth or during the postnatal period or during all of these stages and encompasses the various aspects of childbirth care and health (A.-S.H. Aji et al., 2018)

The effectiveness of antenatal education on PTSD symptoms following childbirth has received relatively little research attention. As such, this study aimed to examine the effects of antenatal education on PTSD symptoms following childbirth.

Materials and methods

### **1. Design of the study:**

Quasi-experimental study conducted, comparing two groups of women: an antenatal education intervention group and a usual prenatal care control group to investigate the effects of antenatal education program on fear of childbirth and Post-traumatic stress disorder symptoms (PTSD) following childbirth

### **2. Locale study:**

Present study is carried at the main primary health care centers in Al-Najaf Al-Ashraf /Iraq

### **3. sample of the study**

Non – probability / purposive sample which include 80 pregnant women who attended in the main primary health care centers at AL-Najaf AL-Ashraf governorate.

### **4. participants in the study**

Participant in this study mothers were required to be nulliparous as well as multiparous, between 28 and 30 weeks' gestation, have no history of pregnancy complications, have their pregnancies be considered non high-risk, and not be attending any other antenatal program, the intervention group consisted of women who accept to participate in the study under the 'usual care' condition, and met the inclusion criteria. The control group was composed of women who were receiving usual prenatal care at primary health care centers and met the inclusion criteria.

### **5. The study instrument: -**

For data collection a questionnaire by interview forms and Impact of Event Scale-Revised (IES-R) to measure PTSDs was, obtain from the extensive review of relevant literature and related studies. researcher modified questionnaire to be suitable with

studied sample requirements. The study tool consisted from two parts as the following:

First part Socio-demographic characteristic which include (4) items as regards to their age, educational level, place of residence and occupation.

Second part comprises (6) item; that concerned obstetrical Characteristics which include Gestational age, desired of delivery, Planning of pregnancy, Party, Previous abortion and Previous delivery.

Third part including Impact of Event Scale—Revised (IES-R): The IES-R is a 22-item questionnaire that provides an assessment of the three symptom clusters of PTSD: intrusive thoughts (8 items), avoidance behaviors (8 items), and hyperarousal (6 items), Items were rated on a 3-point scale.

#### 6-Intervention

The sessions in the intervention group were conducted using animation videos, social media, boosters and slide presentations. Pregnant women assigned to the intervention program classes in singular or 2-3 women because covid-19 precautions. They were offered a structured antenatal education course consisting of 8 hours of instruction split into four 120-minute weekly sessions. Each session included presentation of theoretical information, videos for 60 minutes, warm-up and stretching exercises for 15 minutes and relaxation exercises for 15 minute as well as 30 Sharing thought and emotions about session subject.

#### 7-Data collection

Data were collected between September 2020 to February 2021

#### 8-Validity of the instrument:

Firstly, the questionnaire items are translate from English to Arabia by a professional experienced in translating Health survey questionnaires and then the questionnaires back translated into English in order to check for possible discrepancies and incorporating appropriate changes.

Secondly, the content validity of questionnaire was determining through use of a panel of expert to examine the questionnaire content for adequacy and clarity to realize end goal to accomplish the targets of the present study. Preparatory questionnaire which designed and displayed to (11) experts for the determine it is validity; they were (6) members from faculty of nursing/university of Babylon, one member from Middle Euphrates university, one expert from Al-Mustaqbal University College, one member from ministry of health/ AL-Najaf health Directorate/ AL-Zahra teaching hospital. 2 members from university of Kufa/College of Nursing.

#### 9- Pilot study

A Purposive sample of 20 pregnant women was selected from primary health care centers in AL-najaf al-Ashraf during the period from 20th to 30th of September 2020.

**This study aimed to:**

- 1-Obtain the clarity and content adequacy of the instrument.
- 2-Determine the reliability of the instrument.
- 3-Estimate the average time required for the interview each interview took (15-25) minute and unlimited time for observation.
- 4-Identify barriers that may encountered during data collection process.
- 5- The sample of the pilot study excluded from the original sample of the study.

### 3.11 Reliability of the instrument

Reliability of an instrument was determining through (Cronbach's  $\alpha$  coefficient) for the present study. Cronbach's alpha Reliability coefficient for fear of pregnant women was ( $r=0.78$ ), this value of Cronbach's  $\alpha$  for the study is considered acceptable.

Table 1: Reliability of the instrument

Sample	N. Items	Alpha Cronbach's	Acceptable value	Assessment
20	41	0.84	0.71 – 0.91	Pass

## Results

Table (1): Distribution the Study and Control Group according to their PTSD symptoms after education (Post-test)

Pre-te	Study group (Pre-test)							Control group (Pre-test)						
	F			%			MS	F			%			MS
	N	S	A	N	S	A		N	S	A	N	S	A	
I avoided letting myself get upset when I thought about it or was reminded of it.	11	18	1	36.67	60	3.33	1.67	0	15	15	0	50	50	2.50
I felt as if it hadn't happened or wasn't real.	23	6	1	76.67	20	3.33	1.27	0	15	15	0	50	50	2.50
I stayed away from reminders about it.	24	6	0	86.67	13.33	0	1.13	0	11	19	0	36.67	63.33	2.63

I tried not to think about it.	24	6	0	80	20	0	1.2	1	1	1	3.3	33.3	63.3	2.60
I was aware that I still had a lot of feelings about it, but I didn't deal with them.	25	5	0	33.33	16.67	0	1.17	0	14	16	0	46.67	53.33	2.53
My feelings about it were kind of numb.	13	16	1	43.33	53.33	3.33	1.60	0	6	24	0	20	80	2.80
I tried to remove it from my memory.	26	4	0	86.67	13.33	0	1.13	0	12	18	0	40	60	2.60
I tried not to talk about it.	12	17	1	40	56.67	3.33	1.67	0	15	15	0	50	50	2.50
Any reminder brought back feelings about labor.	10	20	0	33.33	66.67	0	1.67	0	19	11	0	63.33	36.67	2.37
I had trouble staying asleep	8	22	0	26.67	73.33	0	1.73	0	6	24	0	20	80	2.80
Other things kept making me think about it.	9	21	0	0	30	70	1.70	0	17	13	0	56.67	43.33	2.43

This table shows that 60% from study group and 50 % from control group sometime they avoided letting themselves get upset when they thought about labor or was reminded of it. 76.67% from study group they never felt as if labor hadn't happened or wasn't real while 50 % from control group sometime felt as if labor hadn't happened or wasn't real. 86.67 % from study group they never stayed away from reminders labor while 63.33% from control group always stayed away from reminders labor. 80% from study group and 63.33% from control group always they tried not to think about labor. 83% from study group and 53% from control group they always aware that they still had a lot of feelings about labor. 53% from study group sometime their feelings about labor were kind of numb while 80 % from control group always their feelings about labor were kind of numb. 86.67 % from study group they never tried to remove labor from their memory while 60% from control group always they tried to remove labor from their memory. 56.67% from study group and 50 % from control group sometime they tried not to talk about labor and delivery. 66.67 % from study group and 63% from control group sometime were any reminder brought back feelings about labor. 73% from study group sometime they have trouble staying asleep while 80% from control group always they have trouble staying asleep. 70 % from study group always Other things kept making them think about labor while 65.67 % from control group sometime Other things kept making them think about labor.

**Continue table (1): Distribution the Study and Control Group according to their**

Item	Study group						Control group							
	F			%			MS	F			%			MS
	N	S	A	N	S	A		N	S	A	N	S	A	

**PTSD symptoms after education (Post-test)**

I thought about it when I didn't mean to.	11	18	1	36.67	60	3.33	1.67	0	14	16	0	46.67	53.33	2.53
Pictures about it popped into my mind.	9	21	0	30	70	0	1.70	0	17	13	0	56.67	43.33	2.34
I found myself acting or feeling as though I was back at that time.	13	17	0	43.33	56.67	0	1.57	0	16	14	0	53.33	46.67	2.47
I had waves of strong feelings about it.	14	16	0	46.67	53.33	0	1.53	0	8	22	0	26.67	73.33	2.73
I had dreams about it.	13	17	0	43.33	56.67	0	1.57	0	13	17	0	43.33	56.67	2.57
I felt irritable and angry	12	18	0	40	60	0	1.60	0	14	16	0	46.67	53.33	2.53
I was jumpy and easily startled.	11	18	1	36.67	60	3.33	1.67	0	6	24	0	20	80	2.80
I had trouble falling asleep	11	18	1	36.67	60	3.33	1.67	0	14	16	0	46.67	53.33	2.53
I had trouble concentrating	6	22	2	20	73.33	6.67	1.87	0	17	13	0	56.67	43.33	2.34
Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.	6	23	1	20	76.67	3.33	1.83	0	30	0	0	100	0	2.00
I felt watchful or on-guard	8	18	4	26.67	60	13.33	1.87	0	30	0	0	100	0	2.00

### symptoms after education (Post-test)

This table shows that 60 % from study group sometime they thought about labor when they didn't mean to, while 53% from control group always they thought about labor when they didn't mean to. 70% from study group and 56.67 % from control group they have Pictures about labor popped into their mind. 56% from study group and 53 % from control group sometime they found themselves acting or feeling as though they back at that time. 53% from study group sometime they have had waves of strong feelings about it while 73% from control group they have had waves of strong feelings about it. 56.67% from both study and control group they have had dreams about labor. 60 % from study group sometime they have felt irritable and angry while 53.33 % from control group always they have felt irritable and angry. 60 % from study group sometime they jumpy and easily startled while 80 % from control group always they jumpy and easily startled. 60 % from study group sometime they had trouble falling asleep while 53.33 % from control group they had trouble falling asleep. 73.33% from study group and 56.67 from control group they had trouble concentrating. 76.67 % from study group and 100% from control group sometime when they Reminders of labor caused them to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart. 60 % from study group and 100 % from control group sometime they felt watchful or on-guard



Table (2): Distribution the Study and Control Group according to their PTSD symptoms after education (Posttest) (Domain based analysis).

Items	Study group (Pre-test)		Control group	
	MS	Assess	MS	Assess
<b>Avoidance</b>	<b>1.13</b>	Mild	<b>2.80</b>	<b>Sever</b>
<b>Intrusion</b>	<b>1.57</b>	Mild	<b>2.70</b>	<b>Sever</b>
<b>Hyperaraousal</b>	<b>1.77</b>	Moderate	<b>3.00</b>	<b>Sever</b>
<b>Total evaluation</b>	<b>1.56</b>	Mild	<b>2.55</b>	<b>Sever</b>

This table shows that study group have mild Avoidance and Intrusion PTSD symptoms as well as Moderate Hyperaraousal symptoms while in control group sever Avoidance, Intrusion and Hyperaraousal symptoms. Also this table shows that study group have mild PTSD symptoms While control group have severed PTSD symptoms.

Table (3): Statistical comparison of Study and control groups regarding to PTSD

PTSDs	Post-test (After education)	N	Mean	SD	t-test (df=58)	p-value	Sig.
		Study Post	30	1.56	0.32	-14.474	<0.001
	Control Post	30	2.55	0.18			

This table shows that there is high significant relationship between study and control group related to post-traumatic stress disorders symptoms.

Table (4): relationship between PTSD after education (Post-test) and their demographic data for the Study and Control Group by using Chi-square test.

Demographic data	Study Pre			Control Pre		
	Chi-square ( $X^2$ )	df	P-value (Sig.)	Chi-square ( $X^2$ )	df	P-value (Sig.)
Maternal age (year)	2.01	1	0.15 (NS)	0.35	1	0.55 (NS)
Occupation	0.53	1	0.46 (NS)	1.15	1	0.28 (NS)
Place of residence	0.36	1	0.54 (NS)	4.45	1	0.03 (S)
Educational level	4.77	5	0.44 (NS)	1.93	5	0.58 (NS)
Gestational age (weekly)	0.026	1	0.87 (NS)	1.83	1	0.17 (NS)
Desired of delivery	0.87	1	0.35 (NS)	0.03	1	0.85 (NS)
Planning of pregnancy	0.53	1	0.46 (NS)	0.54	1	0.46 (NS)
Party	1.42	1	0.23 (NS)	1.15	1	0.28 (NS)
Previous abortion	0.02	1	0.87 (NS)	0.57	1	0.44 (NS)
Primary health sectors	4.95	4	0.29 (NS)	5.76	5	0.32 (NS)
Previous delivery	1.19	2	0.38 (NS)	7.27	3	0.06 (NS)



This table shows that there is no significant relationship between PTSD after education (Post-test) and their demographic data for the Study and Control Group except there is significant relationship between place of residence and PTSD after education.

## Discussion

The results of current study shows that most participants were women aged greater than 25 years old, this results agree with study of Bāk & Mastalerz in 2016; they found that a large percentage of study and control groups have 30-40 year. As well as the present study found that 90% of both group (control and study) were housewife while 10% of them have employee, 73.33% from experimental group and 70% from control group were lived in urban area. Rahmani et al., 2020 had support that most of participants are housewife(94%) as well as they lived in city with (72.22%) represented study group and (70.96%) from control group. In addition the present study had also revealed that 37% in control group and 33% in studied group have Secondary education Uçar and Golbasi in 2019 also found that most participants including interventional group with 50% and control group with 45% they have Secondary education

Current study shows that 70 % of studied and 76 % of control group in 30 week of gestational age in the same study Uslu Yuvaci et al., in 2020 they found that 80% from participants groups at 30 week of gestational age.

86% from control and 80% from experimental groups they are planned to pregnancy. This result agree with Rahmani et al., 2020 they found that 80% from study group and 87% from control group wanted pregnancy. On the other hand; 60% from experimental group and 50% from control group they are nulliparous women while 50% from control group and 40% from experimental group they are multiparous study of J. Kacperczyk-Bartnik et al, 2019 revealed that women who attended study were more often primipara. 70% from experimental group and 67% from control group they did not have previous abortion. This result agree with study of Rahmani et al., in 2020 shown that women who attended study didn't have previous abortion.

Present study found that 80 % from control group and 53% from study group have Caesarean Section desired while 47% from study group and 20 % from control group have spontaneous vaginal delivery desired, whereas after education program 93% from study group and 27% from control group chooses spontaneous vaginal delivery while 73% from control group and 7 % from study group have Caesarean Section desired. This result agree with study of Rouhe et al., 2013 they revealed that percentage of Caesarean Section desired increased in control and study group before intervention while decreased in study group after intervention, however parentage of spontaneous vaginal delivery desired in study group increased while decreased in control group and study of Uslu Yuvaci et al., 2020 also supported this result when they found that the parentage of spontaneous vaginal delivery desired in study group increased after educational program while decreased Caesarean Section desired.

The present study shown that Previous delivery of 43 % from control group and 37% from study group were spontaneous vaginal delivery. Since the sample includes nulliparous women, 60% in the study sample and 50% of the control sample have not

had a previous birth study of Stoll et al., 2015 they found that less than half of participants they have spontaneous vaginal delivery previously.

Current study revealed that more than half from study group and control group sometime they avoided letting themselves get upset when they thought about labor or was reminded of it. high percentage from study group they never felt as if labor hadn't happened or wasn't real while half from control group sometime felt as if labor hadn't happened or wasn't real. more than half from study group they never stayed away from reminders labor while the same percentage from control group always stayed away from reminders labor. Study of Crawley et al., 2013 support this results when they finds that high percentage of study particepentes have moderate aviodence symptoms .

As well as present study finds that high percentage from study group and control group always they tried not to think about labor. more than fifty percentages from study group and control group they always aware that they still had a lot of feelings about labor. high percentage from study group sometime their feelings about labor were kind of numb while high percent from control group always their feelings about labor were kind of numb Gökçe İsbîr et al., 2016 also found that level of PTS in sample and the proportion of women reporting severe symptoms.

Also the present study finds that high percentage from study group they never tried to remove labor from their memory while more than half from control group always they tried to remove labor from their memory. more than half from study group and control group sometime they tried not to talk about labor and delivery as well as they have symptom of any reminder brought back feelings about labor. high percentage from study group sometime they have trouble staying asleep while high percentage from control group always they have trouble staying asleep more than fifty from study group always Other things kept making them think about labor while sometime control group other things kept making them think about labor. (Cook et al., 2018) also support this results the study finds that most of study sample they have sleeping trouble and negative thinking about labor.

Study shows that high percentage from study group sometime they thought about labor when they didn't mean to, while high percentage from control group always they thought about labor when they didn't mean to. high percentage from study group and control group they have Pictures about labor popped into their mind. more than fifty percentages from study group and control group sometime they found themselves acting or feeling as though they back at that time. Study of (Akmaliyah, 2013) support this results the study found that high percentage from women have negative pictures about labor. Also more than fifty percentages from study group sometime they have had waves of strong feelings about labor while high percentage from control group they have had waves of strong feelings about labor. on the other hand, more than half from both study and control group they have had dreams about labor. high percentage from study group sometime they have felt irritable and angry while high percentage from control group always they have felt irritable and angry the study of (de Graaff et al., 2018) find that emotional numbing and arousal were more strongly associated with other symptoms of depression and anxiety and study of (Garthus-Niegel et al., 2013) also most of the study sample of dreams, nightmares, intense memories, or flash- backs.

Present study shows that study group have mild Avoidance and Intrusion PTSD symptoms as well as Moderate Hyperarousal symptoms while in control group sever Avoidance, Intrusion and Hyperarousal symptoms. Also this table shows that study group have mild PTSD symptoms While control group have severed PTSD symptoms. this results supported by Study of (G. Gökçe İsbir et al., 2016) indicate that antenatal education can reduce the occurrence of PTSD symptoms following childbirth as well as study of (de Graaff et al., 2018 also support this results the study find that three studies found that structured psychological interventions had a significant positive effect on PTSD symptoms which are (Priest et al., 2003), (Gamble et al., 2005), (Selkirk et al., 2006).

Presents a comparison of PTSD symptoms following childbirth between the intervention and control groups in the postpartum period. The difference in PTSD symptoms following childbirth in the postpartum period between the groups was high significant. This result also agree with study of (G. Gökçe İsbir et al., 2016) that indicate that highly significant differences between intervention and control group related PTSDs.

### **Conclusion**

Present study shows that study group have mild Avoidance and Intrusion PTSD symptoms as well as Moderate Hyperarousal symptoms while in control group sever Avoidance, Intrusion and Hyperarousal symptoms. Also this table shows that study group have mild PTSD symptoms While control group have severed PTSD symptoms. Highly significant differences between intervention and control group related PTSDs.

### **Recommendations**

The current study recommends that the Ministry of Health in Iraq: must be improve women expectation and experiences education program through:

\*Providing educational programs in primary health care centers for pregnant women about labor and delivery.

\*Further testing is needed to assess WDEQ-A women expectation and experiences during labor in different cultural settings and to evaluate its potential applicability in clinical settings to evaluate the emotional health of women facing childbirth and identify those at risk.

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