

## Comparing Post-Traumatic Stress Disorder in Primiparous and Multiparous Women with Preeclampsia

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### ABSTRACT

**Background & aim:** Post-Traumatic Stress Disorder (PTSD) is one of the anxiety disorders which occurs in postpartum period. The prevalence of PTSD induced by preeclampsia has been already reported as 28%, however no study was found to compare PTSD in primiparous and multiparous women. This study was therefore conducted to compare PTSD in primiparous and multiparous women.

**Methods:** This comparative descriptive study was performed on 100 pregnant women with preeclampsia including 56 primiparous and 44 multiparous women, who selected conveniently from labor wards of university hospitals in Mashhad, Iran in 2012. PTSD was diagnosed by psychiatrist and Perinatal Post-traumatic stress Questionnaire (PPQ) in 6th week postpartum. Social support was measured using modified Hopkins questionnaire in 2nd and 6th week postpartum. Data were analyzed with SPSS version16 using Spearman correlation coefficient and Mann-Whitney U test.

**Results:** The rate of PTSD was 24% in primiparous and 37.8% in multiparous women. There was no significant difference in relation to mean score of PTSD in primiparous and multiparous women. Mean score of social support in 2nd and 6th week postpartum was significantly higher in primiparous women ( $P \leq 0.001$ ). 34% of multiparous vs. 5.4% of primiparous women had unwanted pregnancy ( $P \leq 0.001$ ). There was also a direct relationship between postpartum social support in 2nd ( $P \leq 0.005$ ) and 6th week postpartum ( $P \leq 0.002$ ) and the rate of PTSD.

**Conclusion:** The rate and mean score of PTSD in multiparous was higher than primiparous women. Thus, it seems that multiparous women are at higher risk for PTSD due to lower postpartum social support and higher rate of unwanted pregnancy.

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### Introduction

PTSD-induced pregnancy was mentioned for the first time in 1990 (1). In PTSD cases, after trauma, some symptoms are manifested in which individual is very high risk for severe injury, death or physical injury (2-4). In these conditions, some reactions such as severe fear, helplessness, fatigue and weakness, numbness, apathy, irritability, sleep, and concentration disorders would appear. Individuals imagine

events in their minds and would like to prevent to remind it (3). It is known as PTSD if it lasts for more than four weeks (1). The main symptoms are re-experiencing of stressful conditions (e.g. previous stressors, returning to past and nightmares, preventing thoughts and situations which are reminder for him and irritable symptoms like sleep problems and difficulty with concentration) (1,4).

PTSD could related to a history of mental health, unwanted pregnancy, nulliparity, history

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of hospitalization due to pregnancy complications, hyperemesis gravidarum early contractions, history of abortion, type of delivery, neonatal disorders, history of hospitalization for neonate in NICU, neonatal care stress, dissatisfaction of neonates' sex in some cultures (3), history of traumatic pregnancy (3,5), high level of anxiety, feeling of lack of control (2,4), emotional distress (2), complicated pregnancy like complications, and medical problems of pregnancy (3).

Preeclampsia is one of the medical problems which are complex and pregnancy specific syndrome with prevalence of 6%-8% (4). Some studies have reported prevalence of 28% for PTSD following pregnancy (6). Mothers with PTSD experience nightmare, furiosity, and anxiety. They could not also cope with new motherhood role (2). On the other hand, stress and fear of delivery may predict PTSD (7). The score of fear of delivery in primiparous women is significantly higher than multiparous (8).

As the stress of the first child-bearing is categorized in severe stresses, it is expected that primiparous women experience more problems. It is due to facing new responsibilities like caring and breast feeding the neonate having no previous experience. The first birth, of course, is being paid more attention by the relatives because it is the first life events; consequently mother and neonate are supported well.

Multiparous women receive less support due to general myth that they are experienced and have enough knowledge of parenting (9). Soderquist reported a higher incidence of PTSD among multiparous women (7). Pregnancy and postpartum period are critical time for occurring mental health disorders and worsening previous mental problems (3) and according to our knowledge there is no study in this relation in Iran. Therefore, we conducted this study to compare PTSD in primiparous and multiparous mothers with preeclampsia.

## Materials and Methods

This descriptive study was conducted on 100 pregnant women with preeclampsia who were diagnosed and hospitalized in governmental maternity departments for termination of their pregnancy within the week before starting the study. They were selected by convenience

sampling. Sample size was calculated 80 using formula of comparing means (40 participants for each group). In present study, 60 primiparous and 50 multiparous women were introduced to study (n=110). Due to attrition, data of 56 primiparous and 44 multiparous (n=100) were analyzed. Inclusion criteria were term pregnancy; age higher than 18 years old and singleton pregnancy. Exclusion criteria were prenatal death, NICU hospitalization more than 24 hours, experiencing stressful events during study, unhealthy child birth, major depression, and high level of anxiety. At first, demographic data questionnaire, Beck Depression Inventory II (BDI-II) and Spielberger State-Trait Anxiety Inventory (STAI) questionnaire were completed.

Participants were screened using Trauma History Screen questionnaire. They were excluded if they answered "Yes" to each question. In multiparous women, Prenatal Post traumatic stress Questionnaire (PPQ) was also completed for PTSD due to prenatal events in previous deliveries. Women with a score of more than 6 were excluded. In the first 24 hour after delivery, maternal- neonatal data were collected. In the 2nd postpartum week, maternal-neonatal data and social support questionnaire, Beck II depression, STAI and PTSD questionnaire were completed.

Trauma History Screen questionnaire consisted of 14 Yes-No questions about different events. Social support was measured using modified Hopkins questionnaire. It was a questionnaire including 20 questions with Likert Scale from zero to four (never=0), (rarely=1), (usually=2), (often=3), (always=4). PPQ had 14 YES-NO questions. Participants whose score was higher than 6 were considered as PTSD. Demographic data questionnaire, delivery data and maternal-neonatal data questionnaire had questions for type of delivery, fetal presentation, labor duration, pain and fatigue score, blood pressure, preeclampsia tests, weight and Apgar at birth and transferring to NICU.

Maternal-neonatal data questionnaire in 2<sup>nd</sup> postpartum week included questions for neonatal feeding and mother's satisfaction of the sex of neonate. Content validity was used for confirming validity of questionnaires. Reliability of modified Hopkins and PTSD questionnaires were confirmed by Cronbach's alpha and internal consistency

( $\alpha=90\%$ ). Reliability of self-structured questionnaire were confirmed by test-retest ( $\alpha=95\%$ ).

Beck II depression and STAI questionnaire were valid and reliable. Data were analyzed with SPSS version 16 using descriptive and analytical statistics. Chi-Square, independent t-test, Mann-Whitney U test, and Kruskal-Wallis were used for comparing two groups of PTSD and Non-PTSD to obtain correlation Spearman coefficient was used.

Ethical issues were considered under supervision of Ethics Committee of Mashhad University of Medical Sciences.

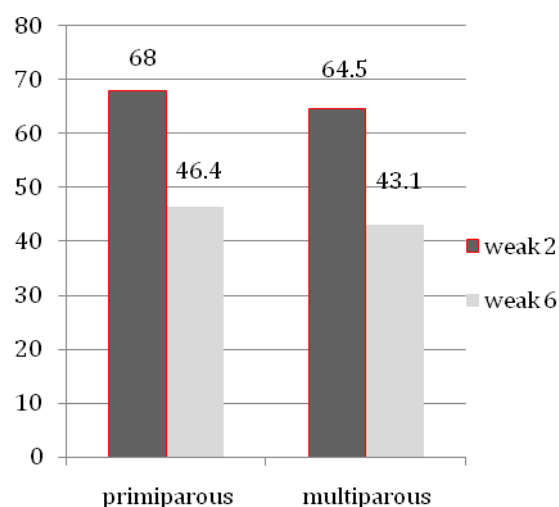
## Results

No significant difference was used between two groups in terms of sex, weight, feeding method, the duration of being in NICU ward, and the satisfaction of neonate sex. They also showed no significant difference for state and trait anxiety and depression score at admission and at 6 weeks after delivery. Most primiparous women had high school diploma and multiparous had junior high school level which was statistically significant ( $P\leq 0.001$ ). Most of them were housewife ( $P\leq 0.003$ ).

43.1% of primiparous had unwanted pregnancy in comparison with 5.4% in multiparous women ( $P\leq 0.001$ ). Mean age of multiparous was higher than primiparous mothers (Table 1).

Most of primiparous referred to both health care centers and physicians for prenatal care.

Multiparous women monthly referred to health care centers. 56% and 44% of subjects were primiparous and multiparous, respectively. The prevalence and mean score of PTSD in two groups were not significantly different but the mean score in multiparous women was higher (Table 2 and 3). Mean of postpartum social support in week 6 in primiparous women was significantly higher than multiparous women ( $P\leq 0.001$ ) (Figure 1).



**Figure 1.** Mean of social support scores at weeks 2 and 6 postpartum in primiparous and multiparous women

**Table 1.** Mean age of primiparous and multiparous women

Variable	Groups						T-test
	Primiparous		Multiparous		Total		
	Mean $\pm$ SD	n	Mean $\pm$ SD	n	Mean $\pm$ SD	n	
Maternal age (years)	23.94 $\pm$ 3.8	56	31.31 $\pm$ 5.2	44	27.19 $\pm$ 5.7	100	t= -8.144 df=98 P $\leq$ 0.001

**Table 2.** Frequency distribution of prevalence of post traumatic stress disorder in primiparous and multiparous women

Variables	Primiparous		Multiparous		Total		Chi-square test
	Percent	N	Percent	N	Percent	N	
Without PTSD	78.6	(44)	68.2	(30)	74.0	(74)	df=1 P=0.240
With PTSD	21.4	(12)	31.8	(14)	26.0	(26)	
Total	100.0	(56)	100.0	(44)	100.0	(100)	

**Table 3.** Mean Score of Post-Traumatic Stress Disorder in nulliparous and multiparous women

Variable	Groups						Mann-Whitney test
	Primiparous		Multiparous		Total		
	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	
PTSD score	4.39±2.4	56	5.36±2.5	44	4.82±2.5	100	t= -1.955 df=98 P=0.053

**Table 4.** Correlation coefficients of age and social support in weeks 2 and 6 postpartum with PTSD mean score

Variables	Mean of Post-Traumatic Stress Disorder	
	P value	Pearson correlation coefficient
Age	P=0.564	r=0.058
Social support in week 2	P=0.062	r=0.188
Social support in week 6	P=0.095	r=0.168

**Table 5.** The Relationship between age and social support in two groups of with and without PTSD in weeks 2 and 6 postpartum

Variables	Without PTSD		With PTSD		t-test
	Mean ± SD	N	Mean ± SD	N	
Age	5.5±9.26	74	4.6±7.27	26	P=0.556
Social support in week 2	1.14±0.36	74	5.8±5.27	26	P=0.005
Social support in week 6	5.10±8.24	74	0.5±9.17	26	P=0.002

A significant relationship was found between postpartum social support in week 2 and week 6 and mean score of PTSD. However, a significant difference was found in terms of social support in week 2 and 6 postpartum between two groups of subjects with and without PTSD (Table 4 and 5). Based on Kruskal-Wallis test no significant difference was found between educational level, maternal job and desire to pregnancy with PTSD mean score.

Similarly, Chi-square test revealed no significant relationship between educational level, maternal job and desire to pregnancy with prevalence of PTSD.

## Discussion

The present study showed no significant relationship between mothers' age and PTSD like what Modares found (3). No significant relationship also was found between age and PTSD mean score. In two other studies there was likewise no relationship between age and PTSD (5, 7). But Ford *et al.* (2010) reported significant relationship between age and PTSD (10). Iles *et al.* (2011) showed negative relationship between age and stress signs (11).

In our study mean age was 27.19 years, but in the previous studies it was 31.7 and 32.12 years, respectively. It seems that the cause of significant relationship could be related to wider distribution of age in these studies.

The result of our study differ from Modares *et al.* work (2010) which showed significant difference between educational level and PTSD (3). Adewaya *et al.* (2005) and Modares *et al.* (2010) reported significant relationship between desire to pregnancy and PTSD. The association was not explored in the present study, however PTSD mean score was higher in unwanted pregnancy (3, 5). Our finding related to relationship between postpartum social support in week 2 and 6 with PTSD are consistent with other studies (3, 5). There was significant difference in primiparous and multiparous women between postpartum social support at 2<sup>nd</sup> and 6<sup>th</sup> week. In Nazari's *et al.* (2012) study, primiparous women in the first and second month postpartum got higher score of social support which was similar to this study (9). Cheng (2009) in a study on Chinese mothers in the USA showed that higher parity is associated with less social support (12).

In current research, higher rate and mean score of PTSD in multiparous women was similar to Soderquist's work (2009) (7). According to the findings, postpartum social support in multiparous was less than primiparous women. On the other hand unwanted pregnancy was higher among multiparous women. Both of them could be possible causes for PTSD in multiparous in comparison with primiparous women. Traditionally, family members support mother from the beginning of delivery and help her in neonatal care. This support is good in the first weeks. It gradually decreases by time. Primiparous mothers receive more support than multiparous mothers, because they are at the central point of attention in family while multiparous women due to having previous childbirth is deemed more experienced.

The strength of the study consists of adopting prospective design and controlling confounding factors such as postpartum social support in week 2 and week 6, and depression and State - Trait anxiety at admission and week 6. The strict inclusion and exclusion criteria could produce some restrictions in the generalizability of the results.

## Conclusion

As multiparous mothers receive less attention in comparison with primiparous women, it is suggested that staff should remind this point to their families. They may deprive from social support due to having previous experience.

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## Conflict of Interest

The authors declare no conflicts of interest.

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