

## The Relationship between Happiness and Fear of Childbirth in Nulliparous Women

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ARTICLE INFO	ABSTRACT
<i>Article type:</i> Original article	<b>Background &amp; aim:</b> Happiness is a mental or emotional state of well-being. Happy individuals tend to interpret and process feeling in a positive way. Accordingly, the response to the pain may alter due to the effects of subjective elements on the pain perception. This study aimed to evaluate the relationship between the level of contentment and fear of childbirth (FOC) in nulliparous women referring to the healthcare centers of Mashhad, Iran.
<i>Article History:</i> Received: 04- Oct -2015 Accepted: 24- Jul -2017	<b>Methods:</b> This cross-sectional study was conducted on 370 nulliparous women who were selected through multistage sampling method from urban healthcare centers in Mashhad, Iran, 2014. Data collected using demographic and obstetric questionnaire, Oxford Happiness Questionnaire, and Childbirth Attitude Questionnaire (CAQ) (an instrument for measuring the FOC). Data analyzed using Kolmogorov-Smirnov, one-way analysis of variance (ANOVA), independent samples t-test, regression, Kruskal-Wallis, Chi-square, Tukey honest significant difference (HSD), Mann-Whitney U, and Spearman and Pearson correlation coefficient tests with SPSS software version 11.5.
<i>Key words:</i> Delivery Fear Happiness Nulliparous	<b>Results:</b> The mean levels of happiness and FOC were $123.97 \pm 18.82$ and $45.80 \pm 7.57$ , respectively. There was a significant correlation between happiness and FOC ( $P < 0.001$ , $r = -0.285$ ), i.e. happier women experienced less FOC. Also Vaginal delivery was the preferred choice of the happier women ( $P = 0.033$ , $t = 2.152$ ).
	<b>Conclusion:</b> Considering the relationship between happiness and FOC, the necessary measures should be taken to improve happiness in pregnant women in order to increase their tendency toward normal vaginal childbirth.

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### Introduction

Happiness, as a criterion of mental health is one of the six basic emotions including anger, fear, disgust, surprise, sadness, and happiness. Contentment is an inner subjective phenomenon, a positive personality characteristic, and a stable feeling, comprising three basic components of positive emotions, life satisfaction, and absence of negative emotions such as anxiety and depression (1). In fact, cheerful individuals are those who interpret the events in a positive vein

with happiness and satisfaction (2).

Gestation is an experience causing a wide range of physical, mental, and social alterations in women. Pregnant women's perceptions and attitudes toward pregnancy are important due to their impact on the individual's mood and mental status (3). The psychologically healthy women consider the pregnancy as a manifestation of self-actualization and feminine identity (4, 5).

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Many women contemplate the gestation as a unique experience and in the most cases, they feel happy during the pregnancy (3). According to a study conducted by Jayasvasti in Thailand in 2005, the levels of contentment during the pregnancy was evaluated and 57% of the mothers revealed high and the rest exposed moderate levels of contentment (6). The subjective elements may alter the perception and reaction to the pain (7).

In another study conducted by Tang et al. in 2008, two mood-induction procedures of happiness and sadness resulted into different levels of the pain and tolerance. The more contentment led to lower pain and higher tolerance levels and vice versa (8).

The fear of childbirth (FOC) is a common problem in pregnant women, leading to unindicated cesarean sections requested by them (9). According to a study performed in Sweden, 36% of the subjects believe that the fear of pain is the major reason why an individual prefer cesarean section as the delivery method of choice (10). It was in consistent with the Shariat et al. study in 2002 which determined that the fear of labor pain was the main reason of choosing cesarean section in 71% of the women (11). It is estimated about 5 to 20% of pregnant women have increased FOC, leading to the increment of the rate of caesarean section (9, 12).

The personality and emotional characteristics of the mother, low levels of pain tolerance, awareness about others experience, and concerns about the probable adverse effects are considered as the causes of FOC (13). The FOC is different in women who have already experienced the childbirth in comparison to those who experience it for the first time. Several psychological characteristics play an important role in the incidence and intensity of this issue.

In addition, fear of labor pain is a predictor of pain and distress during labor and increases the elective cesarean sections. However, the cesarean section is not the solution and fear may remain in postpartum period and leave an unpleasant experience of childbirth (14, 15). Other reasons of FOC including fear of death, losing her control, or turning to utterly senseless behavior during the delivery (16).

Perhaps more contentment increases the self-confidence and the ability of controlling negative emotions like fear (8). As mentioned above, the psychological characteristics of mother is effective in the incidence of FOC. The maternal stress and negative emotional status have adverse effects on the delivery and even lead to the request for unnecessary cesarean section.

The majority of the studies conducted in this field are about the effects of negative emotions such as fear, anxiety, and discomfort on pregnancy, and there are little evidences regarding the positive ones such as happiness and its related factors. Despite an extensive search for similar studies, there were no evidence regarding happiness during pregnancy and its correlation with FOC and mode of delivery.

This study sought to draw the pregnant women attention and support to promote the contentment, educate them about vaginal delivery, and encourage them to choose this mode of delivery. In this study, the correlation between happiness and FOC was evaluated in nulliparous pregnant women referred to the healthcare centers of Mashhad, Iran, 2014.

## Materials and Methods

This cross-sectional study conducted on 370 nulliparous pregnant women in 2014. Firstly, one of the health centers in Mashhad was selected by simple random sampling method. Then, based on the three sub-centers of that center including Ab-o-Bargh, Lashgar, and Nejati health centers were selected by convenient sampling. Each week, the samples were taken from of them based on the largest number of referred pregnant women. Then, the eligible women were entered to the study by convenient sampling.

The Inclusion criteria entailed the literate, nulliparous, monogamous with no decision of divorce, and Iranian pregnant women at the gestational age of 29 to 32 weeks with singleton and low-risk pregnancy. Moreover, their past medical and social histories included no history of infertility, mental or physical chronic diseases, substance abuse, major stressful life events during the last six months, training about vaginal delivery and the labor pain management

methods, and the absence of indications for cesarean section.

After conducting a pilot study on the fifty subjects, with 95% confidence interval ( $\alpha=0.05$ ) and the power of 80% ( $\beta=0.2$ ), the appropriate sample size was calculated as 368 cases and finally 375 cases were enrolled. Out of this number, five cases were excluded from the study due to not responding to at least 20% of the questions.

The Oxford Happiness, Childbirth Attitude (CAQ), and demographic questionnaires were used for data collection. The demographic questionnaire was two-fold: demographic information and maternity records. The Oxford Happiness Questionnaire is consisted of 29 questions with six-point Likert scales (from strongly agree to strongly disagree). The scores ranged from 29 to 174 and were divided to low (less than or equal to 100), moderate (101 to 131) and high (more than or equal to 132) levels of contentment (6). The formal and content validity and reliability of the Persian version of this questionnaire was confirmed by Hadi Nejad in 2006. The Test-retest reliability with correlation coefficient of 0.78 was applied to confirm the reliability of the questionnaire (17). In the present study, the reliability was calculated and the Cronbach's alpha was 0.89. The CAQ is an instrument for measuring the FOC and entails 16 items. Each item is scored based on the four-point Likert scales ranged from 16 to 64 and as higher the score the level of FOC is higher. The content validity of this questionnaire was approved and the internal consistency was satisfactory (18, 19). In the current study, the reliability was calculated with Cronbach's alpha and was 0.87.

The participants were selected daily by the researchers from 8 am to 12 pm during June to December 2014. After obtaining the written informed consent, the pregnant women were requested to fill in the questionnaires in a quiet place with the assistance of the interviewer. Furthermore, the subjects were ensured that it is not mandatory to complete the questionnaires and the data would be de-identified confidential. The mean required time for completing the

questionnaire was 15 min.

For data analysis the descriptive and inferential statistics as well as Kolmogorov-Smirnov, one-way analysis of variance (ANOVA), independent samples t-test, regression testing, Kruskal-Wallis, Chi-squared, Tukey honest significant difference (HSD), Mann-Whitney U, and Spearman and Pearson correlation coefficient tests were used in SPSS software version 11.5 after obtaining the type of distribution for the variables. The negative questions in the questionnaires of happiness and attitude toward the labor were modified and the scores were inversely entered.

## Results

The mean age of the participants was  $24.5\pm 4.67$  years old. Out of all the subjects, about 42.2% of them had high school diploma, 82.4% of them were householder, 65.3% of them leased their house, and 72.8% of them had suitable family income (Table 1).

As demonstrated in Table 2 and based on the Kolmogorov-Smirnov test, the happiness and FOC were normally distributed. Furthermore, the Pearson correlation coefficient and linear regression were applied to determine the correlation between these variables. Additionally, one-way ANOVA was applied to evaluate the impact of education, employment, and income as qualitative variables. Moreover, the independent t-test was used to assess the effect of housing status as a two-level qualitative nominal variable on this variable.

Regarding the results of one-way ANOVA, there was no significant relationship between the occupation or education and the contentment (Table 1). According to the obtained results from independent t-test, no correlation was found between housing status and the level of happiness. Finally, given the results of one-way ANOVA, a significant relationship was between the levels of family income and contentment ( $P=0.001$ ). Likewise, the level of happiness increased along with the family income based on the results of the

**Table 1.** The relationship between diverse demographic characteristics and the level of contentment

Variable		Frequency n (%)	Mean of happiness	SD** of happiness	P-value*
Education	Elementary	33 (8.9)	123.81	14.05	0.568 F=0.776
	High school	106(28.6)	126.86	16.14	
	Diploma	156 (42.2)	122.16	19.65	
	Above diploma	31 (8.4)	121.80	26.62	
	BC	42 (11.4)	127.50	21.23	
	MSc	2 (0.5)	106.00	-	
	Total	370 (100.0)			
* One-way ANOVA, ** Standard deviation					
Variable		Frequency n (%)	Mean of happiness	SD of happiness	P-value*
Job	Householder	305 (82.4)	123.45	18.92	0.099 F=1.979
	Student	28 (7.6)	126.00	18.91	
	Employee	24 (6.5)	132.92	19.62	
	House job	8 (2.2)	106.22	14.20	
	Free	5 (1.4)	133.69	21.38	
	Total	370 (100.0)			
*One way ANOVA					
Variable		Frequency n (%)	Mean of happiness	SD of happiness	P-value*
Housing status	Private	124 (34.7)	125.45	19.83	P=0.484 t=0.702
	Renting	233 (65.3)	123.38	19.09	
	Total	370 (100.0)			
*Independent t-test					
Variable		Frequency n (%)	Mean of happiness	SD of happiness	P-value*
Income level	Not adequate	93 (25.8)	115.85	19.59	P=0.001 F=7.361
	Adequate	262 (72.8)	126.72	18.04	
	Fully sufficient	5 (1.4)	139.66	35.21	
	Total	360 (100.0)			

\* One way ANOVA

**Table 2.** Evaluation of the normality of variables

Variable	R-value	P-value*
Happiness	0.798	0.548
Fear of childbirth	0.830	0.497

\* Kolmogorov-Smirnov test was applied

paired t-test as demonstrated in a box plot (Figure 1).

Given the results of this study, there is a significant relationship between diverse levels of contentment and income due to applying the

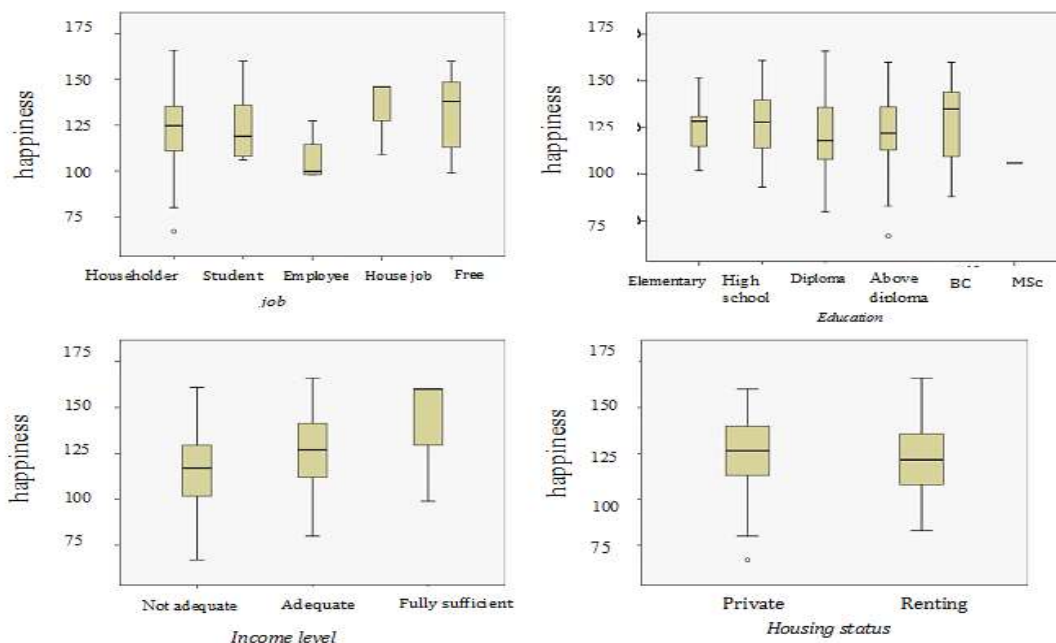
Tukey's test (P=0.001; Table 3, Figure 1).

Based on the results obtained from Pearson test, there was no significant correlation between the age of subjects and the level of happiness (r=0.03, P=0.674). Further, there was no significant correlation between the number of prenatal care visits and contentment (r=0.06, P=0.38). In this study, the more cheerful women chose the vaginal delivery as their choice mode of childbirth. (r=2.152, P=0.033; Table 4, Figure 2).

**Table 3.** The relationship between different levels of contentment and income

Income level		Difference mean	SD	P-value*
Less than enough	Enough	-10.87	3.06	0.001
	More than enough	-23.81	11.12	0.084
Enough	Less than enough	10.87	3.06	0.001
	More than enough	-12.94	10.92	0.464
More than enough	Less than enough	23.81	11.12	0.084
	Enough	12.94	10.92	0.464

\*Tukey's paired test

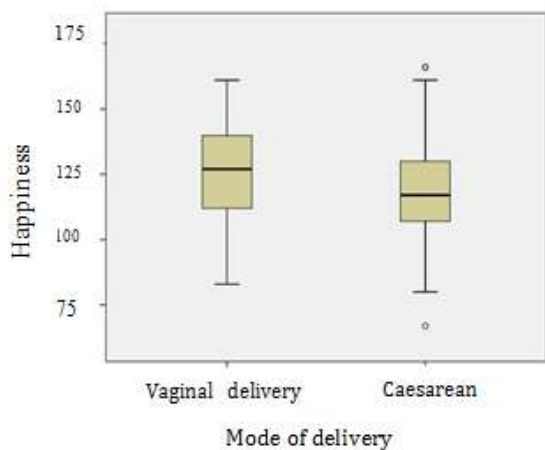


**Figure 1.** Box plot demonstrating the relationship between happiness and demographic characteristics

**Table 4.** Frequency of choosing mode of delivery and its relationship with happiness

Mode of delivery	%	Mean±SD	P-value*
vaginal delivery	69.5	126.06±18.86	P=0.033
caesarean	30.5	119.79±19.16	T=2.152

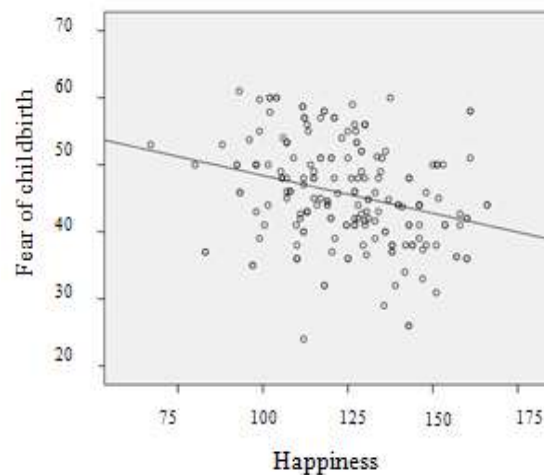
\*Independent t-test



**Figure 2.** The box plot demonstrating the relationship between the levels of happiness and the chosen mode of delivery

In this study, the mean level of happiness was 123.97±18.82. The low, moderate, and high levels of contentment were observed in 10.5%, 55.4%, and 32.4% of the participants,

respectively. The mean score of FOC was



**Figure 3.** The scattered plot demonstrating the regression line between happiness and FOC

45.80±7.57 among the subjects with a significant indirect correlation with the level of



happiness ( $r=-0.285$ ,  $P<0.001$ ; Figure 3). As demonstrated in Table 5, the coefficient of the regression model of happiness was -0.113 with

a significant indirect correlation with FOC ( $P<0.001$ ).

**Table 5.** The regression coefficients of happiness and FOC in the subjects

Variable	Coefficient	SD	Standardized coefficient	r	P-value
Fear of childbirth	59.681	3.423	-	T=17.435	<0.001
Happiness	-0.113	0.027	-0.285	t=-4.139	<0.001

## Discussion

This study aimed to evaluate the correlation between the level of contentment and FOC in the nulliparous women. The mean level of happiness was  $123.97\pm 18.82$ , which indicated that 51.1% of the participants had moderate to high levels of happiness. Golmakani et al. in 2002 conducted a study to evaluate the relationship between the level of happiness and the labor pain coping behaviors, which demonstrated that more cheerful women were more enabled to manage the pain in comparison to those with lower levels of contentment (20).

Regarding the Jayasvasti study in 2005, which was conducted on 438 pregnant women in Thailand, revealed the level of happiness of 57.3% among them (6). In a study performed in Taiwan by Cheng and Pickler on 46 pregnant women the mean level of happiness revealed as moderate to high (21). According to the Hashemi et al. study on the levels of happiness in pregnant women, 72% of the subjects had moderate levels of happiness (22). Although gestation is considered as a critical situation in women's life which alters their physical, mental, and social conditions, it brings happiness for them due as emotional manifestation of self-actualization and feminine identity. Moreover, pregnancy, which is the ability of childbearing, and creativity leads to a sense of happiness and joy in healthy women (23).

In the present study, no significant relationship was found between the subjects' educational stage and happiness. In the study conducted by Blake et al. in 2007, neither of unwanted pregnancies and educational stages were significantly relevant to the happiness (24). As well, the effects of housing status and occupation on the happiness were not significant. The result of Blake et al. in 2007 is in consistent with the current study (24). However, in the studies conducted by Golmakani et al. in 2002,

Hashemi et al. in 2005, and Jayasvasti et al. in 2005, a significant correlation was found between occupation and happiness (6, 20, 22). The level of income was not assessed in the aforementioned studies; nevertheless, the present study revealed a significant relationship between the happiness and income status.

This study revealed a significant inverse relationship between happiness and FOC. The study performed by Golmakani et al. in 2012 examined the relationship between happiness and labor pain coping behaviors which demonstrated that the higher levels of happiness in pregnancy leads to more desirable labor pain and coping behaviors(20).

Delavar Magham et al. conducted a study in 2014 to evaluate the effect of positive and negative emotions on FOC in nulliparous pregnant women and determined an indirect significant relationship between FOC and positive emotions like happiness and a direct significant relationship between FOC and negative emotions like fear. In the other words, as the positive emotions increase, the FOC would decrease and vice versa (25). The probable dominancy of either positive or negative feelings can affect the other one (26). In fact, the more cheerful people are constantly experiencing more positive emotions and less negative ones (27).

It could be concluded that depression, anxiety, and fear are strongly associated with negative affection athwart the positive affection which has sustainably negative correlation with mood and symptoms of depression, anxiety, and fear (28). Given that people with type A personality have lower levels of contentment, Nasiri et al. in a study assessed the relationship between FOC and personality type and demonstrated that people with type A personality have more FOC (29, 30). It could be explained by high levels of hormones secreted during fear and tension such as catecholamines, cortisol, epinephrine, and beta-endorphin in the

depressed and stressful individuals (31).

It is worth to mention that the high levels of contentment during the pregnancy period reduce the depression and anxiety levels, and greater pain is related to the emotional stresses (32). The study conducted by Tang et al. in 2008 demonstrated that inducing sadness caused more pain and less tolerance in patients with chronic low back pain. The cheerful women have more ability to manage the pain due to their high self-confidence and -control which is consistent with the obtained results in the present study (9).

According to the results of the current study, those women with high levels of contentment were more likely to choose the vaginal delivery as their selected mode of delivery ( $P < 0.001$ ). In the Mohammadi Tabar et al. study in 2012, the FOC was one of the most important causes of choosing caesarean section (33). Moreover, Mohammad Pour Asl et al. in 2009 determined the fear of labor pain as the other reason of willingness to the cesarean delivery (34). Prediction of pain and maternal distress during labor is responsible for the FOC, in addition to the subjective elements (35). Presumably, the happier women with the ability of managing with fear can more overcome the FOC. Golmakani et al. in 2012 conducted a study on the nulliparous pregnant women at the gestational age of 36 to 40 weeks and demonstrated that more cheerful women had better pain coping behaviors during vaginal delivery in comparison to those with lower levels of contentment (20).

## Conclusion

This study determined that higher levels of happiness are in association with less FOC and more cheerful pregnant women were more tended to choose the vaginal delivery as their method of childbirth. As a result, the necessary measures should be taken to improve happiness in pregnant women and training courses might be implemented on vaginal delivery and its process to reduce women's fear of this natural form of delivery. Further studies are recommended to evaluate the correlation between maternal mental distresses such as depression with the FOC.

In this study, inter-individual variability, psychological, mental, and even environmental

status of the participants were effective on their answers to the questionnaire and controlling of these problems was out of the researcher's ability. In such cases, it is necessary to consider the correctness of the research unit.

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## Conflicts of Interest

Authors declared no conflicts of interest.

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