The Relationship between Perception of Time, Fear, Expected Anxiety and Hope in Pregnant Women and their Partners

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Abstract: *The aim of the present study was to investigate the relationship between perception of time and expected anxiety as well as perception of time and fear and hope in pregnant women and their partners. The population was all pregnant women and their partners who had visited a gynecologist in the city of Karaj, in Iran at 2015-2016. From this population, 120 participants (60 couples) were selected through convenient sampling. The instruments were Expected Anxiety Inventory of Tavakoli and Safarinia (2012), Performance Failure Appraisal Inventory (PFAI) by Conroy et al (2002) and Snyder Hope Scale (1998). The data was analyzed through Pearson correlation coefficient and bivariate linear regression analysis. The results indicated that there was a significant negative correlation between perception of time and expected anxiety and a significant positive relationship between perception of time and fear in pregnant women and their partners, with 99% confidence in both results. Moreover, there was no significant relationship between perception of time and hope in the participants. The results of the regression analysis for the relationship between perception of time and expected anxiety showed that generally, perception of time can alone predicts 21/4 % of expected anxiety in the participants. The results for the relationship between perception of time and fear indicated that perception of time can alone predict 40/1% of fear. In addition, in neither of these two relationships, hope can be significantly predicted by perception of time in pregnant women and their partners.*

Keywords: *Perception of Time, Expected Anxiety, Fear, Hope, Pregnant Women.*

Introduction

From the beginning of pregnancy to childbirth, many biological, sociological and psychological changes happen simultaneously in a woman's body. How she copes with these changes can expose her and her partner to psychological problems (Figueiredo & Conde, 2011). However, the way people respond to similar situations and their interpretation differ from each other (Duncan & Baradacke, 2010). On one hand, perception of time as in the format of adjustment process can facilitate predicting events and on the other hand, can manage and design future behaviors. Although, the process of perception of time has important role in human behavior as a guiding force, people are generally not aware of such process in their cognitive structure. In spite of the pervasive presence of time in the empirical world, perception of time is considered a special feeling. Not being tangible, not having any special organ to feel, and not corresponding to physical time, perception of time can be moderated by many factors such as, attention, memory, motivation and other emotional states (Ekhtiari et all, 2003). Fear, stress and anxiety have negative consequences for pregnancy and deliver; in chronic anxiety by stimulating automatic nervous system, the smooth muscles of the arteries contract, uterine-placental blood circulation decreases, less oxygen is carried to the uterus, the fetus heart beat becomes abnormal and ultimately the possibility of preterm delivery increases (Condon, 2011). Usually anxiety happens when a person cannot predict the

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consequences of a happening or simply can't control it. A little amount of anxiety is natural and usually useful; it provides the necessary motivation to do tasks properly and provides better focus on doing activities. What is not desirable is mere indifference or severe anxiety that does not allow to act and perform appropriately (Rezaee, 2006). These two extreme states affect the life of pregnant women and their partners. Life expectancy means longevity in a specific society which is determined by the pattern of mortality in that society. (Demko, 2003)

This study aims at finding out the relationship between perception of time and expected anxiety, as well as perception of time and fear and hope in pregnant women and their partners. Perception of time is an adjustment function which can predict and show proper response to imminent and future happenings. Perception of time is considered a complicated cognitive ability that involves different parts of brain such as new cerebellum, basal ganglia, cerebral cortex. (Kasini and Ivory, 1999). Although the process of perceiving time has role in human behavior as a guiding force, we generally are not aware of such processing in our own cognitive structure. The ability to perceive time and retrieve it is so basic and fundamental and a very complicated cognitive skill that allows us to feel a series of happenings and events and predict some future happenings as well (Taplak, et al, 2003).

Anxiety
Anxiety is a natural feeling in human being and is experienced by everyone in specific periods of life. Some experience it when they face with problems at work, some experience it before giving exams or before making serious decisions. Yet, those who are suffering from anxiety disorders have illogical fear and severe anxiety about routine happenings and events of daily life. These feelings impede routine life, can't be controlled easily and will last for a long time (Smith, 2016). Anxiety can appear in childhood and last until adulthood (Carolin et al, 2016). Giving birth is a stressful event during women's life and often accompanies with anxiety. Anxiety about congenital disorders, pain of delivery and maternity responsibilities are all considered the sources of anxiety for mothers before giving birth (Alizade, 2008). Thinking about the responsibilities and the heavy duties of maternity, paradoxical feelings of eagerness and happiness from one hand and anxiety and frustration from the other hand all create instability in a woman. A relatively large number of women are afraid of pregnancy and delivery. They are in constant panic and fear since they imagine they will have a very difficult and unnatural delivery or they think of their baby's death after being born due to defect or other serious problems. Moreover, a women's mood would change due to her intense love to the specific sex of the fetus, the family's and society's culture about pregnancy and the sex of the fetus, her lack of interest in becoming pregnant and having baby (bazrafshan & Mahmoodirad, 2010).

The anxiety during pregnancy can bring serious consequences such as preterm delivery, giving birth to low birth weight babies, fetal distress and other birth defects. Also, the women's anxiety would affect her so that she may have bad feelings about delivery and childbirth, unnecessary fears about childbirth or becoming mother or it would lead to self-curing with alcohol or limiting activities. Women who are stressed and have severe anxiety during pregnancy would be more likely to have low birth weight babies who often suffer from irregular feeding, colic and hard stomachaches, sleepless nights, continuous crying, and ultimately serious need to be held and carried (Bazrafshan & Mahmoodirad, 2010).

Fear
Fear is an emotional response to a possible threat that we want to avoid or escape from. In the context of fear, people act against their belief and assume this is the way to overcome fear; therefore, avoiding cognitive and emotional behaviors will change them and lead to escaping from experiencing the threatening situation (Mousavi and Taghavi, 1386). Fear of failure is the foundation and root of avoidance and not achieving the goals eventually, which can remove anxiety but would lead to weak performance or losing interest and ultimately makes one give up his goals and dreams (Elliot & McGregor, 2001). Meanwhile, hope which is a feature of life and is considered a reason to live can make us quest for better future (Bahadorijehad Yegane, 2006, as cited in Naderi and Hosseini, 2010). Hope is considered a cognitive series that is based on a sense of achievement stemming from various sources (purposeful decisions) and route (plan to achieve the objectives). Hope is made of two components: 1)

source of thinking and 2) pathway thinking. Pathway thinking reflects one's capability to produce cognitive channels in order to achieve objectives and source thinking includes what we think of our abilities and capabilities to be able to take the path in order to achieve our objectives. By blending sources and pathways we can achieve our goals and if each of these two cognitive components does not exist in one person, achieving goals would become impossible (Naderi and Hosseini, 2010).

There is much scientific evidence that proves a high positive relationship between hope and achievements in athletic competitions and education as well as physical and mental health (Issazadegan, , Mikaili Mani and Marwa Milan, 2014). On the other hand, many empirical researches have shown that perception of time (Meck, 1983), and expected anxiety (Estoura, translated by Dadsetan, 2006), are in relation to fear and anxiety; therefore, it is expected that fear, expected anxiety, and perception of time be in relation to each other as well (Sunitha & Muhammedunni, 2013). Some recent researches conducted in Iran are as follows:

- Fartoosi et al (2017) carried out a study under the title '*A Comparison between the Accuracy of Perception of Time in Children with ADHD and Normal Children in Ahvaz City'*. For analysis of the data, they made use of multivariate analysis of variances (MANOVA). The results indicated that there is no significant difference between these two groups in reproduction of time for short and long term intervals. However, it was revealed that there is a significant difference between these two groups in coefficient of variation in reproduction of time for long term intervals which is higher for children with ADHD. Also, it was proved that there is no significant difference in the coefficient of variation of short term intervals. They concluded that there is a significant relationship between perception of time, fear and anxiety.
- Another study conducted by Moghadamsaman (2015) with the title: *The Effectiveness of Training Positive Thinking Skills on Depression and hope in Divorced Women on Welfare in Tehran*, aimed at finding the effectiveness of training positive thinking skills on depression and hope in divorced women who are on Welfare in Tehran. Based on the research hypothesis, 30 divorced women were selected through invitation of volunteers. The instruments were Beck Depression Inventory and Snyder Hope Scale with the results indicative of the fact that training positive thinking skills on divorced women can reduce their depression and increase their hope. Moreover, the same result was achieved in the follow up studies.

Based on what was said earlier, the aim of the present study is to find out the relationship between perception of time, fear, expected anxiety and hope in pregnant women and their husbands. Therefore, the research questions are:

1. Is there any significant relationship between perception of time, expected anxiety, fear and hope in pregnant women and their partners?
2. Can expected anxiety, fear and hope be predicted by perception of time in pregnant women and their partners?

Methodology

The present study is of descriptive-correlative type. The population included all pregnant women and their partners who had been visited a gynecologist in Karaj city, at 2015-16. For determining the sample size, considering that the population was limited and both pregnant women and their partners had to answer the questionnaires and scales, therefore, based on convenient sampling, 120 participants (60 couples) were selected. The instruments for gathering data were Expected Anxiety Scale of Tavakoli and Safarnia (2012), Performance Failure Appraisal Inventory (PFAI) by Conroy et al (2002) and Snyder Hope Scale (1998).

Expected Anxiety Scale of Tavakoli and Safarnia (2012)

This scale consisted of 20 items with the aim of measuring the expected anxiety of people in different dimensions (cognitive, physiological, emotional, and behavioral). The scoring of the items is done based on 3-point Likert scale of often (2), sometimes (1), and never (0). This scale consisted of four subscales of cognitive (items 2, 9, 12, 16, 17) physiological (items 1, 4, 5, 6, 14) emotional (items 3, 11, 15, 18,

20) and behavioral (items 7, 8, 10, 13, 19). The reliability of the scale was calculated in a study conducted by Zare et al (2013) using three methods of Cronbach alpha, split half and test-retest with the results of 0.83, 0.84, 0.82 respectively; all three are acceptable. Also, the results of a study using concurrent validity of this scale with The State Trait Anxiety Inventory of Spielberger (r = .65), personality type A (r = .78), psychosis (r = .23) psychoneurosis (r = .43) indicated the positive significant relationship and negative significant relationship with extroversion (Safarinia, 2012).

Performance Failure Appraisal Inventory (PFAI) by Conroy et al (2002)
This inventory was designed by Conroy et al, based on cognitive-motivational-relational theory of Lazarus (1991) which is generally in consistency with other multidimensional scales of measuring fear of failure. The Items of the questionnaire consisted of (a) experiencing shame and embarrassment, (b) devaluing one's self-esteem, (c) having an uncertain future, (d) important others losing interest, and (e) upsetting important others. Confirmatory factor analysis showed the correctness of the five factors. The scoring of the items ranged from -2 (strongly disagree) to + 2 (strongly agree) based on 5-point Likert scale. Through assuring the validity of the inventory, Sidridis and Kaftison (2008) reported unacceptable internal consistency in the two categories of experiencing shame and embarrassment and important others losing interest on high school and college students in Greece. Sager and Joit (2010) examined the features of the inventory's validity on British samples aged from 16 to 27 and concluded that it is a suitable instrument for measuring fear of failure in Britain. Due to cultural differences around the world and because no questionnaire had been designed for measuring fear of failure in Iran, the aims of this study was to see if PFAI as a suitable instrument for American society is a proper psychometric tool in Iran.

Snyder Hope Scale
This 12 item scale designed by Snyder for respondents above age 11 and consisted of two sub scales of 1) pathway and 2) agency. It only takes a few minutes to complete (1 or 2 minute) it. Each continuous item ranged from definitely false (1) to definitely true (3). Items 3, 1, 9, 11 are fillers and are not scored. Items 1, 2, 0, 3 measure pathway thinking and item, 0, 2, 12, 11 measure agency thinking. The total score of hope is calculated by these two sub scales; hence, the scores can be any number between 2 to 32. According to a study conducted by Golzari (1320) on 100 female students in Tehran, the reliability of Snyder hope scale was calculated through Cronbach alpha internal consistency analysis and yielded 20.1 coefficients. This scale and other scales which measure similar psychological traits have clinical correlation. For describing the data by descriptive statistics, frequency, frequency percentage, mean and standard deviation were used. For analysis of the data through inferential statistics, Pearson correlation coefficient, the significant test of Pearson correlation coefficient and bivariate linear regression were used.

Results
In this section, primarily the results of descriptive statistics are presented and then in order to answer the research questions, the statistical tests of inferential statistics are presented. Table 1 shows the frequency and frequency percentage of participants' ages as well as the mean and the standard deviation of the research variables included perception of time, expected anxiety and hope.

Table (1): The age grouping of the participants

Age	Frequency	Percentage
Less than 25 years old	22	18.3
26 to 30	37	30.8
31 to 35	38	31.7
Above 36	18	15
Unanswered	5	4.2
Total	120	100

Based on the data in table 1, 22 participants (18.3%) were below 25 years of age, 37 participants (30.8%) aged from 26 to 30, 38 participants (31.7%) aged from 31 to 35 and 18 participants (15%) were above 36 years of age.

Table 2 indicates the mean, standard deviation, skewness and kurtosis and Cronbach alpha coefficient for each of the variables of the study.

Table (2): Mean, standard deviation, skewness and kurtosis, and Cronbach alpha coefficient for perception of time, expected anxiety and hope

variable	Mean	standard deviation	Skewness	kurtosis	Cronbach alpha coefficient
expected anxiety	19.80	6.48	-0.351	0.327	0.727
fear	-6.03	19.65	0.417	-0.789	0.892
hope	40.79	5.43	-0.384	-0.246	0.714
perception of time	-0.197	0.137	0.9210	0.579	-

Besides mean and standard deviation, table 2 depicts Cronbach alpha coefficient which are all above 0.7 indicating that all instruments in this study have internal consistency. The above table shows that indexes of skewness and kurtosis are not below -2 or above +2 for each variable. Therefore, the data is normally distributed for each variable. Table 3 shows the correlation coefficient for perception of time, expected anxiety and hope.

The analysis of the data for research questions

1. Is there any significant relationship between perception of time, fear and hope in pregnant women and their partners?

Table (3): Correlation coefficient for perception of time and expected anxiety in pregnant women and their partners

variables	number	correlation coefficient (r)	level of significance
perception of time and expected anxiety	120	-0.463[**]	0.001
perception of time and fear	120	0.633**	0.001
perception of time and hope	120	-0.049	0.82

[*]P <0.05 and [**]P <0.001

According to table 3, perception of time is negatively correlated with expected anxiety (r=-0.463, p<0.001) and positively correlated with fear (r=0.633, p<0.001) at the level of significance. In other words, there is negative and indirect correlation between perception of time and expected anxiety, but a direct correlation between perception of time and fear. Moreover, there is no significant correlation between perception of time and hope in the participants at the level of significance.

2. Can expected anxiety, fear and hope be predicted based on perception of time in pregnant women and their partners?

For analysis of the data in this section, bivariate linear regression was used. For this analysis, perception of time was the predictor and the other variables included expected anxiety and hope were criterion variables. Table 4 shows the power of perception of time on predicting expected anxiety and hope in pregnant women and their partners through bivariate linear regression.

Table (4): Bivariate linear regression in testing the power of perception of time on predicting expected anxiety and hope in pregnant women and their partners

	b	SE	B	t	level of Significance
Criterion variance: expected anxiety	-21.540	3.796	-0.463	-5.674	0.001
R^2=0/214 and adjR^2=0/208			F(1,118)=32.193، P<0.001		
Criterion Variance: fear	90.829	10.220	0.633	8.887	0.001
R^2=0.401 and adjR^2=0.396			F(1,118)=78.983، P<0.001		
Criterion Variance: hope	-1.927	3.645	-0.049	-0.049	0.598
R^2=0.002 and adjR^2= 0.001			F(1,118)=0.279، P>0.05		

According to the above table, based on the predictor (perception of time), the value R^2 for expected anxiety and fear in pregnant women and their partners were 0.214 and 0.401 respectively. This indicates

that perception of time can alone predict 21.4 % of the expected anxiety and 40/1 of fear in the participants with the significance level of 0.01. The results for expected anxiety was (F (1,118) = 32.193, p<0.01) and for fear was (F (1, 118) = 78.938, P<0.01). The analysis of the regression coefficient of perception of time with expected anxiety and fear revealed that this relationship for expected anxiety is negative، -0/463(β p< 0.01) and for fear is positive (،0/633(β= p< 0/01) with the significance level of 0.01. These findings for expected anxiety and fear showed that by adding one standard deviation on the scores of perception of time, expected anxiety would decrease 0.463 of standard deviation and fear would increase 0.633 of standard deviation. In addition, perception of time did not predict hope in pregnant women and their partners: (F (1, 118) = 0.279, P> 0.05).

Discussion and Conclusion
The aim of the present study was to investigate the relationship between perception of time and expected anxiety as well perception of time and fear and hope in pregnant women and their partners. For the first research question, the data analysis showed that there was a negative correlation between perception of time and expected anxiety and a significant positive relationship between perception of time and fear in pregnant women and their partners with 99% confidence. But, there was no relationship between perception of time and hope in the participants. The results of this study are in line with other studies such as the ones conducted by Zare and Imanifar (2013), Angrili et al (1997) and Peni and Itlingam (2008). Moreover, the positive relationship between perception of time and expected anxiety is proved in the studies which are carried out by Hajloo et al (2011), Gill (2009), Tiplz (2008). From this finding we can conclude that perception of time is affected by painful experiences. People who had experienced extremely anxious situations (such as threatening situations) often report inaccurate judgments of time. This show that time can both move slowly and happen at once. In the researches done by Zare and Imanifar (2013), and Ekhtiari, Janati and Parhizgar (2004), a positive relationship is proved between perception of time and fear in pregnant women and their partners. The reason can be the fact that perception of time is an adjustment function and provides proper response to imminent and future happenings. Also, this kind of perception is considered a complicated cognitive ability that involves different parts of brain such as new cerebellum, basal ganglia and Cerebral cortex. Hence, a pregnant woman regarding which stage of pregnancy she is in can have stress and fear by perceiving this time. According to the results, we can conclude that perception of time is a subsidiary of consciousness and consciousness is distinguishing oneself from the tangible world. Additionally, Identity is related to the continuity of perception of time and the way people experience and interpret their past, present and future. Thus, when this continuity is weakened, the sense of awareness about oneself and one's identity is decreased. Our viewpoint toward future affects our perception of time. In fact, the vague and dark future destructs the identity.

The second research question was that if expected anxiety, fear and hope can be predicted based on perception of time in pregnant women and their partners. The statistical results showed that by putting perception of time in prediction equation of expected anxiety in the participants, R^2 value reaches to 0.214. This means that perception of time can predict 21.4 of the variance expected anxiety and 40.1 of the variance fear with the significant level of 0.01 in pregnant women and their partners. The analysis of regression coefficient in relation to perception of time and expected anxiety indicated that with increasing of one standard deviation on the scores of perception of time, the 0.463 standard deviation of expected anxiety would decrease. The reason as what was said earlier could be the ability of perception of time in predicting and showing proper response to imminent and future events; obviously it can predict expected anxiety in pregnant women and their partners. It is because thinking of, perceiving and predicting future comes with stress and anxiety. Moreover, regression coefficient in relation to perception of time and fear indicated that with increasing of one standard deviation on the scores of perception of time, the 0.633 standard deviation of fear would increase. The reason can be that hope emphasizes on cognition that is made of purposeful thinking. This conclusion is in line with other studies conducted by Zare and Imani far (2013), Hashemi (2010), Janati and Parhizgar (2004), Nazari et al (2013). However, perception of time could not predict hope in pregnant women and their partners. This is also in line with studies conducted by Zare and Imanifar (2013), Hashemi (2010), Nazari et al (2013), Angrili et al (1997) and Penni and Itlingam (2008). The reason is that hope emphasizes on cognition

that are made of purposeful thinking. The limitation of the study was lack of interest and motivation of the participants to answer the questionnaires which was occasionally seen among them. It is suggested to create helpful entertainments proper to the ages of pregnant women and motivate them to do different activities. Regarding the relationship between perception of time and other factors, some functional suggestions are presented in a way to avoid perceiving time: using fun and medical environments, creating useful entertainments appropriate for the ages of pregnant women, motivating pregnant and lactating women to engage themselves in different activities, holding psychology and psychoanalysis classes for helping them to overcome stress and anxiety created by the anticipation and also creating environments full of hope and energy and finally creating medical environments with warm colors instead of cool colors that create stress and anxiety.

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