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The Role of Cognitive Belief, Fusion and Distortion in Predicting the General Health of Couples

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ABSTRACT

Introduction: General health comprised features that act as a shield in the face of stressful life situations and help couples have better performance in these situations. The present study was conducted to determine the role of cognitive belief, fusion and distortion in predicting the general health of couples.

Methods: Descriptive research method was used in this study. Population of the study included all couples in the city of Ardabil in 2016. Three hundred and eighty individuals (190 couples) were selected from parks and other public places through available sampling and the use of Krejcie and Morgan table. Data were analyzed using Pearson correlation coefficient and linear regression analysis.

Results: The results of this study showed a significant relationship between meta-cognitive beliefs ($r = 0.47$, $p < 0.05$), cognitive fusion ($r = 0.33$, $p < 0.05$) and cognitive distortion ($r = 0.28$, $p < 0.05$) with general health. Beta coefficients for predictor variables indicated that metacognitive belief ($\beta = 0.34$), cognitive fusion ($\beta = 0.28$) and cognitive distortion ($\beta = 0.21$) can predict the general health of couples ($p < 0.05$).

Conclusion: From the results, it can be concluded that couples with higher levels of meta-cognitive beliefs, cognitive fusion and cognitive distortion had lower general health.

Keywords: Metacognitive Belief, Cognitive Fusion, Cognitive Distortions, Health, Family Characteristics.

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Introduction

General health is associated with improved interpersonal communication and better performance of a person in all aspects of life and can be affected by the quality of marital life, either in a positive or negative way [1]. General health is defined as the state of physical, mental and social wellbeing [2]

. If couples enjoy favorable mental and social health, family members will in turn have better social performance [3]. The results of studies in developing countries including Iran show that men enjoy higher mental health levels in comparison to women [4]. The prevalence of mental disorders in Europe varied between 11 to 23% over time [5]. The results of a study conducted by Ahmadvand et al in Iran showed that the prevalence of mental disorders among men and women is 29% [6]. According to the World Health Organization (WHO), family as a basic social factor, plays an important role in enhancing the health of family members. Studies have shown that couples with low health levels, face more marital conflicts compared to others with high health levels [7]. In addition, the results of a study conducted by Bakhshayesh et al on Iranian couples showed that there is a significant positive relationship between the general health of couples and their satisfaction with life [8].

One of the factors which can affect the general health of couples is metacognitive belief. Metacognition forms our thoughts and how it is being translated to our state of consciousness; evaluations and the impact of various strategies that we employ to adjust our thoughts and feelings [9]. Metacognitive beliefs are among the factors affecting the mental health of individuals. Individuals with high levels of metacognitive belief do not enjoy a good mental health [10]. The results of a study conducted by Ashoori et al on Iranian couples showed that there is a significant positive relationship between meta-cognitive beliefs and general health [11]. The results of Samdifard's study on a sample of couples showed that there is a significant positive relationship between meta-cognitive beliefs and life expectancy among Iranian couples [12]. Studies on several samples of individuals showed that meta-cognitive beliefs are among the effective factors in the incidence of anxiety and depression [13]. In addition, the results of a study on Iranian women showed that meta-cognitive beliefs affect marital satisfaction of women [14].

The other variable is cognitive fusion which entails a cognitive and social concept which confuses the individual and after a while he thinks it's the correct interpretation of his personal experiences. This can therefore lead to the individual's inability to distinguish his thoughts from real life experiences [15]. Cognitive fusion happens when a person is caught in his thoughts. It is a relatively new variable in psychology; hence, few studies have been conducted on this concept [16]. The results from another study on Iranian couples showed that meta-cognitive fusion is one of the factors that affect life expectancy in couples [12]. Also the results from a study conducted by Akbari et al on different samples of Iranian men and women showed that there is a significant relationship between meta-cognitive fusion and anxiety [17].

Another variable that can affect the health of couples is cognitive distortion. This refers to cognitive mistakes and orientations, i.e. the way people evaluate mental situations and stresses including how their various perspectives, beliefs and attitudes can increase their vulnerability to emotional disorders [18]. Cognitive distortions are defined as wrong arguments which play an important role in the development of many psychiatric disorders; hence, most times, we tend to think that we are victims of our surrounding and our external events result in distress, depression and interpersonal problems leaving us with the thought that the only way to get rid of these neuroses is by fixing and changing these events. Cognitive therapists believe that wrong interpretation of external events result in negative emotions. These wrong interpretations known as "cognitive distortions or errors" come to our minds automatically [19]. The results of a study conducted

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by Belir et al on infertile women showed that there is a significant relationship between cognitive distortions and the quality of life in infertile women [20]. In addition, the results of a study conducted by Rahmani et al on Iranian couples showed that there is a significant relationship between cognitive distortions and marital boredom [21].

Based on the literature, it can be inferred that metacognition is a general factor which affects vulnerability to mental disorders. Despite numerous studies conducted on the role of metacognition in creating mental disorders, only few have investigated the relationship between metacognition and health components [13, 14]. In addition, as earlier mentioned, cognitive fusion is a variable which affects people's quality of life [12]. Furthermore, it seems that cognitive distortion plays a key role in psychological parameters such as depression and disturbed interpersonal relationships. Hence, proper and real understanding is an important factor for the awareness of positive aspects of life [22]. Lack of proper planning for early prevention of marital problems creates major challenges for communities. Considering the importance of the subject and mentioned issues, it seems necessary to examine these variables in predicting the general health of couples. The aim of this study is to determine the relationship between cognitive belief, fusion, distortion and the general health of couples.

Methods

The research method used in this study was the descriptive method. The statistical population of the study included all couples (probable estimation: 30000 people) in Ardabil in 2016. Considering the limitations of the researcher including the wide range of statistical society and the lack of access to the list, only the available sampling method was used to select the sample. The sample size was obtained as 380 individuals (190 couples) using Krejcie and Morgan Table [23]. To select the statistical sample and to implement the research after obtaining the necessary permissions, we referred to the key locations of Ardabil (parks, restaurants, cultural centers and other public places where couples were present) and satisfied couples who were willing to participate in the study. The age range of participants was 24 to 46 years. The inclusion criteria included: residence in Ardabil, married for at least 6 months, age range of 20 to 50 years, lack of known chronic diseases (diabetes, heart and kidney diseases) and willingness to participate in the study. Couples who did not have the above-mentioned criteria were excluded from the study.

Research tools

Short form of metacognitive belief scale

This scale was designed by Wells and Cartwright-Hatton. It has 30 items and is used for measuring people's metacognitive beliefs [9]. This scale has five subscales which includes uncontrollability and danger (18-15-14-11-9-7-6-4-1), positive beliefs on anxiety (29-27-23-20-10), self-awareness (28-24-16-13-12-5-3), cognitive confidence (30-26-8-2) and the need to control thoughts (25-21-19-17) and subscale scores are added to obtain the total score. This scale is scored in a four-point range, from I don't agree to I completely agree and the range of the score is between 30 and 120. In the Iranian version of the scale, Cronbach's alpha was used to determine its internal consistency and Cronbach's alpha was 0.91 for the total scale and 0.6 to 0.83 for subscale [24]. Also, in this study, the reliability of the scale – calculated using Cronbach's alpha was 0.89. It should be noted that in this study, the total score of metacognitive belief is used to analyze the data.

Cognitive fusion scale

This scale was designed to measure people's cognitive fusion and it has seven questions in seven-point Likert scale (from it is never correct to it is always correct) [15]. The range of the score is between 7 and 49. In this study, the Cronbach's alpha coefficient of this scale was reported as 0.91 and its retest reliability -within five weeks- was 0.86. The correlation coefficient between this scale and the Commitment and acceptance scale and the Southampton mindfulness Scale were 0.72 and 0.70, respectively [17]. In this study, the reliability of the scale –calculated using Cronbach's alpha was 0.83.

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Cognitive distortion scale

This scale has 19 items and it is scored in a 5-point Likert scale (from 1: I strongly disagree to 5: I strongly agree). It has three subscales: rejection in interpersonal relationships, unrealistic expectations in relationships and misperception (misunderstanding) in interpersonal relationships [25]. Scores are ranged between 19 and 95. Psychometric studies have reported a high psychometric quality for this scale. The reliability calculated using Cronbach's alpha -internal consistency- alongside the retest reliability of the scale -within two weeks- are 0.67 and 0.77 for the total scale, 0.73 and 0.77 for subscale of rejection in interpersonal relationships, 0.66 and 0.76 for unrealistic expectations in relationships and 0.43 and 0.74 for misperception in interpersonal relationships. The correlation coefficient between this scale and the three scales of irrational beliefs, automatic thoughts and tendency to interpersonal conflicts were 0.45, 0.53 and 0.53, respectively which were statistically significant at the significance level of $p < 0.01$ [21]. Furthermore, in this study, the total score of cognitive distortion was used and the reliability of the scale –calculated using Cronbach's alpha- was 0.81.

General health scale

This scale was designed by Goldberg to measure the general health of people in different environments [26]. Many researchers believe that general health scale is the most well-known screening tool used so far in the world of psychology, which has had a significant impact on the progress of studies in this area. It has 28 items and it is scored in a 4-point Likert scale (0, 1, 2, 3). It also has one total score and four subscales: 1. somatic symptoms (items 1-7), 2- anxiety and insomnia (items 14-8), 3- social dysfunction (items 15-21) and 4-depression (items 22-28). The range of the score is between 0 and 84 and higher scores indicate lower levels of mental health. Its reliability and validity have been confirmed in several studies. The reliability coefficient of this scale was 0.91 In Iran. Also, the correlation coefficient between this scale and the difficulties of life scale was 0.58 [8]. In this study, the total score of general health was used and the reliability of the scale –calculated by using Cronbach's alpha- was 0.87.

Frequency, mean and standard deviation in the descriptive statistics section, and Pearson correlation and linear regression test (taken by SPSS version 23 at significant level of $p = 0.05$) in the inferential statistics section were used to analyze the data. As for ethical aspects of the study, the couples were assured that their privacy would be protected and their confidentiality would be maintained throughout the study.

Results

According to Table 1, the total number of participants was 380 persons; 190 male (50%) and 190 female (50%). One hundred and twenty subjects (31.6%) were within the age range of 23-33 years, 174 subjects (45.7%) were within the age range of 34-44 years and 86 subjects (22.7 %) were within the age range of 45-55 years. Also, in terms of educational level, 84 subjects (22.1%) were under diploma, 106 subjects (27.9%) had diplomas, 148 subjects (38.9%) had bachelor degrees and 42 subjects (11.1%) had master degrees or higher levels of education.

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Table 1. Relative and absolute frequency distribution of demographic variables in the samples

Characteristics	Indicator	Frequency	Percent
Age	23-33	120	31.6
	34-44	174	45.7
	45-55	86	22.7
	Total	380	100
Education	Under diploma	84	22.1
	Diploma	106	27.9
	Bachelor degree	148	38.9
	Master or higher degree	42	11.1
	Total	380	100

Table 2 shows information on the mean and standard deviation of variables of metacognitive belief, cognitive fusion, cognitive distortion and general health of couples.

Table 2. The mean and standard deviation of metacognitive belief, cognitive fusion, cognitive distortion and general health of couples

Variable	Mean	Standard deviation
Metacognitive belief	88.84	17.19
Cognitive fusion	26.32	5.17
Cognitive distortion	48.73	8.68
General health	49.89	10.13

Pearson correlation coefficient test was used to determine the relationship between predictor variables (cognitive belief, cognitive fusion and cognitive distortion) and the dependent variable (general health). From the results, it can be deduced that there are significant positive correlations between variables of metacognitive belief ($r = 0.47$, $p < 0.05$), cognitive fusion ($r = 0.33$, $p < 0.05$) and cognitive distortion ($r = 0.28$, $p < 0.05$) and the variable of general health of couples.

Table 3. Correlation matrix of metacognitive belief, cognitive fusion, cognitive distortions and general health

	Variable	1	2	3	4
1	Metacognitive belief	1			
2	Cognitive fusion	0.21	1		
3	Cognitive distortion	0.19	0.23	1	
4	General health	0.47	0.33	0.28	1

In the last step, linear regression test was used to predict the general health of couples on the basis of metacognitive belief, cognitive distortion and cognitive fusion. Before performing the regression analysis test, the assumptions above analysis showed that the scores had a multiple normality state; variables had linear relationships and there was no multicollinearity.

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Table 4. Results of linear regression to predict general health of couples

Variable	B	STE	β	T	Sig	R	R^2	Adjusted R
Metacognitive belief	0.30	0.05	0.34	5.46	0.001			
Cognitive fusion	0.26	0.07	0.28	3.36	0.001	0.49	0.45	0.43
Cognitive distortion	0.17	0.05	0.21	2.99	0.001			

Dependent variables: General health

According to the results of Table 4, by using linear regression (R^2 = 0.45), the general health of couples is explained by predictor variables (metacognitive belief, cognitive fusion and cognitive distortion). According to the beta coefficients, metacognitive belief (β = 0.34), cognitive fusion (β = 0.28) and cognitive distortion (β = 0.21) predict the general health of couples.

Discussion

The first part of the results showed that there is a significant positive correlation between metacognitive belief and general health of couples. According to the scoring system of general health scale, earning higher scores indicates lower levels of mental health. The results of this study showed that the general health of people with high metacognitive beliefs is undesirable. This implies that, by increasing one's total score of metacognitive beliefs, the total score of general health will also increase. The increase in the health score indicates undesirable mental and general health conditions. However, according to Wells' metacognitive model, metacognitions play an important role in selecting and continuing ineffective coping strategies and in fact using ineffective coping strategies result in the formation and continuation of mental disorders [9]. Consequently, due to the activation of components of metacognitive belief, people will experience emotional stress. When people with high scores in metacognitive belief experience emotional stress, they will resort to maladaptive coping strategies and as a result of using these strategies, the concepts of threat will be more accessible including the intensification of negative stress and emotions. In fact, following these processes, people will overestimate external threats and will underestimate their coping capabilities and this will result in the continuation of mental disorders [27]. The findings of this study are in agreement with the findings of other studies [11, 12, 13, 14]. Results of Ashoori et al study showed that an increase in negative beliefs reduces overall health [11]. The results of Samdifard study on a sample of couples also showed that there is a significant relationship between meta-cognitive beliefs and life expectancy among Iranian couples. Couples with higher meta-cognitive beliefs tend to enjoy lower life expectancy compared to other couples [12]. Results of Salarifar et al study showed that people with higher negative metacognitive belief are more susceptible to depression. This implies that couples with higher levels of metacognitive belief are more likely to suffer from mental disorders such as depression [13]. On the other hand, negative beliefs also reduce marital satisfaction. Couples with high levels of metacognitive beliefs do not enjoy a desirable marital satisfaction. Generally, it can be said that metacognitive beliefs are associated with the continuation of psychological trauma, by affecting selection of coping strategies and perception of one's abilities. Therefore, as a result of this metacognitive belief, people will have less personal control over their feelings and this increases their anxiety and depression levels. Furthermore, as a result of negative metacognitive belief, people will be more doubtful about their abilities and competencies and this will affect their general health, negatively [14].

Another part of the results showed that there is a significant correlation between cognitive fusion and the general health of couples. Couples with higher scores of cognitive fusion did not enjoy a desirable general health. Conversely, couples with low levels of cognitive fusion, enjoyed high levels of general health. To play their social, psychological and physical roles and still maintain their general health, couples must be able to

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interpret, analyze and evaluate various issues and this would be impossible without possessing cognitive skills [12]. On the other hand, according to Gillanders, cognitive fusion is the most powerful predictor of anxiety syndrome. People with higher levels of cognitive fusion are more likely to develop anxiety [15]. In cognitive fusion, the person is so impressed by his thoughts that they seem completely real; hence, his experience and behavior will dominate his sources of behavioral regulation and he will be less sensitive to direct results [16]. The results of this study which are in agreement with other studies [12, 15] have shown that cognitive fusion is an important factor affecting the quality of life of people and most especially their general health. Findings of other studies have also shown that cognitive fusion is an effective factor in the incidence of mental disorders such as anxiety. Couples with higher levels of cognitive fusion are more likely to suffer from anxiety [17] and based on the results of this study, it can be concluded that they will not enjoy a desirable general health.

Another variable in this study is cognitive distortion. Results showed that there is a significant relationship between cognitive distortion and the general health of couples. The results of this study are in agreement with other studies [20, 21] and they revealed the importance of cognitive distortions in the general health of couples including the emergence of marital boredom. Couples, who reported higher levels of cognitive distortion, did not enjoy a desirable general health. Conversely, couples with low levels of cognitive distortion enjoyed greater general health. Cognitive distortion can play a key role in psychological parameters such as aggression, agitation, depression and disturbed interpersonal relationships. Thus, a true and real understanding is required by married couples to identify positive aspects of life. Based on its theories and models, the structure of cognitive distortion is composed of various factors and components. These components may be related to internal and personality factors or to social conditions and cultural grounds [26]. Desirable general health and life satisfaction improve the performance of couples. Couples who are able to express their feelings are less likely to become anxious and upset and they will have a better perception of themselves. These people enjoy a good level of psychological well-being and show better social adaptability which is one of the most fundamental factors in the area of personality development. To explain this result, we can therefore say that families' stability and their health depend on good communication skills, compatibility and creating peace and cognitive distortions must be reduced on the basis of mutual needs. Several studies have shown that mental health can increase marital satisfaction, prosperity, wealth, success, love and happiness among couples [21]. On the other hand, cognitive distortions are among the factors that affect the quality of life in infertile women. Women with high cognitive distortions don't enjoy a satisfactory quality of life [20].

The results of the present study indicated a significant relationship between the variables of the study. In other words, a significant positive relationship was observed between metacognitive beliefs and cognitive fusion ($r = 0.21$, $p < 0.05$). The relationship between metacognitive beliefs and cognitive distortions ($r = 0.19$, $p < 0.05$) and between cognitive fusion and cognitive distortions ($r = 0.23$, $p < 0.05$) was also positively significant.

The final results showed that cognitive belief, fusion and distortions, generally account for 0.45 of the general health predictions. This result is consistent with the findings of other studies [12, 21]. In a study titled "prediction of couples life expectancy based on meta-cognitive beliefs and cognitive fusion" Samadifard showed that meta-cognitive beliefs and cognitive fusion can significantly predict the life expectancy of couples by 0.63 [12]. On the other hand, the results of a study conducted by Rahmani et al showed that cognitive distortions account for 0.32 of marital boredom prediction ability [21]. However, the results of the study conducted by Salarifar et al on a variety of couple samples showed that metacognitive beliefs account for 0.40 and 0.50 of anxiety and depression prediction, respectively [13].

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Conclusion

In general, it can be concluded from the results of this research that couples with higher levels of meta-cognitive beliefs, cognitive fusion and cognitive distortions have lower general health compared to others.

Using convenience sampling method and restriction of study population to couples living in the city of Ardabil are two limitations in this study. It is suggested to use random sampling method in other studies and to conduct similar studies in other cities to generalize the results more confidently. Considering the role of family health in the mental health of the society and the essential role of husband and wife in this regard, it seems that the health of couples is one of the major factors in the stability and cohesion of the family and marital life. It is suggested that trainings should be organized to overcome inappropriate cognitive (cognitive belief, fusion and distortion) strategies for all couples in counseling centers, workshops before and after marriage and also for couples who have general health problems in order to improve their general health.

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Contribution

Study design: HRS, MN.

Data collection and analysis: MN, HRS.

Manuscript preparation: HRS, MN.

Conflict of Interest

"The authors declare that they have no competing interests."

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