



## **The role of perceived social support and emotional regulation styles in predicting psychological well-being in people with diabetes**

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### **The role of perceived social support and emotional regulation styles in predicting psychological well-being in people with diabetes**

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#### **Abstract**

Diabetes is one of the most common and chronic diseases. According to this point, the purpose of this study was to predict psychological well-being based on perceived social support and emotional regulation styles in people with diabetes. The population consisted of all diabetic patients referred to health centers of Research Institute of Endocrine Sciences, Red Crescent Therapy of Tehran Pars, Taban Clinic in West Township. The statistical sample was estimated to be 210 by the Green formula. Samples were from Tehran patients, which were selected through selective and targeted sampling; the research tool was RSPWB-SF psychological well-being questionnaire, Garnowski's Cognitive Emotion Regulation (2001), and Social Assistant of Wax et al (SS-A). Statistical method: Structural equation modeling was used to analyze the data. The results showed that the fit of the model was confirmed with  $\chi^2/df = 2/24$ , TLI / NNFI= 0/92, CFI= 0/93, IFI = 0/93, GFI = 0/86, and NFI = 0/89. It was also shown that the family support variables ( $t = 13/06$ ,  $r = 0/56$ ) and friends support ( $t = 12/12$ ,  $r = 0/44$ ) can assess psychological well-being with  $p < 0.05$ . Among the emotional adjustment styles, rumination variables ( $T = -12 / 42$ ,  $r = -0 / 46$ ), blame for others ( $T = -15 / 15$ ,  $r = -0 / 65$ ) and positive evaluation ( $T = 13 / 46$ ,  $r = 0 / 58$ ) can assess psychological well-being with  $p < 0.05$ . The rumination variables ( $T = -8 / 38$ ,  $r = -0 / 31$ ), catastrophic ( $T = -9 / 98$ ,  $r = -0 / 38$ ), blame others ( $T = -14 / 25$ ,  $r = -0/62$ ) and positive evaluation ( $T = 12/97$ ,  $r = 0/55$ ) can evaluate friends support with  $p < 0.05$ . In this regard, rumination variables ( $r = -9/42$ ,  $r = -0/35$ ), disaster ( $T = -10 / 35$ ,  $r = -0 / 4$ ), blame others ( $T = -9 / 64$ ,  $r = -0 / 35$ ), positive re-focus ( $T = 12 / 26$ ,  $r = 0/5$ ) and positive evaluation ( $T = 10/05$ ,  $r = 0/39$ ) can also evaluate family support with  $p < 0.05$ . As a result, the structural model of prediction of psychological well-being can be evaluated based on the role of interfaces of perceived social support by emotional adjustment styles in people with diabetes



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**Key words:** psychological well-being, social support, emotional regulation styles, diabetes, structural modeling



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### **Introduction**

Diabetes is one of the most common and chronic diseases, and diabetes is a group of metabolic diseases characterized by high blood glucose levels due to varying degrees of insulin resistance or insulin secretion. Type 1 and type 2 of diabetes are the two main forms of the disease, and Type 2 of diabetes accounts 85% to 90% of the cases approximately (American Diabetes Association, 2011). Diabetes disrupts the regular flow of life and can have important psychological consequences (Khoshniyat et al., 2013).

Over the past two decades, the results of studies have shown that the main goal of the treatment is not only to eliminate the signs and symptoms of the disease, but also to improve the overall psychological well-being and mental health of patients (Hosseinzadeh-Firouzabad & et al, 2016). Today psychologists do not have enough illness to feel healthy, but they believe that having a sense of life satisfaction, good progress, effective interaction with the world, the energy and positive mood of the relationship and the desired relationship with the community and the positive development, are the characteristics of a healthy person's life which has psychological well-being (Caradas, 2007). The dimensions of psychological well-being include self-acceptance, positive relationship with others, autonomy, purposeful life, personal growth, and environmental domination (Eldeleklioglu et al., 2010).

Today, scholars reject the simplicity of individuality of the limb to justify physical symptoms and emphasize the interaction between psychological states and biological and social variables, that one of these psychological variables is the emotional order. Gross (1999) argues that the difference between the tendency to emotional response and the behavior that eventually comes from us, shows that we constantly adjust our emotional responses. This setting may be done automatically or voluntarily, and is alert or obscure (Gross & Thompson, 2007). Adjustment of emotion through cognition helps a person to manage or adjust his emotions or feelings when he faces stressful or threatening events (Garnefski, Kraaij & Spinhoven, 2000).

Every intense excitement is made up of several generic components. These components are, respectively, the internal sense of emotion, the emotional response, the individual's physical response, the recollection of the appearance of the thoughts and beliefs associated with that excitement, the facial expression, the individual's response to it, the practical orientation associated with that excitement (Atkinson et al., 2006). Many of the emotional adjustment



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processes are common to humans, but it seems that each person tends to use certain patterns. These patterns are referred to as emotion regulation strategies and to the cognitive domain of emotional cognitive regulation strategies (Salehi et al., 2011). Type 1 and type 2 of diabetes are quite sensitive to stress and negative emotions such as fear and anger, and the experience of negative emotions such as anger, frustration, fear, guilt, shame, disbelief and depression in people with diabetes is very common (Taylor, 2012).

On the other hand, many psycho-social factors can effect on the psychological well-being of individuals. One of these factors is, perceived social support. Social support as one of the emotional-response coping mechanisms has a potential impact on the quality of life (Ersoy-Kart & Guldo, 2005). Social support is the level of affection, attention and assistance of family members and friends and other people that they have (Cobb, 1976). But the patient's perception and attitude toward received support is more important than the support provided to him (Helgeston & Cohen, 2004). Researchers' findings have shown that social understanding can prevent adverse physiological complications in a person, increase the level of self-care and self-confidence, and have a positive impact on the physical, psychological and social status of the individual and clearly increase One's performance (Yu et al., 2004; Chan et al., 2004). Social support is essential for the survival of community members, especially psychological well-being (Asgari and Sharaf al-Din, 2010).

The results of the research showed that the mean scores in the psychological well-being and its components in the mothers of mentally retarded students in the experimental group who underwent emotion regulation training increased in the post-test phase compared to the control group (Moradi-Kia et al, 2016). The results of the research showed that the two-variable relationship between subjective well-being and social support, spiritual well-being and self-efficacy are positive and significant. In total, 85% of the variance of mental well-being of the elderly is predicted through family and friends' support, religious welfare, existential well-being and self-efficacy (Farhadi et al., 2015). The results of the research showed that the difficulties of emotional regulation and personality traits can significantly predict psychological well-being (Dehghani Nesar, 2014). The results of the research showed that emotional regulation training is effective in improving emotional regulation and blood glucose control in patients with type 2 of diabetic (Ghyasvand & Ghorbani, 2014).



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Findings showed that perceived social support, psychological hardiness and communication pattern of dialogue were positive and significant relationship with quality of life in patients with type 2 of diabetes and the correlation pattern was negative and significant relationship with the quality of life of patients with type 2 of diabetes (Suri and Ashoori, 2014). The results of the research showed that social support had a direct effect on psychological well-being and depression, and social support indirectly and through self-esteem and the need for communication and the need for competence, led to increased psychological well-being and reduced depression (Moradi and Cheraghi, 2014). Researchers aimed at investigating the effectiveness of dialectical behavioral therapy on emotion regulation and perceived social support in coronary heart disease patients. The results showed that the mean of cognitive emotion regulation in the experimental group was lower than that of the control group after intervention (Babaei et al. 2014).

The results of the research showed that psychological capital variables, social capital, psychological hardiness and spiritual intelligence have a positive and significant correlation with psychological well-being (Shakarami et al., 2013). Research findings concluded that the relationship between anxiety, emotional anger and anger and rumination with defense styles is not a simple linear relationship, but other variables such as cognitive emotion regulation strategies have a mediator role (Besharat et al., 2013). According to research results, people with high self-efficacy, psychological hardiness and perceived social support have high psychological well-being (Najd et al., 2012). Research findings showed that perceived social support in the dimension of friends and family is the best predictor of quality of life in patients with non-insulin dependent diabetes (Share et al., 2011). Findings of research showed that, firstly, different aspects of perceived social support are better predictors of life satisfaction and emotional balance in girls than boys. Secondly, psychological and social well-being in girls is more predicted by social support from the family and in boys is more predicted by social support through friends. Thirdly, perceived social support from a particular person and from individuals in the faculty has no effect on the various dimensions of well-being of a person (Ghaedi and Yaghoobi, 2008).

The results of the research showed that fear of hypoglycemia was significantly associated with quality of life related diabetes and psychological well-being (Ragnhild et al., 2016). Research results show that psychological well-being can be influenced by professional social support.



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This influence will be influenced more by time (Kollberg et al., 2016). Research results showed that women seeking abortion had less social protection and self-efficacy perception than non-applicant women. Also, social eligibility and mental health of women seeking abortion are lower than non-eligible women (Zarean et al., 2016). The results of the research showed that there is a positive and significant relationship between perceived parenting and emotional regulation with psychological well-being (Aka & Gencoz, 2014). Research results showed that fear of low blood glucose has a negative and significant relationship with psychological well-being (Hendrieckx et al., 2014). The results of the research indicate that diabetes management in Indonesia can improve with the support of patients, and in Japan, self-efficacy training plays an important role in managing diabetes (Puji Lestari et al., 2009).

Knowing that diabetes management is complex and factors other than self-care can have a negative effect on disease control, obviously, determining the psychosocial factors affecting psychological well-being will be important in the treatment of patients, increasing self-care, preventing the complications of their disease. Regarding the above, a model based on perceived social support and emotional regulation styles in predicting the psychological well-being of people with diabetes seems to be necessary.

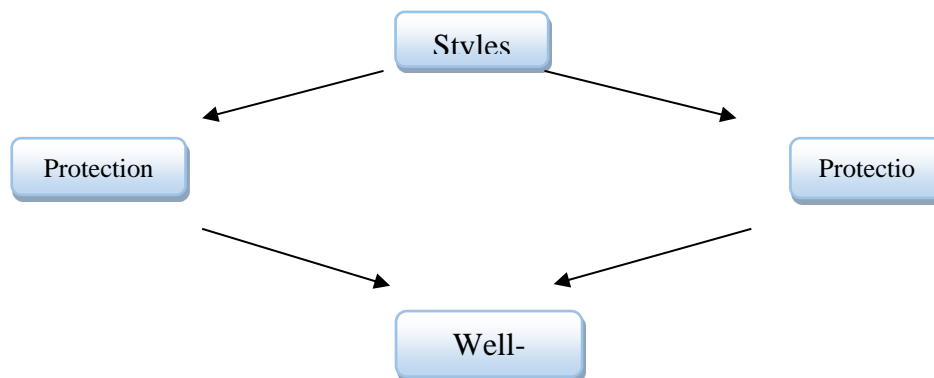


Figure 1) the proposed model of the structural relationship between psychological well-being of people with diabetes based on perceived social support and emotional regulation styles

In this research, the following hypotheses were tested:

The main hypothesis:

Psychological well-being of people with diabetes is perceived based on a model designed with perceived social support and their emotional adjustment styles are predictable.

Hypotheses:



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1. There is a relationship between perceived social support and the psychological well-being of people with diabetes.
2. There is a relationship between the emotional adjustment styles and the psychological well-being of people with diabetes.
3. There is a relationship between the emotional adjustment styles with perceived social support for people with diabetes.

### **Materials and Methods**

This research is a kind of correlation research in which alien modeling methods are used. Regarding the limitations of statistical methods of correlation and regression analysis, in this research, causal relations are tested through structural equations modeling. We deal with modeling structural equations with conceptual models which the researcher has based on reviewing the research background. In this definition, a conceptual model represents a network of relations between two or more variables that they are presented in the form of a shape and then can be converted into quantitative models with mathematical and statistical symbols. The statistical population included all diabetic patients in the clinics of specialist doctors in Tehran. To estimate the sample size, we used the Green formula  $n > 8k + 50$ . So, considering the fall, the sample size was considered to be 210 people. For sampling, available and targeted sampling method was used. Samples were selected among diabetic patients present at Tehran health centers in March, 2016. Firstly, they were referred to the treatment centers and the research project was explained to them, then the centers willing to cooperate were selected for sampling (Research Institute of Endocrine Sciences, Red Crescent Therapy of Tehran Pars, Taban Clinic in West Township). Of the diabetic patients referred to the centers, who were between 30 and 60 years old with a minimum degree of education without severe psychiatric problems, 210 samples were selected based on the sample size estimation using Green's formula as a statistical sample. Qualified samples were selected by expressing the goal and obtaining informed consent from them.

According to demographic data, most of the subjects as 85 person were women (40.7%), while 55 person were male (26%) and the others were not responding. In terms of age, most subjects as 87 person aged between 60 and 70 (42%), while only 19 person were over 70 years old (8%). In terms of marital status, the majority of subjects as 146 person were married (69.3%), while





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only 4 person were remarried (2%) and 7 person were divorced or single (3.3%). In terms of education, the majority of subjects as 60 person had the fifth grade of primary school (28.7%), while only 4 person had a master's or doctorate degree (2%). In terms of jobs, the majority of subjects as 124 person were unemployed (59.3%), while 38 person were employed (18%). For the duration of the disease, most subjects as 61 person had 5 to 10 years of diabetes (29.3%), while only 24 person had more than 20 years of illness (11.3%).

A questionnaire was used to collect data. The Cognitive Emotion Regulation Questionnaire (CERQ) was used to study the emotional regulation styles. The Cognitive Emotion Regulation Questionnaire was developed by Garnefski et al. (2001). The questionnaire is a multidimensional questionnaire and a self-report tool with 36 items and has a special form for adults and children. The cognitive-emotional regulation scale evaluates nine strategies, including self-denial, acceptance, rumination, positive re-focus, re-focus on planning, positive reappraisal, perceptiveness, disaster and others' health. In this questionnaire, an individual is asked to identify his reaction to threatening experiences and recent stressed life events by answering 5 questions that assess the strategy for controlling and regulating excitement. The scoring questionnaire is based on the Likert scale. In the validity and reliability of this questionnaire, the alpha coefficient for subscales of this questionnaire was reported by Garnefski et al. (2002) in the range of 0.71 to 0.81. The Persian form of this scale has been validated by Samani and Jokar (2007). To assess the convergent and divergent validity of this questionnaire in Iran used from the scales of depression, anxiety, and stress.

The Psychological Well-being Scale (RSPWB-SF) was used to assess psychological well-being. This scale was designed by Ryff (1989) and revised in 2002. The short form of the questionnaire has 120 questions from the original form. This version consists of six factors: independence, environmental mastery, personal growth, positive affiliation with others, goal-oriented life, and self-acceptance. High score in this test indicates high psychological well-being and low score indicates low psychological well-being. Ryff and Singer (2006) correlated this test with an 84-point scale of this questionnaire from 0.70 to 0.89. In Iran, Khanjani et al. (2014) obtained the internal consistency of this questionnaire by using Cronbach's alpha for their components of admission, environmental domination, positive relationship with others, having a goal in life, personal growth and independence 0.51, 0.76, 0.75, 0.53, 0.73 and 0.72





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respectively. Khanjani et al. (2014), by using the factor analysis of this questionnaire, showed that the questionnaire has a good fit.

The multidimensional scale of Social Perceptual Support (MSPSS) is one of the many scales that assess social support. This questionnaire was developed by Zemen et al. in 1988 to measure perceived social support from the family, friends, and individuals of the person's life. This scale has 12 items and answers specifies his opinion on a 7-point scale from a score of one to completely disagree to seven completely agree. Bruwer et al. (2008) reported the internal reliability of this tool in a sample of 788 high school students by using Cronbach's Alpha, 0.90 to 0.86 for the subscales of this tool, and 0.86 for the entire instrument. Salimi et al. mentioned that the Cronbach's Alpha coefficient had 89%, 86% and 82% respectively in three dimensions of social support received by the family, friends and important people of life. Subsequently, the subscales of this questionnaire are shared with its constituent items. In this research, the validity of the perceived social support questionnaire by Cronbach's alpha (0.9) is in the acceptable range (more than 0.5), and in the sub-level, the validity of the subscales is also: family (0.79), friends (0.82), and important individuals (0.86), which is an acceptable level of credibility.

Then, all three questionnaires were submitted to the subjects and asked them to answer their personal questionnaire as much as possible. After completing the questionnaires, in order to analyze the statistical data, statistical methods such as calculating the mean, Standard deviation and abundance and to evaluate the fit of the model, Structural Equation Modeling was used through LISREL 8/8 software.

**FINDINGS**

The research data analysis includes descriptive information and research hypotheses testing. In the first part, descriptive information such as mean, standard deviation and abundance was used, and structural modeling of the model was examined using the LISREL 8/8 software to verify the fit of the model.

Descriptive analysis of data:

Table 1. Descriptive statistics table of research variables

| variable | kurtosis | skewness | Standard deviation | mode | median | Average |
|----------|----------|----------|--------------------|------|--------|---------|
|----------|----------|----------|--------------------|------|--------|---------|



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|                               |                                   |       |       |      |    |    |       |
|-------------------------------|-----------------------------------|-------|-------|------|----|----|-------|
| Negative emotional regulation | Blame yourself                    | 0.48  | 0.07  | 2.33 | 11 | 9  | 9.35  |
|                               | Blame others                      | -0.7  | -0.18 | 3.12 | 11 | 9  | 9.39  |
|                               | Rumination                        | 0.06  | 0.4   | 3.44 | 17 | 17 | 17.02 |
|                               | Catastrophic                      | 0.03  | -0.5  | 3.59 | 13 | 15 | 14.72 |
|                               | Acceptance                        | -0.6  | 0.4   | 3.81 | 12 | 12 | 12.72 |
|                               | Total                             | 1.17  | -0.81 | 9.98 | 61 | 63 | 63.38 |
| Positive emotional setting    | Positive focus                    | -0.35 | 0.4   | 6.32 | 29 | 31 | 31.62 |
|                               | Positive evaluation               | -0.1  | 0.26  | 3.71 | 15 | 15 | 15.75 |
|                               | Total                             | 0.3   | 0.46  | 8.42 | 44 | 45 | 47.37 |
| social support                | Family support                    | 0.79  | 0.55  | 3.67 | 23 | 25 | 26.13 |
|                               | Friend support                    | 0.76  | -0.42 | 3.75 | 20 | 20 | 19.29 |
|                               | others Support                    | -0.45 | 0.3   | 3.18 | 24 | 24 | 21.24 |
|                               | Total                             | 0.9   | 0.12  | 8.37 | 71 | 70 | 66.66 |
| Psychological well-being      | Independence                      | 0.24  | -0.42 | 2.94 | 13 | 13 | 12.18 |
|                               | Dominate the environment          | 0.16  | -0.1  | 2.68 | 13 | 12 | 12.55 |
|                               | Personal growth                   | -1.1  | 0.7   | 2.41 | 8  | 10 | 11.27 |
|                               | Positive relationship with others | -0.3  | 0.2   | 2.58 | 8  | 9  | 9.38  |
|                               | Purposefulness in life            | 0.32  | 0.16  | 3.38 | 8  | 9  | 10.54 |
|                               | acceptance yourself               | 0.64  | 0.06  | 2.72 | 8  | 8  | 8.14  |
|                               | Total                             | -0.57 | -0.09 | 5.68 | 61 | 61 | 64.06 |

According to the above table, in all of the research variables, the mode, median and Average values, are close to each other, which indicates that the scores are normal, as well as the kurtosis and skewness values between (2-) and (2+) Confirm this.

Table 2. The Kolmogorov-Smirnov Normality Test Table

| variable | meaningful | Degrees of freedom | Description | variable | meaningful | Degrees of freedom | Description |
|----------|------------|--------------------|-------------|----------|------------|--------------------|-------------|
|----------|------------|--------------------|-------------|----------|------------|--------------------|-------------|



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|                                   |       |     |       |                               |       |     |       |
|-----------------------------------|-------|-----|-------|-------------------------------|-------|-----|-------|
| Family support                    | 0.17  | 210 | 0.15  | Blame yourself                | 0.161 | 210 | 0.131 |
| Friend support                    | 0.172 | 210 | 0.121 | Blame others                  | 0.127 | 210 | 0.1   |
| others Support                    | 0.193 | 210 | 0.105 | Rumination                    | 0.158 | 210 | 0.128 |
| Social support                    | 0.198 | 210 | 0.108 | Catastrophic                  | 0.2   | 210 | 0.093 |
| Independence                      | 0.11  | 210 | 0.188 | Acceptance                    | 0.2   | 210 | 0.097 |
| Dominate the environment          | 0.1   | 210 | 0.191 | Negative emotional regulation | 0.19  | 210 | 0.108 |
| Personal growth                   | 0.127 | 210 | 0.155 | Positive focus                | 0.163 | 210 | 0.126 |
| Positive relationship with others | 0.08  | 210 | 0.198 | Positive evaluation           | 0.2   | 210 | 0.05  |
| Purposefulness in life            | 0.132 | 210 | 0.161 | Positive emotional setting    | 0.15  | 210 | 0.111 |
| Acceptance yourself               | 0.15  | 210 | 0.136 |                               |       |     |       |
| Psychological well-being          | 0.2   | 210 | 0.064 |                               |       |     |       |

Regarding what is shown in the table above, the significance level of all variables is greater than 0.05, so the resulting scores are normal.

In the inferential statistics, according to the research hypotheses, the relations between variables are measured using the SEM method (structural equations).

Inferential analysis of data:

Table 3. Fitness matrix table for research model



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| Indicator            | Fitness   | Indicator value |
|----------------------|-----------|-----------------|
| X <sup>2</sup>       | good      | 5909.72         |
| RMSEA <sup>1</sup>   | -         | 0.065           |
| (df)                 | good      | 2165            |
| (X <sup>2</sup> /df) | excellent | 2.73            |
| (GFI) <sup>2</sup>   | medium    | 0.82            |
| (AGFI) <sup>3</sup>  | good      | 0.86            |
| (NFI) <sup>4</sup>   | excellent | 0.91            |
| <sup>5</sup> (NNFI)  | excellent | 0.94            |
| (CFI) <sup>6</sup>   | good      | 0.9             |
| <sup>7</sup> (IFI)   | excellent | 0.92            |

As shown in the table above, the good fit of the model is shown and only fitness in two good fitness indicators was medium.

Table 4. Relationship between the variables based on the model

|                          | result  | value               | Standard    | result  | value   | Standard    | result  | value    | Standard    |
|--------------------------|---------|---------------------|-------------|---------|---------|-------------|---------|----------|-------------|
|                          |         | T                   | coefficient |         | T       | coefficient |         | T        | coefficient |
| Rumination               | confirm | -12.4**             | -0.51       | confirm | -8.38** | -0.31       | confirm | -10.43** | -0.35       |
| Catastrophic             | reject  | -1.19               | -0.19       | confirm | -9.98** | -0.38       | confirm | -11.11** | -0.40       |
| the reception            | reject  | -0.35               | -0.034      | reject  | 0.66    | 0.11        | reject  | -0.55    | -0.08       |
| Blame yourself           | reject  | -0.54               | -0.05       | reject  | 1.15    | 0.3         | reject  | 0.82     | -0.17       |
| Blame others             | confirm | 15.16 <sup>5*</sup> | -0.65       | confirm | 14.25** | -0.62       | confirm | -8.66**  | -0.35       |
| Re-focus positive        | reject  | -1.65               | 0.24        | reject  | 1.55    | 0.27        | confirm | 13.38**  | 0.53        |
| Positive evaluation      | confirm | 14.56**             | 0.58        | confirm | 12.91** | 0.52        | confirm | 10.25**  | 0.35        |
| Psychological well-being | -       | -                   | -           | confirm | 13.15** | 0.44        | confirm | 12.16**  | 0.56        |

<sup>1</sup> Root Mean Square Error of Approximation

<sup>2</sup> Goodness of fit index

<sup>3</sup> Adjusted Goodness of Fit Index

<sup>4</sup> Normed Fit Index

<sup>5</sup> Non-Normed Fit Index

<sup>6</sup> Comparative Fit Index



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As can be deduced from the table above confirmatory path analysis has been approved with respect to standard coefficients and meaningful numbers and shows that the existing relationships based on the extracted theories and the data collected from the sample are at a significant level of 0.05.

Main hypothesis: The psychological well-being of people with diabetes is predictable based on a model designed with perceived social support and their emotional adjustment styles.

Based on Table 3, the ratio  $\chi^2$  to df is 2.73 and the root mean square error (RMSEA) is 0.065. Therefore, the model has the necessary fit. Also, the TLI / NNFI = 94/0, CFI = 9/0, IFI = 92/0, GFI = 0.82 and NFI = 0.91 confirmed the fitting of the model.

Accordingly, according to the results of Table 4, family support in the relationship between rumination variables and blame others and positive evaluation of emotion regulation styles can be estimated with the value of T (-10.43, -8.66, and 10.25) with psychological well-being of affected people which has a mediator role in diabetes.

Friends support in the relationship between rumination variables and blame others and positive evaluation of emotion regulation styles can be estimated with the value of T (-8.38, -14.26, and 12.91) with psychological well-being of affected people which has a mediator role in diabetes.

Sub-hypothesis 1: There is a relationship between perceived social support and the psychological well-being of people with diabetes.

According to Table 4, family support variables (T = 16.12, r = 0.56) and social support (T = 13.15, r = 0.44) can assess psychological well-being with  $p < 0.05$ . In other words, two variables of family support and social support have a positive relationship with psychological well-being.

Second Sub-Hypothesis: There is a relationship between the emotional adjustment styles and the psychological well-being of people with diabetes.

According to Table 4, rumination variables (T = -12.4, r = -0.51), blame others (T = -15.15, r = -0.65) and positive evaluation (T = 14.56, r = 0.58) can assess psychological well-being with  $p < 0.05$ . In other words, two variables as rumination and blame others with psychological well-being are inversely related, but positive evaluation has a positive relationship with psychological well-being.

Third sub-hypothesis: There is a relationship between the emotional adjustment styles and the perceived social support of people with diabetes.



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According to Table 4, rumination variables ( $T = 8.38$ ,  $r = -0.31$ ), Catastrophic ( $T = -9.98$ ,  $r = -0.38$ ), blame others ( $T = -14 / 25$ ,  $r = -0.62$ ) and positive evaluation ( $T = 12.91$ ,  $r = 0.52$ ) can evaluate social support perceived by friends with  $p < 0.05$ . In other words, the three rumination variables, Catastrophic, blame others with friends support have a meaningful reverse relationship, but positive evaluation has a significant positive correlation with friends' support. Also, rumination variables ( $T = -10.43$ ,  $r = -0.35$ ), catastrophic ( $T = -11.11$ ,  $r = -0.4$ ), blame others ( $T = -8.66$ ,  $r = -0.35$ ), positive re-focus ( $T = 13.38$ ,  $r = 0.53$ ) and positive evaluation ( $T = 10.25$ ,  $r = 0.35$ ) can evaluate perceived social support by the family  $p < 0/05$ . In other words, rumination, catastrophic, blame others with family support have a significant negative relationship, but positive re-focus and positive evaluation variables has positive relationship with family support.

### **Discussion and conclusion**

The purpose of this study was to predict psychological well-being based on perceived social support and emotional regulation styles in people with diabetes. The results of the main hypothesis showed that the psychological well-being of people with diabetes is predictable based on a model with their perceived social support and emotional adjustment styles, while social support has a mediating role between emotional adjustment and psychological well-being.

In explaining these results, it can be said that diabetes may affect physical activity, mental status, interpersonal, familial, and social communication, which can negatively impact on general health and psychological well-being of patients. Now, among the psychological variables, social support as a source of adaptation has a very effective and important role in the outcomes of the function and psychological adjustment of people with chronic illness. This sense of support reduces experienced tensions and improves life styles, through the role of mediators between stressors in life and physical and psychological problems, as well as enhancing individual cognition, it can play a moderating role in expressing a person's negative emotions. The results of this hypothesis were compared with some researches including Babaei et al. (2014), Zare Shahabadi et al (2010), Asgari and Sharaf al-Din (2010), Dehghani Nesar (2014), Suri & Ashoori (2014), Shakarami et al (2013), Share et al. (2011), Puji Lestari et al. (2009).



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The results of the first sub-hypothesis showed that there is a relationship between perceived social support by family and friends with the psychological well-being of people with diabetes. In other words, two variables of family support and social support have a positive relationship with psychological well-being.

In explaining these results, social support is emotional in terms of belonging, accepting, being interested and getting help in the circumstances, so understanding social support can prevent the adverse physiological side effects of the disease, increase the level of self-care and have a positive impact on the physical, psychological and social status of the individual, This sense affects and reduces the proper control of diabetes in people with diabetes, Social support, in fact, promotes self-care behaviors in patients. The results of this hypothesis were compared with some researches including Hekmatypour et al. (2015), Farhadi et al (2015), Najd et al. (2012), Shabani et al. (2012), Asgari and Sharaf al-Din (2010), Ghaedi and Yaghoobi (2008), Kollberg et al. (2016), Dennison et al. (2009), Caradas (2007), Helgeston & Cohen (2004), Hiroshi et al. (2001).

The results of the second sub hypothesis showed that there is a relationship between the emotional regulation styles (rumination, blame others and positive evaluation) and the psychological well-being of people with diabetes. In other words, two rumination and blame others variables with psychological well-being are inversely related, but positive evaluation has a positive relationship with psychological well-being.

In explaining these results, it can be said that chronic stress, negative emotions and other psychological trauma can increase the risk of developing diabetes more often, In fact, poor blood glucose monitoring is associated with high levels of psychological stress, behavioral problems, and worsening of well-being. In fact, this disease is one of the most common diseases, that psychological factors play an important role in it, because, type 1 and type 2 of diabetes are quite sensitive to stress and negative emotions. This makes it difficult for people with this disease to control their stress and emotional regulation and they endanger their well-being. d Moradi-Kia et al. (2016), Ghyasvand & Ghorbani (2014), Moradi & Cheraghi (2014), Besharat et al. (2013), Isa Zadegan et al. (2012), Salehi et al. (2011), Yousefi et al. (2010). Dennison et al. (2009), Garnefski & Kraaij (2006), Smart Richman et al. (2005), Garnefski, Baan & Kraaij (2005), Matsumoto et al. (2003), Garnefski , Kraaij & Spinhoven (2000).





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The results of the third sub-hypothesis showed that there is a relationship between emotional adjustment styles (rumination, Catastrophic, blaming others, positive evaluation and positive focus) with social support from family, and between emotion setting styles (rumination, catastrophic, blame others and positive evaluation) with social support from friends in people with diabetes. In other words, rumination, catastrophic, blaming others with friends' support have a meaningful reverse relationship, but positive feedback is positively correlated with the support of friends.

In explaining these results, it can be said that emotions can play an important role in dealing with stressful life events and every person in his life will be faced with threatening and stressful events, so how to regulate emotions in these critical situations is essential. Now patients who have negative emotional conditions worsen their condition, in fact, they consider the events of everyday life more disastrous than others, at this time, social support from others who are interested in them is part of the social support of the individual. In other words, this support can reduce the adverse effects of chronic illness and help the patient to better adapt to their illness. The results of this hypothesis were compared with some researches including Shayeghian et al. (2015), Bakhshaei et al. (2005), Housiaux et al. (2010), Dubey et al. (2010), Czernecka & Szymura (2008).

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