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One of the elements of modern time is reliance on scientific thinking. With respect to thought provoking philosophical nature of the present time, Modern psychology has proposed theories in the field of psychological processes based on empirical studies. Hence Journal of Modern Psychology has been launched to provide a space for scholars to publish thoughts and scientific studies in personality, abnormal and social psychology.



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Research Paper: Predicting Social Anxiety in Schoolgirls Based on Parenting Styles and Mothers Cognitive Flexibility




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Abstract

Based on research evidence, parenting styles and cognitive factors in mothers may be effective in shaping and exacerbating children's social anxiety. The aim of the present study is to determine the social anxiety of schoolgirls based on parenting styles and cognitive flexibility of their mothers. For this descriptive study, a correlational design is used. The participants of the study include all students in sixth grade elementary school and their mothers in the city of Khomem in the academic year of 2019-2020. The number of participants is 200 sixth grade elementary school students selected based on convenience sampling. Liebowitz Children and Adolescents Social Anxiety Scale (LSAS-CA), Baumrind Parenting Styles Scale and Cognitive Flexibility Scale (CFS) are employed to collect data. The statistical data are analyzed based on Pearson correlation coefficient and multiple regression analysis. The results of multiple regression analysis reveal that parenting styles and cognitive flexibility predict 64.1% of the variance of students' social anxiety. These findings suggest that parenting styles and cognitive flexibility play a crucial role in the pathology and prevention of students' social anxiety.

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1. Introduction

Anxiety disorders are one of the psychological problems in children and adolescents that have a great impact on their psychological status and social relationships. In 7% (American Psychological Association, 2015) of cases, these disorders including social anxiety disorders (Alkozi, Cooper, Greswell, 2014), have had a 12-month prevalence in children and adolescents. According to DSM-5, social anxiety disorder refers to an overt and persistent fear of social or performance situations in which one can believe that he or she would act in a shameful or humiliating manner in that situation. In social actions or intimidating practices, individuals are concerned about their choices since other people may perceive them as anxious, helpless, confused, and perplexed (Ryngold, Herber & Franklin, 2003).

Mother-child interaction is one of the most important and influential factors in the formation of social anxiety disorder in children. Many studies have demonstrated that mothers of the children with problems, would experience limitations compared to the parents of normal children, and their performance might be more likely to result in anxiety disorders in children (Ganji, 2013). The child's temperament and characteristics affect the quality and quantity of care provided to him/her, and thus the mother's way of repair also affects the child's characteristics and growth as well as abnormal characteristics. Mother-child interactions are the mother-parenting style that even occurs during the mother-child interaction (Khanjani, Peymania & Hashemi, 2016).

One of the factors that can have effect on students' social anxiety is parenting patterns and parenting styles. One of the most important approaches in the field of parenting is proposed by Baumrind (1991). He (ibid) identifies three parenting styles: authoritarian, authoritative, and permissive. Findings of Rezvani shakib, Okati, Asgari, Sadeghi (2018), and Yazdani and Daryayi (2016) demonstrate that choosing the right parenting style reduces the level of social anxiety in children. In addition, Yazdani and Daryayi (2016), Farrokhjasteh and Allahyari (2014) report that children of the powerful parents have high self-confidence and can participate in social situations more easily. Evidence has shown that parenting styles affect children's social anxiety (Chen, Liu, Lu, & Ren, 2020; Salza, Guisti, Asurio, Kazakia, & Roncon, 2020; Alkozi et al, 2014)

Another variable related to children's social anxiety is their mothers' cognitive flexibility. Cognitive flexibility is an ability to adapt to one's thinking and behavior in response to changes in environmental conditions (Dixton, Nelson, & McClure, 2007). This structure has been considered to be a potential mechanism associated with anxiety disorders; the higher the level of cognitive flexibility, the lower the level of anxiety in individuals would be (Fazeli, Ehteshamzadeh & Hashemi, 2015). Social anxiety disorder is perpetuated by cognitive content and style, including the inability to adapt to or to encounter unexpected situations flexibly (Himberg, 2016); additionally, parents' cognitive vulnerabilities act as a potential risk factor for their children's symptoms of anxiety (Riskind, 2017). One study has found that mothers with anxious children would

become more involved in psychological inhibition behavior designed to manipulate the child's emotional state; they would show less maturity in discussing a negative emotional event. (Bromario & Carnes, 2015). In this regard, the findings of Sepahvand (2019), Moghaddampour and Sepahvand (2018) indicate that there is a significant difference between normal children and people with social anxiety in terms of understanding the full complexity of issues and the ability of social skills. Furthermore, Kheirmand Kavari and Behzadipour (2015) find that mothers' cognitive flexibility plays a crucial role in children's social anxiety. Evidence reveals that cognitive factors affect children's social anxiety (Sepahvand et al., 2019).

Accordingly, there is additional evidence about the existence of a relationship between parenting styles and mothers' cognitive flexibility with children's social anxiety. Therefore, since no studies have been carried out on this kind of disorder, the present study is a step towards its better identification. Besides, the correct and timely diagnosis of this disorder to prevent its destructive effects from jeopardizing the psychological, social, individual and family life of individuals, is very important. Therefore, the present study aims to predict children's social anxiety based on parenting styles and mothers' cognitive flexibility.

2. Method

The correlation scheme was used in this research. The participants of the present study included all sixth-grade students at Khomam primary school in the academic year 2019-20 (N = 250). The sample was

200 students selected out of all sixth-grade students of the city of Khomem. According to Morgan's table, 148 participants were considered to be the appropriate number. However, 200 students were selected based on convenience sampling method due to the possibility of deficiencies in completing the questionnaires and increasing the external credibility.

The research tools are as follows:

Liebowitz Social Anxiety Scale for Children and Adolescents: This 24-item scale was developed by Masis-Warner et al., (2003, cited by Hasani, Fayazi & Akbari, 2017). The participants answered the questions of this scale on a four-point Likert scale (from 1 to 4 basis). Cronbach's coefficient values as (0.82 to 0.95) indicated that the internal consistency of the Persian version of this scale and its subscales were satisfactory. The results of the confirmatory factor analysis supported the four-factor structure (anxiety and avoidance of social interactions as well as anxiety and avoidance of social performance) of the questionnaire. Mean and correlation coefficients were calculated between the Persian version scales of Liebowitz (1987) Social Anxiety Questionnaire and Beck Depression Inventory; the results showed that the correlation coefficients between the subscales were significant and high which could be due to the coexistence of these two disorders. Moreover, to evaluate the validity, this scale was correlated with Connor social phobia scale, the correlation coefficient of which between the two scales was 0.60 ($P < 0.01$).

Baumrind Parenting Styles Scale: This 30-items scale was designed and built

by Baumrind (1973). Baumrind introduced the parenting style as the controlling function of parents which is divided into authoritarian, authoritative and permissive styles. On this scale, each item is rated as "strongly disagree, disagree, hesitant, agree, and strongly agree" on a scale of 1 to 5, respectively. Minai and Nikzad, (2017) conducted a study on students' mothers using Cronbach's alpha coefficient and obtained these subscales' values ranging from 0.62 to 0.77. Besides, three factors were obtained through the analysis of exploratory factors which could explain 30.5% of the total variance.

Dennis and Vanderwal Cognitive Flexibility Scale: This was a 20-item scale developed and used by Dennis and Vanderwall (2010). The items of this questionnaire should be scored on a 7-point Likert scale (from 0 to 6). The concurrent validity of this questionnaire with Beck Depression Inventory as well as Martin and Robin flexibility were -0.39 and 0.75, respectively ($p < 0.01$). In addition, the reliability coefficient of Cronbach's alpha method was 0.91. Sharah et al. (as cited in Shareh, Farmani & Soltani, 2014) obtained the validity of the whole scale and the reliability coefficient through the Cronbach method which was equal to 0.71 and 0.90, respectively. Kohandani and Abu al-Ma'ali (2017) reported the homogeneity coefficient of this questionnaire calculated as 0.89. Moreover, the correlation coefficient of this questionnaire with Beck Depression Inventory was obtained as -0.67 ($p < 0.01$).

To collect data, the number of schools and female students studying in the sixth grade of primary school in the academic year of 1998-99 was first calculated in

Khomam region. Then, 10 out of 13 schools in the city of Khomam were selected. The chosen students were primary school girls, a list of whom was prepared with the cooperation of teachers; about 20 students were selected from each class. The questionnaire was sent online to 210 students along with their mothers; also, the necessary explanations were given and the ambiguities that each student had about the questions were resolved. Respondents followed the online questionnaire's link. At first, they filled in the required information and sent back the questionnaires according to the given explanations. A total of 200 students were selected and surveyed according to the available completed questionnaires after removing the heterogeneous scores. For analyzing the data, Pearson correlation coefficient and multiple regression analysis with input method were employed.

3. Results

Descriptive statistics consist of mean and standard deviation related to students' age, mothers' employment status, education and students' birth order. Regarding the mean of the age of students 108 participants (52.7%), were 12 and 92 (44.9%) were 13 years old. The standard deviation and mean of the students' age were 12.42 and 0.78, respectively. Considering education, 52 mothers (25.4%) had lower secondary education or even lower than that and 19 mothers (9.3%) had upper secondary education and 108 mothers (52.7%) had diploma and AA degree and 21 mothers (10.3%) had undergraduate and graduate degrees. 68 mothers (33.2%) were employed and 132 (64.4%) were housewives. 123 participants (60%) were

the first child and 65 participants (31.7%) were the second child and 12 participants (5.9%) were the third child. **Table 1** displays descriptive statistics concerning

Table 1

Descriptive indicators of students' social anxiety and parenting styles and mothers' cognitive flexibility

	Variable	Mean	SD	Min	Max	Skewness	Kurtosis
Social anxiety	Performance anxiety	28.23	10.43	16	49	0.63	-0.26
	Social status anxiety	24.29	9.30	13	43	0.60	-0.30
	Total	52.57	19.50	31	92	0.62	-0.31
Parenting styles	Permissive	23.46	11.88	10	50	10.27	0.33
	Authoritarian	22.64	10.43	11	49	0.50	1.08
	Authoritative	40.98	7.80	16	50	-0.81	0.40
Cognitive flexibility	Perception	50.80	16.23	18	69	-0.65	-0.28
	Controllability	46.05	15.29	17	62	-0.74	-0.28
	Behavior justification	10.03	3.69	2	14	-0.67	-0.13
	Total	106.88	34.71	42	142	-0.70	-0.33

The distribution of scores is normal according to the values of skewness and kurtosis tabulated in **Table 1**, which is less

students' social anxiety variables and parenting styles and mothers' cognitive flexibility.

than $\pm 1\%$.

Table 2 illustrates the correlation matrix of the studied components.

Table 2

The correlation coefficients between the studied variables

	Permissive	Authoritarian	Authoritative	Cognitive flexibility	Social anxiety
Permissive	-				
Authoritarian	-0.40**	-			
Authoritative	-0.38**	-0.44**	-		
Cognitive flexibility	-0.54**	-0.32**	0.80**	-	
Social anxiety	0.24*	-0.59**	-0.67**	-0.66**	-

As shown in **Table 2**, the relationship between all variables were significant at the 0.01 level.

Considering the assumption of error independence (DW = 1.80), the assumption of regression linearity (P = 0.0001, F =

Table 3

117.26) and multiple alignment, the use of parametric statistics was permissible.

Table 3 reveals the results of multiple regression analysis to predict social anxiety based on parenting styles in students.

The results of multiple regression analysis for predicting social anxiety based on parenting styles in students

Predictor variable	B	SE	Beta	T	Sig	Tolerance	VIF
Fixed value	29.83	10.73		2.78	0.006		
Permissive	0.70	0.10	0.426	6.70	0.0001	0.451	2.22
Authoritarian	1.26	0.12	0.671	10.26	0.0001	0.43	2.34
Rational authoritative	-0.54	0.16	-0.217	-3.35	0.0001	0.44	2.28
R= 0.802		R ² = 0.638		F=117.26		P= < 0.01	

Based on Table 3, 63.8% of the social anxiety variance was explained by predictor variables. Therefore, the values of authoritarian parenting styles ($\beta = 0.671$), permissive ($\beta = 0.426$) and rational authoritative ($\beta = 0.217$) could predict changes related to social anxiety ($P < 0.01$).

Considering the assumption of error independence (DW = 1.98), the

Table 4

The results of multiple regression analysis for predicting social anxiety based on cognitive flexibility components in mothers

Predictor variable	B	SE	Beta	T	Sig	Tolerance	VIF
Fixed value	93.58	3.48		26.90	0.0001		
Perception	-0.84	0.28	-0.696	-3.01	0.003	0.05	18.64
Controllability	-0.19	0.27	-0.145	-0.70	0.49	0.07	15.11
Behavior justification	0.99	0.80	0.188	1.24	0.22	0.12	8.06
R= 0.664		R ² =0.433		F= 51.39		P= <0.01	

Based on Table 4, 43.3% of the social anxiety variance was explained by predictor variables. Considering the beta values of the perception component ($\beta = -0.696$), it could predict the changes related to social anxiety ($P < 0.01$). Regarding the assumption of error independence (DW = 2.27), the assumption of linear regression ($P = 0.0001$, $F = 82.08$) and multiple alignment, the use of parametric statistics was permissible.

assumption of regression linearity ($P = 0.0001$, $F = 51.39$) and multiple alignment, the use of parametric statistics was permissible.

The results of multiple regression analysis for predicting social anxiety based on cognitive flexibility components in mothers are presented in Table 4.

4. Discussion

The present study aimed at predicting the social anxiety of schoolgirls based on parenting styles and mothers' cognitive flexibility. The results of multiple regression analysis indicated that authoritarian, permissive and rational authoritative parenting styles could explain 63.8% of the variance of students' social anxiety and authoritarian parenting style had the most effective role in explaining the social anxiety of female students. The

findings of the present study lend support to previous findings in the literature (Rezvani Shakib, 2018; Farrokhjasteh & Allahyari, 2014; Bandelow et al., 2010). The current study does not support previous research in this area. In fact, these findings refute Ghasemipour Kordmahaleh and Bazazian's (2013) results.

Therefore, authoritarian parenting style is characterized by high parental demands and low responses. These parents do not see the need to give reasons for their orders and put emphasis on the unquestioning obedience and respect of their children. Decreased self-esteem, independence and creativity, and delays in moral development are characteristics of children in authoritarian families. Accordingly, the use of these methods in the family would increase social anxiety in students. Baumrind (1971) stated that permissive parents had low expectations of their children and they had no control over them. Permissive style had a characteristic of negligence that included the presentation of small demands for things with very few restrictions on the children. Permissive parents had no control over their children, and these children showed the least level of self-confidence, curiosity, and self-control in each group, with having difficulty in controlling impulse and distinguishing right from wrong. In permissive style, children shirk responsibility and are demanding. In this educational model, children are raised to be lazy, weak-minded and dependent; moreover, the child is emotionally nurtured and because they cannot handle problems, they are prone to social anxiety and negative emotions. Children of authoritative (warm and controlling) parents are loved by their

parents and have many opportunities to make decisions, choices and feel independent because of the support they receive from their parents, since a certain level of trust connects them. The children of these parents have more self-confidence and less social anxiety; they can also participate in social situations more easily. Expectations that commensurate with children's abilities along with a reasonable level of love increases children's perseverance and self-efficacy (Heibati, 2002).

In addition, the results of multiple regression analysis revealed that among the three components of cognitive flexibility, the perception component explained 43.3% of the variance of the students' social anxiety; the perception component had the most crucial role in explaining the social anxiety of female students. This concurs well with Sepahvand (2019) and also confirms other findings (Kheirmand Kavari & Behzadipour, 2018; Moghaddampour, 2018; Rosa-Alcázar et al., 2020).

Based on the relationship between children's social anxiety and mothers' cognitive flexibility, the mothers with low cognitive flexibility had children with high social anxiety. According to the theory of cognitive flexibility, an individual could easily reorganize and use information in response to a variety of situational demands. To gain this cognitive flexibility, individuals should understand the full complexity of problems and frequently examine the problem space to see how changes in variables and goals can change the space (Shareh et al., 2014). Mothers with low cognitive flexibility in stressful situations could not control their thoughts; therefore, the children could suffer from

psychological damage, including social anxiety, by imitating them. These children become anxious in social situations and would have low social skills. However, mothers with high cognitive flexibility in uncomfortable situations teach their children to control emotions and handle the difficult situations with their management skills (Razmi, 2004).

Additionally, the results of multiple regression analysis demonstrated that authoritarian, permissive and cognitive flexibility parenting styles determined 63.4% of the social anxiety variance among female students among which authoritarian parenting style had the most influential role in explaining the social anxiety of female students. This is consistent with Chen, Liu, Luo and Ren (2020), Salza et al. (2020) as well as Alokozai et al. (2014). Accordingly, parenting styles and cognitive flexibility of mothers were predictors of their children's social anxiety. What is important is that given the impact of parenting style on social adjustment, parents need to voluntarily choose the most appropriate parenting style. However, the most appropriate parenting style might be a function of social, cultural, economic and scientific conditions. Now a days, according to the contemporary culture of society and the situation of families, the most appropriate parenting style is the logical authoritative style, which is being decisive and provide reassurance for the children; that is to say, demonstrating genuine love and reassurance with establishing control and not the unconditional love for children. Both authoritarian and permissive styles have a negative effect on nurturing the children, while authoritative style would ensure the

children's success. This can be explained by the fact that the mother's low cognitive and behavioral flexibility and her resorting to strict behavioral controls can possibly affect children's sense of competence and their coping skills which results in increasing their anxiety. Maternal hyperactivity reduces a child's mastery and competence and decreases children's chances of acquiring appropriate developmental skills and perceived competence.

5. Conclusion

According to the results obtained, parenting styles and cognitive flexibility of mothers were the predictors of children's social anxiety. As a result, due to the impact of parenting style on children's social adjustment, parents should choose the most appropriate parenting style according to the contemporary cultural status and family conditions and increase their cognitive flexibility.

One of the main limitations of this study was the impossibility of controlling the intervening variables such as social support and social, economic status, among others. Besides, just one questionnaire was used; the students might overestimate or underestimate their characteristics in answering the questions. Therefore, it is suggested that this issue should be further explored in future research given that the socio-economic status and attitudes of parents play an important role in the development of individuals' psychological characteristics. In addition, the self-report questionnaire and other sources such as interviewing and observing students and considering teachers' reports should be used to obtain information.

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Conflict of interest

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Research Paper: The Role of Psychological Needs and Dark Triad Traits of Personality in Selfie-taking Behavior



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Abstract

The spread of the selfie phenomenon and sending it to virtual social networks can be due to various causes and contexts, including psychological and personality factors. There is limited and conflicting research evidence in this area that requires further research. Therefore, this study aims to investigate the role of psychological needs and dark triad traits of personality in selfie-taking behavior. The present study is a causal-comparative study. A total of 300 students (in the age range of 18 to 30 years) are selected by cluster sampling from the faculties of Guilan University. They responded to a researcher-made selfie checklist, the General Health Questionnaire, the Maslow's Needs Questionnaire, and the dark triad traits Scale. Finally, data from 202 participants (103 female students) are analyzed. The multivariate analysis of variance reveals that the two groups of selfie-taker and non-selfie-taker are significantly different in psychological needs, including safety, belonging, and esteem and personality traits, including narcissism and Machiavellianism. It seems that the needs of unsatisfied safety, belonging, and esteem and the traits of narcissism and Machiavellianism can justify the phenomenon of taking selfies and sending them on virtual social networks.

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1. Introduction

Compared to the past, making use of cyberspace and communication has increased and it is expanding in the last decade, due to the increasing growth of virtual social networks and free membership in them, as well as the facilitation of smart communication devices such the seen increase in the number of advanced mobile phones leading to gradual surge in the number of their users. As of early 2017, about 2.8 billion people in the world were members of at least one of these virtual social networks, while in 2010, only 0.97 billion of the world's population were members of one of these networks. It is also estimated that by 2020, the number of users of these social networks will increase to 2.95 billion (Hutchinson, 2017). These networks have provided more facilitators in increasing the selfie phenomenon for the users. For example, after the first Instagram selfie Hashtag (# selfie) in 2011, the volume of selfies between 2012 and 2013 significantly increased to 17,000%, i.e., about 93 million selfies taken by users' smartphones every day (Kim, Lee, Sung & Choi, 2016). This increase in selfies and postings on virtual social networks led to the introduction of selfies in the Oxford Dictionary as the International Word of the Year in 2013 (Weiser, 2015). According to the definition, a selfie is a photo that a person usually takes with a smartphone or webcam and shares it through virtual social networks (Oxford Dictionaries, 2013). Although American amateur photographer Robert Cornelius took the first selfie in 1839 (Wade, 2014), it can be traced back to the Greek myth of Narcissus, who fell in love with a picture of his face in the water.

Advances in technology, including the rise of virtual social networks, the facilitation of virtual communication devices, easy internet access, free membership in networks, and the increase in the number of smartphones, undoubtedly play a prominent role in increasing selfies and facilitating their sending to virtual social networks. However, it seems that some people are more inclined than others to the phenomenon of taking selfies and sharing them on social networks. Therefore, it can be said that some psychological and personality factors of individuals may affect this phenomenon; also, the phenomenon of taking selfies has a psychological effect on individuals. On the one hand, research in this area suggests the involvement of individual and personality differences, especially narcissism in taking selfies and sending them on virtual social networks (Boursier, Gioia & Griffiths, 2020; Shane-Simpson, Schwartz, Abi-Habib, Tohme & Obeid, 2020; Arpacı, Yalçın, Baloglu & Kesici, 2018; Wang et al., 2018; Kim & Chock, 2017; McCain et al., 2016). On the other hand, selfie-taking behavior feedback and its perception through social comparison and the comments of others can affect people's physical perception, self-esteem, and sense of narcissism (Rousseau, 2021; Chang, Li, Loh & Chua, 2019; Yellowlees, Dingemans, Veldhuis & de Vaate, 2019; Mills, Musto, Williams & Tigge mann, 2018; Cohen, Newton-John & Slater, 2018; Wang, Yang & Haigh, 2016; Halpern, Katz & Carril, 2017; Chae, 2017). In general, these studies reveal a two-way relationship between taking selfies and posting them on virtual social networks with personality traits and psychological motivations. Additionally, these psychological traits and motivations lead to taking selfies and

sending them on the networks; this results in the feedback received from this action leading to its perception for the selfie-taker person who has a tendency and reinforcing characteristics used to achieve poor goals resulting in selfie behavior to be repeated. Psychological needs and the dark triad traits of personality seem to play a prominent role in this.

According to Maslow's theory, basic psychological needs include three types: the need for safety, the need for belonging, and the need for esteem (Noltemeyer et al., 2021). No study has been done on the relationship between these needs and taking selfies and sending them on virtual networks. However, based on the side findings of the existing studies, it is found that there is no relationship between taking selfies and posting them on social media with self-esteem (MaCain et al., 2016; Wang et al., 2016) and belonging (Kim & Chock, 2017). However, the need for popularity and extraversion and social expression are related to taking and sending selfies (Kim & Chock, 2017; Wang et al., 2016; Sorokowska et al., 2015). On the other hand, unsecure people with low self-esteem (Chua & Chang, 2016) and narcissists (Kim & Chock, 2017; Fox & Rooney, 2015) share edited photos to get the attention and approval of others. Also, people with low self-esteem and high feelings of loneliness (Liu & Baumeister, 2016) and people who need belonging and self-presentation (Nadkarni & Hofmann, 2012) use virtual social networks more. People with low self-esteem prefer cyber self-disclosure to face-to-face meetings (Forest & Wood, 2012). Abolghasemi and Soleimani Rad (2018) also show a significant negative relationship between the psychological well-being of selfie-

takers people and all three psychological needs. Taking selfies and sharing them can also lead to greater social sensitivity and decreased self-esteem (Shin, Kim, Im & Chong, 2017). Therefore, there seems to be an ambiguous relationship between taking selfies and psychological needs, which requires further investigation in this area.

The dark triad traits include the three personality traits of Machiavellianism, narcissism, and psychopathy, which are socially disturbing. Despite belonging to different origins, these traits have some characteristics in common, including selfishness, callousness, lack of interpersonal affect, remorselessness, superficial charm, self-promotion, emotional coldness, duplicity, and aggressiveness (Jakobwitz & Egan, 2006; Paulhus & Williams, 2002). Machiavellian beliefs in the naivete of others and a lack of respect for their rights lead to manipulative behavior (O'Boyle, Forsyth, Banks & McDaniel, 2012). Narcissists are self-centered people with a sense of grandeur, domination, and worth who perceive themselves as more intelligent, more attractive, and better than others (Fox & Rooney, 2015). Psychopathy focuses on apathy and lack of emotion or remorse and is characterized by a hostile interpersonal style that includes subtle forms of humiliation, retaliation, and ridicule (Smoker & March 2017). Considerable research evidence shows that there is a strong relationship between narcissism and selfie taking and sharing so that narcissism can predict it (Wang et al., 2018; Lowe-Calverley & Grieve, 2017; Moon, Lee, Lee, Choi & Sung, 2016; Halpern, Valenzuela & Katz, 2016; Kim & Chock, 2017; Sung, Lee, EuniceKim & Choi, 2016; MaCain et al., 2016; Kim et al., 2016; Sorokowski et

al., 2015; Weiser, 2015; Fox & Rooney, 2015). Thus, narcissism is one of the characteristics that leads to taking selfies and sharing them. Moreover, people with high narcissism use virtual social networks more (Liu & Baumeister, 2016). There is limited and contradictory evidence regarding selfie-taking and sharing it with psychopathy and Machiavellian traits. McCain et al. (2016) reveals that Machiavellianism and psychopathy are associated with taking and sending selfies. While Fox and Rooney (2015) only illustrate the relationship between psychopathy and taking and sending selfies, Machiavellianism bears no relation to selfie taking and sharing. Abolghasemi and Soleimani Rad (2018) also show a significant negative relationship between the psychological well-being of selfie-takers and psychopathy and Machiavellianism traits, but no relationship was seen with narcissism.

In general, due to the increasing spread of taking selfies and sending them on virtual social networks, identifying the psychological and personality factors underlying it is of great importance; additionally, the existence of limited and inconsistent research in this area of study and the existence of cultural differences make conduction of the present study necessary. Therefore, this study aimed to investigate the role of psychological needs and the dark triad traits of personality in selfie-taking behavior.

2. Method

The present study was a causal-comparative study. The participants were about 300 undergraduate students selected by cluster sampling from the faculties of

Guilan University who completed the questionnaires. In the initial review of the data, 92 participants were excluded from the analysis due to deficiencies in completing the questionnaires, general health problems, and outlier data; therefore, the data of 202 participants were reviewed. Participants were divided into three groups based on the researcher-made selfie checklist with three groups including selfie-takers ($n = 59$, 33 girls), the middle ($n = 71$, 35 girls) and non-selfie-takers ($n = 72$, 35 girls). The selfie-taker group included people who had a strong desire to take selfies and share them daily and weekly. The non-selfie-taker group included people who were less inclined to taking selfies; they also took selfies infrequently or once a year, and did not post their photos on virtual social networks. About 51% of the participants were female, and 49% of the students were native. The participants' mean (and standard deviation) age was 22 (4.12) in the age range of 18 to 30 years. Participants were members of at least one virtual social network. Telegram, Instagram, and later Facebook were the most popular networks with the most members, respectively. The following three questionnaires were employed for data collection.

Selfie-taking checklist. This researcher-made checklist included five questions to measure the number of posted selfies on social media. The questions were about membership in one of the social networks such as Instagram, Telegram, Facebook (yes or no), the desire to take a selfie (1 = very low to 5 = very high), the frequency of taking selfies (every day, every two days, every week, every month, once a month/year), others' visit from the person's page on social networks (1 = very

little to 5 = very much) and sharing their selfies (several times a day, once a day, once every two days, once a week, once a month and Once a year). In the present study, the Cronbach's alpha coefficient of this checklist was 0.72.

General Health. The General Health Questionnaire (GHQ-28; [Goldberg, 1972](#)) is a self-report instrument widely used to diagnose mild health symptoms. The 28 items form four subscales that assess physical symptoms, anxiety symptoms, social functioning, and depressive symptoms, each with seven items. Participants answered each item on a 4-point scale from none at all (0) to more than usual (3). The total score for general health was obtained by summing the subscales' scores. In this study, a cut-off point of 23 was considered for initial screening. This GHQ-28 had good validity, with an alpha coefficient of 0.94 ([Goldberg & Williams, 1998](#)). In the present study, Cronbach's alpha coefficient for this questionnaire was 0.96.

Maslow's Needs. The Maslow's Needs Satisfaction Questionnaire (MHNP-50; [Lester, 1990](#)) has 50 items that include five components. In the present study, only three needs related to safety, belonging, and esteem was used. Each item is measured on a four-point scale (never, sometimes, often, and always). This questionnaire had acceptable validity and reliability with an alpha coefficient of 0.91 ([Lester, 1990](#)). In the present study, Cronbach's alpha coefficient was 0.82.

Dark Triad Traits. The Dark Triad Traits of Personality Scale (DT-22; [Jonason & Webster, 2010](#)) is a 22-item form with a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) that includes three

subscales of narcissism, psychopathy, and Machiavellianism. This questionnaire had acceptable validity and reliability with an alpha coefficient of 0.83 ([Jonason & Webster, 2010](#)). In the present study, Cronbach's alpha was 0.77.

In order to carry out the present study at first, ethical considerations were taken into account and the permission was obtained from the University of Guilan; during two weeks in 5 faculties, all the available students in the faculties were asked to fill in the questionnaires voluntarily if they desired and had time. At the same time, the instructions for completing the questionnaires were given. All paper-based questionnaires were given to 300 subjects on three A4 sheets legibly and regularly. After answering the questions in 20 to 30 minutes time, the respondents were thanked, and their questions were answered; we collected the completed questionnaires on the same day. 34 out of 300 questionnaires of the participants were excluded from the study due to general health problems based on GHQ-28 results, 51 were removed due to incompleteness, and seven due to outlier data. Finally, the data of 202 participants were analyzed.

SPSS software version 24 was employed for statistical analysis. Mean and standard deviation was calculated to report descriptive data indices. Multivariate analysis of variance was assessed due to the design used to examine the differences of the middle groups. The accepted significance level was considered to be equal to 0.05.

3. Results

Table 1 tabulates the means and standard deviations of the psychological needs and personality traits scores for the three groups of selfie-takers, the middle and non-selfie-takers.

Data were tested for normality and the

result showed normal distribution.

Table 1
Descriptive indices (n = 202)

Components	Group 1 M (S)	Group 2 M (S)	Group 3 M (S)
The Maslow's Needs			
Safety	24.56 (3.54)	25.81 (3.60)	26.56 (4.11)
Belonging	26.69 (3.99)	28.65 (4.35)	29.28 (4.30)
Esteem	25.71 (3.36)	30.05 (3.80)	43.29 (3.35)
The Dark Triad Traits			
Narcissism	33.72 (5.70)	31.13 (5.68)	30.59 (5.24)
Psychopathy	14.25 (2.84)	13.22 (3.59)	13.64 (3.25)
Machiavellianism	8.97 (3.45)	8.15 (3.29)	7.84 (2.87)

Note. Group 1 = Selfie-taker Group; Group 2 = The Middle Group; Group 3= Non-Selfie-Taker group

The results related to the credit indicators of multivariate analysis of variance indicated that the effect of the group on the composition of the components was significant (Wilks's lambda = .667; $F = 6.20$, $p < .001$). The square of Eta revealed that the difference between groups in the components was significant, and the amount of this difference for all components as a group

composition was 0.667. That is, 66.7% of the variance related to the differences between the groups was due to the studied variables, the Maslow's needs and the dark triad traits.

In Table 2, the multivariate analysis of variance results for each variable is reported to compare the differences between groups in each component.

Table 2
Results of multivariate analysis of variance

Components	SS	Df	MS	F	P	PES	OP
The Maslow's Needs							
Safety	131.51	2	65.75	4.62	.011	0.644	0.990
Belonging	229.58	2	114.79	6.42	.002	0.661	0.988
Esteem	690.83	2	345.42	27.89	.001	0.759	0.989
The Dark Triad Traits							
Narcissism	353.70	2	176.85	5.78	.004	0.655	0.999
Psychopathy	33.95	2	16.98	1.59	.206	0.016	0.056
Machiavellianism	43.50	2	21.75	2.13	.122	0.021	0.094

Note. SS = Sum of Squares; MS = Mean Square. PES = Partial Eta Squared; OP = Observed power.

As can be seen in Table 2, there was a significant difference between the groups in all components except for the two components of psychopathy and Machiavellianism ($P < .05$).

In order to investigate how these differences were, the multiple comparison test of LSD was run. The results of LSD test are reported in Table 3.

Table 3
LSD test results

Components	Groups	MD	<i>p</i>
The Maslow's Needs			
Safety	1-2	-1.25	.162
	1-3	-2	.003
	2-3	-0.76	.232
Belonging	1-2	-1.96	.009
	1-3	-2.58	.001
	2-3	0.63	.377
Esteem	1-2	-4.34	.001
	1-3	-3.72	.001
	2-3	0.62	.294
The Dark Triad Traits			
Narcissism	1-2	1.02	.076
	1-3	0.61	.286
	2-3	0.41	.452
Psychopathy	1-2	0.82	.146
	1-3	1.13	.045
	2-3	0.31	.561
Machiavellianism	1-2	2.59	.008
	1-3	3.14	.001
	2-3	0.54	.558

Note. Group 1 = Selfie-taker Group; Group 2 = The Middle Group; Group 3= Non-Selfie-Taker group; MD = Mean Difference

According to Table 3, the selfie-taker group had less safety, belonging, and esteem needs than the non-selfie-taker group and the middle group, indicating the lack of satisfactory satisfaction of these needs. These people also had more narcissistic and Machiavellian traits. As can be seen in Table 3, the selfie-taker group had a lower average score in safety needs than the middle and non-selfie-taker groups, but no significant difference was observed between the middle group and

non-selfie-taker group. In the belonging and esteem needs, the selfie-taker group also had a lower average than the middle and non-selfie-taker groups, but no significant difference was seen between the middle and non-selfie-taker groups. In the narcissistic trait, the selfie-taker group had a higher mean than the middle and non-selfie-taker group, but there was no significant difference between the middle and non-selfie-taker groups.

Based on Table 3, there was no significant difference in psychopathy between the three groups in pairs. The selfie-taker group had a higher mean in Machiavellianism than the non-selfie group, but there was no significant difference seen in the middle group. There was no significant difference between the middle group and the non-selfie-taker group in this trait.

4. Discussion

The present study aimed to investigate the role of psychological needs and the dark triad traits of personality in selfie-taker behavior. Comparing the two groups in the psychological needs and the dark triad traits illustrated a significant difference. Nevertheless, there was no difference between the two groups in psychopathy trait.

According to the present study's results, selfie-takers in the needs of safety, belonging, and esteem, especially the need for esteem, scored lower than the non-selfie-taker group. That is to say, these people have unsatisfied safety, belonging, and esteem needs. These findings are in contradiction with MaCain et al. (2016) and Wang et al. (2016), who did not find a relationship between self-esteem and taking and sending selfies. Also, Kim & Chock (2017) did not see a relationship between the need for belonging and taking selfies and sharing them; our results do not support their findings, too. Cultural differences may be the answer to this discrepancy. Given that the popularity of virtual social networks in the society in Iran is increasing day by day and virtual communication has become a way for social interactions in this society more than before, it can be

explained that people in this new environment seek to express themselves and also, indirectly seek to satisfy their needs. Therefore, taking selfies and sending them on virtual networks and receiving feedback may be due to the lack and unsatisfactory satisfaction of the needs of safety, belonging, and esteem. Students, who are said to be the largest segment of society in using cyberspace, use this space to achieve academic and information goals and other purposes, for example, to expand social interactions, to express their views on academic and social issues and self-presentation, they are increasingly using these spaces to be known in a specific group. In this regard, they create virtual groups for a class, an educational group, a faculty, and even a university that no foreigner has the right to join, except for the members of that group. Although these groups are initially formed for learning purposes, they are also used to expand social interactions beyond the classroom, in which self-presentation is to be recognized and introduced. Therefore, taking and sending selfies can also facilitate the achievement of these goals, especially self-presentation. Since insecure people feel anxious, scared, and chaotic, and people with love and belonging needs feel lonely (Maslow, 1954), taking selfies and sharing them, and receiving feedback from others in cyberspace can be a way to connect with others (Sung et al., 2016) which is consequently a relief from safety anxiety and low self-esteem. It has been found that the psychological well-being of these people has a significant negative relationship with these psychological needs (Abolghasemi & Soleimani Rad, 2018).

Sharing photos, waiting for feedback in cyberspace and making short conversations

with other people in this space can be a way to satisfy social needs (Yang & Li, 2014). Therefore, to get rid of loneliness and feel safe in the community, even virtually, joining social networks and sharing selfies may be a compatible with justifiable. People with unmet self-esteem needs have low self-esteem that lacks several components, including self-confidence, value, capability, and adequacy (Maslow, 1954). Therefore, taking selfies and sharing them, and viewing the edited photos in cyberspace (Chua & Chang, 2016) can be a way to increase self-esteem with some extra benefits (Huang, 2018). Given that taking selfies and sharing them is a kind of expression and ostentation to attract attention and achieve self-esteem, it can also be a way to confirm and validate self-concept (Sung et al., 2016). Hence, taking selfies and sharing them can be done to attract attention and increase self-esteem. It is possible that creating different virtual groups of students in Telegram networks is also for these reasons, and putting all kinds of photos on a personal profile is a way to attract attention and thus feel superficial satisfaction; considering attracting attention it can be said that sharing photos of various situations on Instagram is determined to reflect the unsatisfactory fulfilment of these needs.

Regarding the dark triad traits of personality, the results illustrated that selfie-taker individuals have higher scores on narcissism and Machiavellianism than non-selfie-takers. These differences indicated that selfie-takers have more narcissistic and Machiavellian traits than non-selfie-takers. However, no significant difference was observed in the psychopathy trait. All researches in this area revealed that taking selfies and sharing them on

virtual networks has a significant positive relationship with narcissism; This substantiates previous findings in the literature (Wang et al., 2018; Lowe-Calverley & Grieve, 2017; Moon et al., 2016; Halpern et al., 2016; Kim & Chock, 2017; Sung et al., 2016; MaCain et al., 2016; Kim et al., 2016; Sorokowski et al., 2015; Weiser, 2015; Fox & Rooney, 2015). Based on this evidence the relationship between repeated taking and sharing selfies with narcissism was observed. It can be said that taking selfies and sharing them is closely related to narcissism and is a way to attract the attention and admiration of others (Sorokowski et al., 2016; Fox & Rooney, 2015), which in part satisfies the narcissistic needs of individuals as well. These people who consider themselves attractive and better than others (Fox & Rooney, 2015) take headshots and share them on virtual social networks to show that they want others to realize their attractiveness and beauty which is the result of this narcissistic image. Among the participants, with the social status of being a student, which is an attractive and valuable characteristic in the Iranian society, this widespread attention may create a feeling of narcissism in students. That is why most male students and some female students share their photos on their personal social media profiles, while in Iranian religious and customary culture, showing one's photo is not very much approved, especially for a girl, and is less common among non-students. Although it can be speculated that it might be due to education resulting in increasing self-esteem, it seems to be justified when the trait of narcissism is accompanied by it.

Regarding Machiavellianism, the personality traits of the people is based on

the fact that the purpose justifies the means and speaking should be based on the person's own will (Gunnthorsdottir, McCabe & Smith, 2002); this is known in Iranian culture to be the characteristics of instability and hypocrisy. Therefore, taking selfies and sharing them in different situations can probably be a way to show themselves off according to their goals to attract other people's attention. Taking a selfie and sending it is a kind of expression and ostentation which can be a kind of indication of consumerism and also happiness but not consumerism and happiness itself; it can also be explained as the tendency of the people to belong to a specific class or group or to appear in a particular way because there is no other way to express themselves. This feature seems to be somewhat common in Iran. It is also observed among students that they display at least one of their posted selfies with a background of a specific university logo or campus and even adjust their profile pictures to be relevant to their field and university. Thus, showing oneself in different ways to be ideal can explain why in the present example, taking selfies and sharing them is related to Machiavellianism.

Cultural differences may be involved in the lack of a relationship between the psychopathy trait and taking selfies and sharing them in the current study which does not support previous research in this area (McCain et al., 2016; Fox & Rooney, 2015). Given that the psychopathy trait focuses on apathy and lack of emotion or remorse and is characterized by a hostile interpersonal style that includes subtle forms of acts of humiliation, retaliation, and ridicule (Smoker & March, 2017), it can be said that others' feedback for these people

are not essential and do not create excitement in them. Besides, since the feedback of others on virtual social networks is a factor for taking selfies and sharing them (Yang & Li, 2014) which is important for the person taking the selfie, perhaps this lack of attention to feedback in psychopathic people cause indifference to taking selfies and sharing them. On the other hand, due to their characteristics such as humiliation and ridicule, in virtual social networks, these people may engage in ridiculing and humiliating of others, especially their shared selfies, for example, by writing negative comments. comments about their selfies.

5. Conclusion

Overall, the present study aimed to investigate the psychological needs and personality traits of selfie-takers that lead to selfie-taking and sending it on virtual social networks. The results revealed that selfie-takers have safety, belonging, and esteem needs compared to non-selfie-takers. They also have narcissistic and Machiavellian personality traits. Therefore, each of these factors can be an underlying cause to justify taking selfies and sending them on virtual social networks and to clarify this phenomenon. Working in the native culture of Iran, considering the basic needs, and paying attention to cultural explanations are the strengths of this research. The small number of samples, the lack of generalization of results, and the lack of review of respondents' virtual social networks to ensure the number of selfies sent and the number of member networks was among the present study's limitations. It is suggested that a study should be conducted regarding taking selfies and sending them on social media while

considering other factors such as personality traits, excitement, extroversion/introversion, self-perception, gender, and mainly social and cultural factors such as fashion and imitation and the identification with different participants.

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Conflict of interest

The Authors declare that there is no conflict of interest with any organization. Also, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Research Paper: Comparison of Cognitive Failure, Emotional Processing and Resilience in Female Students with and without Test Anxiety



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Abstract

This study investigated the comparison of cognitive failures, emotional processing and resilience among the female students with and without experiencing test anxiety. The present research is a causal-comparative study. The participants of study are 203 female students studying in tenth and eleventh grade of high school in Rasht in the academic year 2019-2020. Based on the analysis, 92 of the participants experienced test anxiety and 111 of them are without it. Cluster sampling with the cutoff point of 50 is employed for the selection of the participants. The participants completed Spielberger Test Anxiety Questionnaire, Cognitive Failures Questionnaire (CFQ), Emotional Processing Scale (EPS-25) and Connor-Davidson Psychological Resilience Scale Questionnaire (CD-RISC). The data are analyzed based on univariable analysis of variance. Results show that the students experiencing test anxiety obtain higher scores for cognitive failures; also, they have higher scores for emotional processing and lower scores for resilience than the students without test anxiety. These findings reveal that cognitive failures, emotional processing and resilience have fundamental a role in test anxiety.

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1. Introduction

Test anxiety is one of the issues with an unpleasant effect on educational achievement in students (Abdali, Golmohammadian & Rashidi, 2018). Around the world, test anxiety is shared among 25 to 40 percent of learners (Baghaei & Cassady, 2014). Test anxiety is a mental impairment that is specified by self-deprecation and doubt about one's abilities (Sarason, 1975). Students with higher levels of test anxiety usually get lower scores for exams (Sommer & Arendasy, 2016) and their responding patterns are different from the students with lower levels of test anxiety (Spoden, Fleischer & Frey, 2020). Three dimensions of test anxiety are behavioral, emotional and cognitive (Soysa & Weiss, 2014). Cognitive dimension consists of being worried about failure and people's judgement. Being nervous and sweating as a psychological reaction represent emotional and behavioral dimensions resulting in such behavior as constantly looking at the clock and pencil-taping (Trifoni & Shahini, 2011).

Anybody can be involved in anxiety, but cognitive and meta-cognitive patterns delineate its durability (Shahgholian, Azadfallah & Fathi ashtiani, 2012). Cognitive failures are related to anxiety (Wilkerson, Boals, & Taylor, 2012). Cognitive failure is a multidimensional variable that consists of failure in setting goals, failure in activating the schemas and failure in initiating actions (Wallace, Kass & Stanny, 2002). A person that is involved in cognitive failures is defined as an anxious and impulsive in character with low self-confidence (Markett, Reuter, Sindermann, & Montag, 2020). Some of the reasons of experiencing cognitive failures

are worrying, experiencing illness and doing multiple onerous duties. Cognitive failures result in several problems related to memory, distractibility, blunders and forgetting names (Yazdi, Darvizeh & Sheikh, 2015). According to Broadbent's (1984) filter model, the information will be accessed to be noticed based on its features; then, it will be sent for more processing, while other data are being blocked. During this process, anxiety causes attention bias. The cognitive component of anxiety consists of two dimensions: Attention bias and worry. It is hard for an anxious person to avoid cognitive failures (Jankowski & Bak, 2019). Jankowski and Bak (2019) display the association between anxiety and cognitive failures with mediating role of mindfulness. Carrigan and Barkus (2016) conclude that there is a strong association between stress and cognitive failures. Swanson's (2014) study reveals that participants with more cognitive failures have lower levels in academic achievement than participants with less cognitive failures. Broadbent's (1984) study illustrates that there is no significant relationship between great anxiety and daily cognitive failures. Birami and Pourfaraj Omran (2014) conclude that students with test anxiety have disordered metacognitive beliefs and they worry more than other students.

Another variable related to test anxiety is emotional processing the role of which in adapting to anxiety has been proved by a lot of evidence (Kring & Bachorowsky, 1999). Emotional processing is a process of absorbing and reducing the emotional or psychological disturbances to an extent that other experiences and behavior can continue without any problems. Rachman (2001) argues that if emotional experiences

get incompletely absorbed, there would be direct signs of a defect, such as the return of fear, maladaptive avoidance, unpleasant unwanted thoughts as well as indirect symptoms of inability to focus, restlessness, irritability. The controlling mechanisms of emotional experience and emotional expression include suppression, dissociation, avoidance, and lack of control. Over-avoidance or prolonged and severe inhibition of negative emotional experiences can prevent an individual from resolving the problem (Rachman, 2001, 1980). Emotional disturbances represent the disintegration of emotional processing components that interfere with the achievement of adaptive emotional functioning (Kring & Bachorowsky, 1999). In addition, students experience different emotions in educational situations. These Emotions are related to learning strategies and academic achievement. If a student assumes failing the exam is possible and uncontrollable, and considers the exam to be important because of its consequences in achieving career goals, he or she will be afraid of the exam and will become anxious (Pekrun, Frenzel, Goetz. & Perry, 2007). Individuals with test anxiety have mental obsessions and nervousness, too. They also focus more on activities that are not related to the assignments, so the retrieval of previous information is disrupted in them, ultimately causing problems in their individual performance (Malik, Akhter, Fatima, & Safder, 2013).

Sheykholeslami, Bashshashi and Jafari (2019) find that there is a significant difference between the performance of the students with high test anxiety and low-test anxiety in emotional processing; the scores for emotional processing of students with high test anxiety are significantly lower

than the other group. Shahbaziyan Khonig and Hasani (2017) show that there is a positive relationship between the components of test anxiety and alexithymia with academic burnout. Zare and Solgi (2012) indicate that there is a positive relationship between anxiety and stress with maladaptive cognitive emotion regulation strategies. Heydarian and Norouzi (2014), Capaydin and Emmioglu (2009) and Schutz, DiStefano, Benson & Davis (2004) determine that emotion regulation strategies can significantly predict test anxiety. Burns (2004) stresses that students' anxiety affects their ability to comprehend and learn and it is related to emotional regulation skills.

There is another component named Resilience which can help human beings to adapt to problematic situations and constant stress in life; also, it enables humans to recover from major challenges that threaten their stability, survival, or development (Newman, 2005; Ma et al., 2019). Resilience is a part of positive psychology and one of the main psychological features related to academic achievement (Kristjansson, 2016); this refers to the human ability to adapt to pain and affliction caused by life troubles and stressors (Hoseini ghomi & Salimi, 2012). This component is targeting those people who can improve their function and overcome anxiety, despite²⁸ being exposed to severe stress and risk factors (Yu et al., 2011). Additionally, the students' success in unpleasant and stressful situations during school, a significant part of the pressures and anxieties of adolescence, is related to resilience (Isabakhsh, Seif & Dortaj 2018). In this way, students with high resilience can use their skills and abilities in exam sessions and show better academic

competence (Jenadeleh, Bassak Nejad, Yunesi & Sadatmand, 2018). Trigueros et al. (2020) find that students with high resilience experience less anxiety, when they do exams. Johnston-Wilder, Brindley & Dent (2014) illustrate that elementary and high school students with high-resilience can manage stressful situations more effectively and experience less test anxiety. Moreover, the findings of Jamshidi, Fadaei Moghadam, Ghorbani and Farhoush (2017), Andreea and Oprea (2014) and Yaghoobi and Bakhtiari (2016) demonstrate that there is a negative relationship between each of the components of resilience (goal orientation, negative affects tolerance, leadership and spiritual coping) and test anxiety.

According to the important role of test anxiety in academic performance, finding its effective factors seems necessary. More accurate knowledge in this area can help to develop better guidelines for overcoming test anxiety. Thus the aim of this study is to determine the differences between cognitive failures, emotional processing and resilience in students with and without test anxiety.

2. Method

This was causal-comparative research. The sample consists of 203 female students studying in tenth and eleventh grade of high school in the academic year 2019-2020 (111 students with test anxiety and 92 students without test anxiety) with the cutoff point of 50, were chosen out of 600 students in the city of Rasht in two steps:

Step1) Identification: By employing cluster sampling, 8 public schools in Rasht were selected out of the high schools of district 2; from each school, 3 classrooms

were chosen (24 classes); then, out of each class, 25 students were selected to complete the test anxiety questionnaire.

Step2) Final phase: By the cutoff point of 50, 92 students were chosen as the participants with test anxiety and 111 students without test anxiety chosen randomly as the comparison group. The following questionnaires are administered in the present study.

Test Anxiety Inventory: Spielberger's (2010) test anxiety inventory with 20 items describing reactions before, during and after the exam, evaluating any individual's difference in test anxiety, was used. Test anxiety inventory is a self-report instrument; the participants answer the items on 1 to 4 Likert scale from never to almost always. Cronbach's alpha value for this inventory was reported to be 0.94. In addition, Abolghasemi, Mehrabizadeh Honarmand, Najarian & Shekarkan (2004) calculated its Cronbach's alpha value, test-retest coefficient and split half reliability value as 0.92, 0.90, 0.92, respectively. The total association between this inventory and Sarason Test Anxiety Scale was calculated as 0.82 and 0.83 in men and women, respectively.

Cognitive Failures Questionnaire (CFQ): Participants responded to Broadbent et al (1982) cognitive failures questionnaire with 25 items of five-point Likert scale (from never to always). The components are distractibility, memory related failures, blunders and forgetting names. Cronbach's alpha and internal consistency coefficient of this questionnaire were reported to be 0.91 and 0.4, respectively. The correlation coefficients of the subscales of Adult Behavior Checklist were reported to be in

the range of 0.52 to 0.76 (Wallace et al., 2002). In Iran setting, Cronbach's alpha of this questionnaire was calculated as 0.84; moreover, the face validity of this questionnaire was confirmed by several psychologists and linguists (Abolghasemi & Kiamarsi, 2009; Yazdi et al., 2015).

The Emotional Processing Scale (EPS-25): Baker's et al. (2010) Emotional Processing Scale is a 25-item self-report scale for measuring emotional processing styles. Each item is graded on a five-point Likert scale (from strongly disagree to strongly agree). This scale has 5 factors (Suppression, Impoverished emotional experience, Controllability of emotions, Signs of unprocessed emotions and Avoidance of emotional triggers). The psychometric properties of the revised version are particularly promising in terms of detecting differences between the group experiencing test anxiety and the group without test anxiety. The value of Cronbach's alpha and test-retest coefficient of this scale were reported to be 0.92 and 0.79, respectively. In order to determine the validity, this scale was correlated with emotion regulation scale. The results demonstrated that there was a significant and negative correlation between these two scales ($r = -.52$) (Sheykholeslami et al., 2019). In Keshavarz Afshar et al.'s (2018) study, the reliability of this scale was calculated as 0.95 using Cronbach's alpha coefficient. In the present study, Cronbach's alpha coefficient value of this scale was 0.70.

Connor and Davidson Resilience Scale (CD-RISC): This scale, designed by Connor and Davidson, (2003) measures psychological resilience. It has 25 items and 4 subscales including goal orientation, negative emotion tolerance, spirituality and

leadership. A five-point Likert scale (0- not at all true to 4- true nearly all the time) was in the response items. The range of the score in this scale is 0 to 100; the higher the score, the greater resilience would be. The results of the preliminary study regarding the psychometric properties of this scale in the normal and ill participants confirmed its reliability and validity (Connor & Davidson, 2003). The internal consistency reliability coefficient was 0.89. This scale was translated and validated by Mohammadi (2005) in Iran with a Cronbach's alpha coefficient value of 0.87. The content validity index of the Persian version of the Connor-Davidson Resilience Scale was also calculated as 0.98 (Ahangarzadeh et al., 2015).

The researcher chose high schools in Rasht to carry out the research; for conducting the present study, a comprehensive explanation was given to the participation. After negotiating the agreement, the students received the questionnaires. We asked them to answer the questions carefully and completely. It took about 20 minutes for each student to complete the questionnaires. Then on the basis of cutoff point (50), 92 students were chosen as the group experiencing test anxiety and 111 students were chosen as the group without test anxiety. Afterward, students of two groups completed the Cognitive Failure Questionnaire, the Emotional Processing Scale and Connor and Davidson Resilience Scale. Finally, the collected data were analyzed based on univariate variance analysis.

3. Results

The participants experiencing test anxiety (group 2), 32.6% (30 students) were in the

eleventh grade and 67.4 (62 students) were in the twelfth grade. The participants without test anxiety (group 1), 33.4% (36 students) were in the second grade and 67.6% (75 students) were in the third grade.

Table 1 illustrate the descriptive indicators of the variables of the present study.

Table 1

Descriptive indicators of the studied variables

Variable	Components	Group 1		Group 2	
		M	SD	M	SD
Cognitive failures	Distractibility	18.89	4.32	24.84	4.87
	Memory	13.95	3.78	18.12	3.86
	Blunders	15.14	4.17	19.93	4.62
	Forgetting names	3.60	1.34	5.05	1.73
	Suppression Impoverished	11.97	4.40	14.63	4.90
Emotional processing	emotional experience	14.42	2.70	15.91	3.08
	Controllability of emotions	24.02	2.40	25.13	2.66
	Signs of Unprocessed emotions	12.79	3.54	15.27	3.69
	Avoidance	17.56	4.17	18.46	3.64
Resilience	goal orientation	33.84	4.91	29.50	6.58
	negative affect tolerance	34.04	4.94	29.07	5.27
	Leadership	13.84	2.71	11.72	2.50
	Spirituality	9.03	1.38	7.90	1.56

Based on Table 1, among the two groups experiencing cognitive failures, distractibility and forgetting names had the most and the least mean, respectively. As far as Emotional processing is concerned, the components of controllability of emotions had the highest and suppression had the lowest mean in both groups. Additionally, among resilience components in both groups, spirituality had the least mean; the highest means belonged to the negative affect tolerance in group 1 and goal orientation in group 2.

Before using univariate analysis of variance to implement statistical assumption, Box's M as well as Bartlett and

Levene's tests were run. According to Box's M test for emotional processing components ($P = 0.12$, $F = 1.42$, $M \text{ Box} = 22.01$), cognitive failures ($P = 0.31$, $F = 1.15$, $M \text{ Box} = 11.76$) and resilience ($P = 0.01$, $F = 2.20$, $M \text{ Box} = 22.57$); therefore, the condition of homogeneity of covariance matrices is properly approved. Based on Levene's test and its insignificance for the variables of cognitive failures, emotional processing and resilience, the condition of intergroup variances equality was approved ($P < 0.05$). In addition, due to the insignificance of the results of the Kolmogorov-Smirnov statistic, the distribution of scores was normal ($0.87 > k_s > 0.25$).

Table 2

Results of univariate analysis of variance on the means of components of cognitive failures in students with and without test anxiety

Variable	SS	DF	MS	F	P	ETA	NP	OP
Distractibility	1789.21	1	1789.21	85.08	0.001	0.29	85.08	1
Memory	878.18	1	878.18	60.13	0.001	0.23	60.13	1
Blunders	1156.26	1	1156.26	60.09	0.001	0.23	60.09	1
Forgetting names	160.50	1	160.50	45.24	0.001	0.18	45.24	1

According to the results of univariate analysis of variance (Table 2), there was a difference in at least one of the components cognitive failures in students with and without test anxiety ($P < 0.01$, $Eta = 0.326$, $F = 23.95$). The Eta squared demonstrated that the amount of this difference was 0.326; thus 32.6% of the variance was related to the difference between two groups, which was due to the interaction of these components. The results in Table 2

expressed that the average scores for distractibility, memory, blunders and forgetting names were higher in students with test anxiety than students without test anxiety ($p < 0.01$).

Table 3 illustrate the results of univariate analysis of variance on the means of emotional processing components in students with and without test anxiety

Table 3

Results of univariate analysis of variance on the means of emotional processing components in students with and without test anxiety

Variable	SS	DF	MS	F	P	ETA	NP	OP
Suppression	357.01	1	357.01	16.55	0.001	0.07	16.55	0.98
Impoverished emotional experience	111.38	1	111.38	13.40	0.001	0.06	13.40	0.95
Controllability of emotions	62.37	1	62.37	9.77	0.001	0.04	9.77	0.87
Sings of unprocessed affect	312.11	1	312.11	23.86	0.001	0.10	23.86	0.99
Avoidance	40.70	1	40.70	2.61	0.10	0.01	2.61	0.36

Based on the data obtained from univariate analysis of variance, there was a difference in at least in one of the components of emotional processing in students with and without test anxiety ($P < 0.01$, $Eta = 0.145$, $F = 6.68$). The Eta squared verified that the amount of this difference was 0.145; therefore, 14.5% of the variance was related to the difference between groups that was due to the interaction of these components.

The results of Table 3 illustrated that the mean scores for suppressions, impoverished emotional experience, controllability of emotions and sings of unprocessed affect in the participants experiencing test anxiety were higher than the participants without test anxiety, but there was not a significant difference between the participants experiencing test anxiety and the ones without test anxiety in the avoidance component ($p < 0.01$).

Table 4 illustrate the results of univariate analysis of variance on the mean of

resilience components in students with and without test anxiety

Table 4

Results of univariate analysis of variance on the mean of resilience components in students with and without test anxiety

Variable	SS	DF	MS	F	P	ETA	NP	OP
Goal orientation	949.23	1	949.23	28.79	0.001	0.12	28.79	1
Negative affect tolerance	1244.87	1	1244.87	47.92	0.001	0.19	47.92	1
Leadership	227.56	1	227.56	33.07	0.001	0.14	33.07	1
Spiritual confrontation	64.70	1	64.70	30.10	0.001	0.13	30.10	1

The results of univariate analysis of variance revealed that there was a difference in at least one of the components ($P < 0.01$, $\eta^2 = 0.232$, $F = 14.94$). The Eta squared established that the difference was 0.232; consequently, 23.2% of the variance was related to the difference between groups which was due to the interaction of these components.

Based on the results of **Table 4**, the mean scores for the goal orientation, negative affect tolerance, leadership and spiritual confrontation were lower in the participants experiencing test anxiety than the participants without test anxiety ($p < 0.01$).

4. Discussion

The present study investigated the comparison of cognitive failures, emotional processing and resilience in female students with and without test anxiety. Results showed that students with high test anxiety had higher scores for distractibility, memory problems, blunders and forgetting names than students with lower test anxiety. Our experiments corroborate previous results (Jankowski & Bak, 2019; Carrigan & Barkus, 2016; Birami et al., 2014). However, these findings refute previous results reported in the literature

(Broadbent, 1984). On the basis of results, anxiety increases the negative cognitions which in turn would disturb the information processing, resulting in some problems in student's cognitive processes (Shahgholian et al., 2012). Anxious students experienced physiological symptoms of anxiety, fear of failure and people's judgement. These participants concentrated on negative thoughts and predictions (like bad scores); as a result, their concentration on important stimulus decreased which resulted in distractibility. A distracted student could not process the questions of exam correctly, forgetting the pieces of information which in turn resulted in making problems for information retrieval. Therefore, students with test anxiety have higher scores for components of cognitive failures. That is to say, students could normally complete school tasks, but test anxiety did not let them use their potentials (Yazdi et al., 2015). The worrying caused by test anxiety affects learning and memorizing information and leads to distractibility and other cognitive failures.

Results also revealed that the participants experiencing test anxiety had significantly higher scores than the participants without test anxiety in

emotional processing components (excluding avoidance). Even though these results differ from some published studies (Sheykholeslami et al., 2019), they are consistent with those of (Capaaydin & Emmioglu, 2009; Heydarian & Norouzi, 2014; Schutz et al., 2004). Based on the findings, students experience different emotions in academic setting, if they think, failure in the next exam is uncontrollable, they will become anxious (Pekrun et al., 2007); moreover, test anxiety causes mental obsessions and impairment in previous information retrieval (Malik et al., 2013). As a result, the students became more vulnerable emotionally and could fail to control the unwanted emotions in the process of getting the desired results; as Rachman (2001, 1980) put it, uninvited thoughts and inability to concentrate, was symptoms of deficient absorption of emotional experiences. Therefore, it leads to two different assumptions: First, the impairment in emotional processing leading to deficiency in functioning which increases test anxiety. Second, we can consider this relationship to be twofold: Students' interpretation of their excitement and anxiety disrupts their emotional processing; thus, those with higher anxiety will have impaired emotional processing. In present study, the participants demonstrated more difference in the components of suppression and signs of unprocessed emotions. Suppression is one of the mechanisms that controls emotional experiences preventing the handling of negative emotional experiences (Rachman, 2001) and leaving anxiety unresolved. Due to the fact that anxious students were unable to process emotions, this disturbance could be applied to their higher levels of anxiety; therefore, if they learned

to control their emotional processing, they would be able to control their own anxiety.

Regarding resilience, the results stressed that students with test anxiety scored lower for the resilience components. This substantiates previous findings in the literature (Trigueros et al., 2020; Jamshidi et al., 2017; Johnston-Wilder, 2014; Yaghoubi & Bakhtiari, 2015). Based on the results, the participants with higher resilience and lower levels of test anxiety as well as the ones with better adjustment in the process of studying can use their abilities in exams session and display better academic competence (Jenadeleh et al., 2018). Students with resilience achieve higher levels of success and feel less stressed and less exhausted about school-related activities (Yaghoubi & Bakhtiari, 2016). According to the findings, academic success has always been one of the most important achievements of the students; however, the fear of failure would make them anxious. If students did not possess the necessary skills to manage these conditions, they would suffer from fatigue and burnout under stress. Since resilience has increased protective factors such as positive attitude and self-directedness and has reduced negative attitude and anxiety, it can also help people to alleviate levels of anxiety, ultimately leading to better performance in exams and generally in academic achievement³⁴.

One of the limitations of this study was using a cutoff point and other was lacking control over the effective variables (intelligence, social class and economic condition). The mono sexed participants (just female) was another limitation.

5. Conclusion

To sum up, the results of this study indicated a significant difference between the participants experiencing test anxiety and the ones without test anxiety in cognitive failures, emotional processing and resilience and representing determinant role of these variables in test anxiety. These findings fulfilled pivotal roles in the area of psychopathology and prevention of test anxiety. Probably endeavoring toward decreasing the cognitive failures, improving the emotional processing and increasing the resilience could help therapy methods for decreasing test anxiety. Findings of this study indicated that counseling and educational programs should be designed to reduce the cognitive deficits and to improve emotional processing, while increasing resilience in students; such programs are expected to be effective in reducing students' test anxiety and representing their academic achievements.

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Conflict of interest

The authors declare that there is no conflict of interest.

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Research Paper: Predicting Students' Psychological Well-being Based on the Components of Spiritual Intelligence and Sense of Coherence



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Abstract

Psychological well-being, meaning cognitive and emotional evaluations of one's life, which is one of the components of positive psychology, is of particular importance in students' behavior today. Therefore, recognizing the factors affecting it plays a crucial role in enhancing students' psychological well-being. The present study aims at predicting students' psychological well-being based on the components of spiritual intelligence and a sense of coherence. The present study is applied as well as descriptive/correlational research in terms of purpose and in terms of the nature and method respectively. Based on the Morgan Table, a sample of 248 of Bilesavar Moghan Azad University students in the academic year 2019-2020 is randomly selected. Sense of Coherence Questionnaire, Spiritual Intelligence Self-Report Inventory (SISRI-24) and Psychological Well-being Questionnaire are employed for data collection. Pearson correlation coefficient and regression are used for analysis data. The results show that there is a significant and positive relationship between spiritual intelligence as well as sense of coherence and students' psychological well-being; this means that whenever spiritual intelligence as well as sense of coherence increase, there is also improvement in psychological well-being. Spiritual intelligence can be a good predictor of psychological well-being and mental health. The spiritual tendency in life prevents a person from doing wrong and showing unacceptable behavior; it can ensure person's mental health.

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1. Introduction

Health is a dynamic state in which people are constantly adapting themselves to the changes in the environment; moreover, psychological well-being is one of the most fundamental components of health. The absence of mental health is no longer just a disorder; therefore, improving the level of psychological well-being is one of the goals of psychology in this century. In addition, the psychologists are focused on the fields of mood and personality, the effect of culture, coping skills, the level of optimism and pessimism, social support and individual cognition and its effect on psychological well-being (Sabzi et al., 2015). Psychological well-being is the development of a person's true talents and an attempt to realize one's individual potentials. According to Ryff theory, psychological well-being is the same as life goals, awareness of individual abilities and the quality of interpersonal relationships. Thus, well-being is to strive for transcendence and promotion, which is manifested in the realization of one's talents and abilities. In psychology, well-being is defined as the optimal functioning of human beings. The studies have confirmed a correlation between spirituality and purposeful life as well as life satisfaction and mental health. Ryff (1995) defines psychological well-being as the pursuit of perfection and the realization of one's potentials. Accordingly, psychological well-being is an attempt to seek excellence and advancement, manifesting itself in the actualization of one's talents and abilities. Psychological well-being is one of the psychological foundations of the quality of life, reflecting one's positive nature and vitality. Ryff & Keyes (1995) try to determine and classify the criteria of an

optimal life or the so-called "good life". Intelligence is a concept that researchers have long been interested in studying its dimensions, signs, features and types.

Another type of intelligence component is spiritual intelligence; however, a comprehensive and coherent research to identify and explain its components has not been conducted yet compared to other dimensions of intelligence. Spiritual intelligence has gone beyond the domain of physical and cognitive relationships with one's environment and has entered the domain of transcendence in one's life worldview. Patrick (cited in Rajaei, 2010) believes that religion has helped people to produce psychological structures and strategies over time; it has also solved many problems of human beings in the field of psychology. This indicates one of the basic functions of religion in its evolutionary path.

All the strategies such as altruism, unity, and social interaction have a religious foundation. Religion has been able to help to solve human problems in these areas before the advent of contemporary psychological science (Nasel, 2004). One of the effects of spiritual intelligence on interpersonal empathy and sympathy toward others is that if the other party deeply understands his/her inner mistakes, he/she will stop doing the wrong action. This abandonment of action will free the people from confusion in the face of change which is a high level of spiritual intelligence. A highly spiritual intelligent person has feelings such as God's control and supervision over actions, feelings of peace and being away from depression, and states such as losing concern and gaining a sense of harmony with the world,

perceiving truths, and that the world is often subject to objective change; this means the feeling of purity, freshness and beauty, and finally deep joy and happiness. A sense of self-sufficiency in childhood also leads to a sense of coherence in adulthood. According to Antonovsky's theory, the feeling of adequacy and creating sources of resistance in childhood and adolescence lead to a feeling of strong connection in adulthood. Antonovsky considers the sense of coherence as a pervasive orientation leading to the formation of beliefs in such a way that the internal and external stimuli in the path of life are predictable and explicable (Abdollahzade, Bagherpour, Boujmehrani & Lotfi, 2009). The person has the resources and abilities to deal with a set of these stimuli guide people into a valuable sense of exposure to these stimuli. Additionally, Antonovsky believes that a sense of coherence creates a source of generalized resilience mitigating the effects of stress on health. Therefore, it provides useful methods of dealing with stressors and thus enables the person to show more resistance to the effects of life stress (Abdullahzade et al., 2009). The sense of coherence is a personality structure with three components of perceptibility, ability to manage and meaningfulness. Regarding perceptibility, the sense of coherence means that a person believes that nothing negative or surprising has happened; it also means that life can go well and reasonably as expected. The component of the ability to manage reflects the feeling of having the resources needed to solve a problem and cope with stress. Finally, a sense of meaningfulness implies one that values life not only cognitively but also emotionally (Vastamaki, 2009). Besides, psychological well-being is defined as mental well-being,

but it may have a different meaning. Well-being in people is defined by the quality and quantity of finding their lives enjoyable; that is, evaluating one's life is based on mental well-being. Mental well-being refers to the fact that people can determine whether they have lived a pleasant life which is influenced by the criteria of success. One of the most important models that conceptualize and operationalize psychological well-being is the Multi-dimensional model of Ryff, Singer, Love & Essex (1998). Now a days, spirituality has been considered by researchers as one of the dimensions of human interactions that has a significant relationship with health and recovery (Downie, Fyfe & Tannahill, 1990). Apart from being similar to religion, spirituality is also a broader concept than religion (Macdonald, 2002). Spiritual intelligence combines the variables of spirituality and intelligence into a new structure (Macdonald, 2002) and is listed under such headings as human abilities and experiences and the integrated connection between us and the world in which we live (Emmons, 1999). Since psychological well-being is one of the important indicators of mental health, quality of life and life satisfaction, as well as social, personality, emotional, cultural, occupational, and other factors playing a role in people's well-being. Moreover, one of the main tools of mental health is mental well-being; therefore, universities need to seek recourse to social normalization in this field, because their feelings, behavior, actions and way of thinking are quickly modeled by people. Consequently, recognizing psychological needs, values, and the norms governing their behavior can contribute to researchers and social thinkers in order to predict some social realities.

Students are the scientific, political, and economic pioneers of development in any country; therefore, taking care of their mental health is challenging for the authorities. Psychological well-being, spirituality and meaningfulness in the lives of young people and students are among the challenges the socio-political and educational system of the country are facing. Therefore, all necessary measures should be taken according to the fundamental changes in the lifestyle as well as many fundamental issues in the students' lives.

Ameri & Khajvand Khoshli (2015) report that there is a statistically positive and significant relationship between spiritual intelligence and the psychological well-being of students. In addition, the results of Yazdani Ahmadabadi's (2017) study indicate that the components of sense of coherence (comprehensibility, meaningfulness and manageability) could predict students' life satisfaction by 13%, among which the component of manageability is the best predictor of life satisfaction in students by six percent.

Moreover, Hajilari (2017) indicate that there is a significant relationship between emotion regulation styles and spiritual intelligence with students' psychological well-being. Students' psychological well-being can be predicted by their emotion regulation styles and spiritual intelligence, and there is no significant difference between the psychological well-being, emotion regulation styles, and spiritual intelligence of female and male students.

Martínez and Custódio (2014) studied the correlation between mental health and spiritual well-being among kidney patients.

He shows that there is a positive correlation between spiritual intelligence and psychological well-being, extraversion and openness to empiricism and a negative relationship with neuroticism. In addition, spiritual intelligence is related to positive emotions and general satisfaction with life in various areas of family, education and employment, among others, which is reported to be the fundamental organizer of personality.

De Caroli and Sagone (2016) finds that feelings of coherence, mental well-being and gender awareness are related. Female leaders positively or impartially refer to gender in a male-dominated workplace by full integration. The results put emphasis on the strategies for promoting individuals and social health in an organization and individual orientation contributing to individuals' (mental) health. This study contributes to the gender literature in the paradigm of positive organizational behavior, providing recommendations for future research, and highlighting practical implications for organizations. Nilsson, Leppert, Simonsson and Starrin (2010) report that improvement with age shows a stronger sense of coherence in male than that of female participants. In addition, the sense of coherence has increased with age in both genders. Their findings suggest that SOC's may last for a lifetime.

Several tests have been administered in the field for explaining the role of spiritual intelligence, resilience, well-being and sense of coherence and their effects on mental health and self-control and even self-leadership of individuals; however, in both Iranian and foreign studies, variables of spiritual intelligence and sense of continuity do not affect students'

psychological well-being. Therefore, performing in-depth research on the students' state of mental well-being in the current situation in Iran seems necessary. Besides, some other questions are also raised here. The present study aims at answering this question: Is there a significant relationship between spiritual intelligence, the sense of coherence and the psychological well-being of students at the Islamic Azad University, Bilesavar Moghan Branch?

2. Method

The present study is applied in terms of purpose, descriptive and correlational in terms of design and field research in terms of the data collection method. The participants of the study were 700 students studying at Bilesavar Moghan Azad University in 2019, of which 248 people were randomly selected as a sample using Morgan Table the sample size calculator. The participants of the study were selected based on availability. Three closed-ended questionnaires were used to collect the data, the descriptions of which are given below:

Spiritual Intelligence Self-Report Inventory (SISRI-24): This questionnaire was designed and developed by King (2008). It has 24 items with 5 Likert scales ranging from "no opinion (0)" to completely correct (4); it includes four scales of Critical Existential Thinking, Personal Meaning Production, Transcendent Awareness and Consciousness State Expansion. Critical thinking has 7 questions. The Personal Meaning Creation subscale includes 5 questions. Besides, the transcendental consciousness subscale has 7 items. The content validity of the questionnaire was confirmed by statistics experts and the

reliability of this questionnaire was obtained 0.83 using Cronbach's alpha method.

Sense of Coherence questionnaire: Antonovsky Coherence Feeling Questionnaire (1993) contains 29 five-option questions to be graded from 1 to 5. This questionnaire consists of three dimensions, which are listed below in terms of their related items: comprehensibility: The score of this subscale ranges from 11 to 55; manageability: the score of this subscale ranges from 10 to 50. Sense of meaningfulness: the score of this subscale ranged from 7 to 35. The content validity of the questionnaire was confirmed by statistics experts and its reliability was 0.90 using Cronbach's alpha method.

Psychological Well-being Questionnaire: The Ryff's Psychological Well-being Questionnaire was developed in 1998 and revised in 2002 (cited in Ashkani & Heydari) This scale has six subscales of autonomy, environmental mastery, personal growth, positive relation with others, purpose in life, and self-acceptance that are scored on a six-point Likert scale from strongly agree to strongly disagree. The content validity of the questionnaire was confirmed by statistics experts and its reliability was 0.89 employing Cronbach's alpha method.

3. Results

Since the normality of research variables is one of the basic assumptions of using parametric tests, the Kolmogorov-Smirnov test was used for normal data distribution. The test results indicated that the Z value for all research variables is greater than 0.05. Therefore, the Z value is not significant to the alpha value of 0.05 level, indicating the normal distribution of

variables. Moreover, the means of research variables are as follows: spiritual intelligence (3.89), sense of coherence (3.75), psychological well-being (3.61) and their standard deviations are 0.25, 0.21, and 0.18, respectively. The highest mean, (3.89)

is related to the spiritual intelligence dimension and the lowest mean, (3.61) is related to the mental well-being dimension. [Table 1](#) shows the correlation coefficient between spiritual intelligence and mental well-being.

Table 1

The correlation coefficient between spiritual intelligence and psychological well-being

Number of samples	Significance level	Correlation coefficient
248	0.001	0.512

As shown in [Table 1](#), the relationship between spiritual intelligence and mental well-being is significant at the 0.001 level. Besides, the correlation intensity between the two variables, spiritual intelligence and

mental well-being is 0.51, indicating a direct relationship between the two variables. [Table 2](#) shows the correlation coefficient of the sense of coherence and mental well-being.

Table 2

The correlation coefficient between a sense of coherence and psychological well-being

Number of samples	Significance level	Correlation coefficient
248	0.000	0.614

[Table 2](#) illustrates that the relationship between the sense of coherence and psychological well-being is significant at the 0.001 level. Accordingly, the intensity of the correlation between the sense of coherence and psychological well-being is 0.614%, indicating a direct relationship

between the two variables. Additionally, multivariate regression (Enter method) was hired to predict the changes in the scores of spiritual intelligence, sense of coherence, and psychological well-being. [Table 3](#) summarizes the multivariate regression model.

Table 3

A summary of multivariate regression model

Correlation coefficient	Coefficient of determination	The adjusted coefficient of determination	Durbin-Watson Test
0.63	0.426	0.418	1.962

As displayed in [Table 3](#), the correlation coefficient between spiritual intelligence as well as the sense of coherence and psychological well-being equaled to 0.635 and the coefficient of determination was reported to be 0.426. Furthermore, the Durbin-Watson statistic was 0.962 ranging

from 1.5 to 2.5, thus the errors do not correlate. [Table 4](#) shows the results of the multivariate regression analysis test for predicting mental well-being based on the sense of coherence and spiritual intelligence.

Table 4

The results of multivariate regression analysis of spiritual intelligence, sense of coherence and psychological well-being

Model	B	Std. Error	Beta	T value	Significance level
Constant	1.307	0.204		6.405	0.001
Spiritual Intelligence	0.161	0.123	0.192	1.370	0.001
Sense of coherence	0.410	0.080	0.390	5.128	0.001

a. Dependent Variable: psychological well-being

Table 4 reveals that there is a significant relationship between the sum of independent variables and the dependent variable (psychological well-being). The obtained beta value indicates that the highest coefficient belongs to the variables of sense of coherence factors (0.390) and the lowest spiritual intelligence (0.192). That is, as spiritual intelligence increases, the sense of coherence and the students' psychological well-being also increases, and vice versa, as the spiritual intelligence and sense of coherence decreases, the psychological well-being also decreases.

4. Discussion

The present study aimed at predicting students' psychological well-being based on the components of spiritual intelligence and sense of coherence. The statistical analysis showed that there was a direct and significant relationship between spiritual intelligence and students' psychological well-being. The present result was in line with the studies done by Askary, Asgary and Sangani (2019), Jalali and Khosh Mardan (2018), Behrozi, Kamranifar and Marouti (2018), Hajilari (2017), Nosrati, Rahimi-Nejad and Ghayoomi Naeeni (2018), Sotoodeh, Shakerinia, Kheyrati, Dargahi and Ghasemi Jobaneh (2016), Delqhandi, (2016), Shojaei and Soleymani (2015), Ameri & Khajvand Khoshli (2015),

and Martínez and Custódio (2014). In addition, spiritual intelligence could have a significant impact on the well-being and psychological and mental health of human beings. A person with spiritual tendency in life won't do wrong or show inconsistent behaviors and stay mentally healthy. Moreover, a person who uses spiritual intelligence can have negative experiences leading to mental illness; also, this person can experience meaningfulness, escape from their suffering or get rid of the negative thoughts. However, he/she will establish a deeper relationship with others and ultimately increase life satisfaction.

There is a positive relationship between the sense of coherence and students' psychological well-being, which is in line with the studies of Nilsson (2010) and De Caroli and Sagone (2016). Therefore, the results indicate that a sense of coherence makes a person able to understand and accept life emotions and events better. Also, a sense of coherence leads to building self-confidence in these people and thus increases the psychological well-being of students. As a result, it should be noted that there is a significant relationship between spiritual intelligence and the sense of coherence and students' psychological well-being. Thus, deep knowledge of God purpose in life, two elements of spiritual

intelligence, can help people tackle a problem. If a person has a higher level of spiritual intelligence, he/she will experience a valuable and purposeful meaning in his/her life. Therefore, they endure hardships and show a greater sense of solidarity in society. The school time is a good time to teach spiritual intelligence to the students. Stimulating environment that leads to raise spiritual questions can increase and strengthen spiritual intelligence in people. As a result, it will be possible for students to achieve this goal by creating group lessons and workshops in this field. Finally, spiritual intelligence can be increased, regardless of individual and demographic differences, through various exercises, attention, changing emotions, and reinforcing moral behavior. One of the best ways to strengthen it is to teach science along with true greatness and grandeur of life, and to show new horizons that unveil intellectual limitations so that learners can see and hear, and then get rid of the limitations of material life and understand the meaning of existence and life. Since this research was conducted at Bilesavar Moghan Azad University, extending it to other cities shall be done with care, which is another limitation imposed to the nature of the case study strategy. This reduces the generalizability of the results to other participants or other times. It is suggested that the effect of social support training on resilience and psychological well-being and happiness be examined in future research.

5. Conclusion

Therefore, it can be concluded that spiritual intelligence and higher sense of coherence in university students are correlated with promoted welfare.

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Conflict of interest

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Research Paper: Predicting Anxiety level for COVID 19 based on Mindfulness and Resilience



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Abstract

Coronavirus pandemic has caused people a lot of anxiety in the past two years. The present study aims at predicting Coronavirus anxiety level based on mindfulness and resilience. It is applied research in terms of the goal; and methodologically, it is descriptive correlational research. Corona Disease Anxiety Scale (CDAS), Five Facet Mindfulness Questionnaire (FFMQ) as well as The Connor-Davidson Resilience Scale (CD-RISD) are employed to gather the data. The participants of the study include all Rahman Institute of Higher Education students in the academic year 2020-2021. A total of 260 (147 male and 113 female) students are chosen based on convenience sampling for whom the questionnaires are administered on-line. Statistical data analysis is based on regression analysis. The results of the multiple liner regression show that 12 percent of variance in COVID 19 anxiety is related to two of the mindfulness facets as observing and acting with awareness ($p < 0.01$). Additionally, 19.6 percent of variance in COVID 19 anxiety is determined by mindfulness. Therefore, it is concluded that the facet of observing and resilience are related to less COVID 19 anxiety and acting with awareness is in connection with more COVID 19 anxiety in people.

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1. Introduction

Considering the fact that all the countries of the world are dealing with the Coronavirus pandemic and even in the developed countries, the fatal spread of the disease has endangered the public health, the signs of anxiety specifically health anxiety and the fear of getting the disease is undeniable (Mohammadi & SHahyad, 2020).

Fear of disease, fear of death, spreading rumors and fake news, its interference with our daily life, pandemic curfew and lockdowns, social relationship deterioration (regarding colleagues, friends and family), career issues, financial problems and a lot more issues threatening the society's mental health. One of the most important dangers threatening people is Coronavirus related anxiety, indeed. Previous studies show that the development of ailments such as pulmonary disease causing serious health problems and compromising the patients' quality of life resulting in the anxiety associated to the disease (Alizade Fard & Saffarinia, 2020).

Hypochondriasis or illness anxiety disorder means worrying excessively and preoccupation of mind about one's state of health (Lima et al., 2020). The main symptom of this disorder is unrealistic interpretation of the physical problems, interpreting natural senses as unnatural ones which results in preoccupation of mind about one's disease or the fear of developing a severe disease. Physical examination will show no signs of physical illness to relate it to the patient's unrealistic interpretation of the physical problems in this disorder. The fear or unrealistic belief of having illness will remain despite doctor's assurance of health which leads in

inhibiting social activity and derailing career (Khodayarifard & Asayesh, 2020).

Fischhoff (2020) express that a lot of studies focus on patients' anxiety; however, in fact, in Coronavirus pandemic, fear of disease and fear of death along with hectic lifestyle make common people suffer from illness anxiety. Anxiety about Coronavirus is common nowadays. It also seems that this kind of anxiety arises due to unknown and ambiguous nature of this disease. Fear of unknown decrease the understanding of immunity leading to anxiety (Bajema et al., 2020).

One of the strategies which help individuals face stressful situations like COVID 19 anxiety and combat this disorder is resilience. Resilience is a dynamic process in which people facing difficulty will show positive adaptive behavior which is used as a therapeutic treatment to decrease patients' stress (Seyedoshohadaee, Seraj & Haghani, 2020). Resilience is the individual, family and society's ability to encounter and avoid problematic and stressful situations in life which does not have immediate effects on the problems and prepare the individual for the future predicaments (Khanjani, Sohrabi & Aazami, 2018). Resilience can help the individual cure or manage the problems. Based on Verdolini et al. (2021), resilience is a dynamic process providing considerable positive adaptation for the intolerable situations. Resilience is the ability to confront daunting challenges in life. As a dynamic process, resilience can provide positive adaptation to catastrophic events in life. When you are under the pressure of a catastrophic event, this psychological capacity, resilience, can help you go back to the time before that catastrophic event and encounter it more

energetically (Saadat, Davarpanah, Saeedpour & Samiee, 2019). One of the determining factors in of the individuals' responses to stressful events is resilience. Resilience is one of the most important components of positive psychology. Newman (2003, as cited in Taherifard & Mikaeili, 2019) believes that resilience is the process or ability to tackle challenges and counter threats. He (ibid) stresses that people with resilience possess a common group of characteristics which enables them to deal with vicissitudes of life.

When people encounter difficult situations like Coronavirus pandemic, mindfulness can be introduced and gain great importance. Since mindfulness is a crucial factor in decreasing anxiety, investigating its decisive role in in corona related anxiety has gained significance (Zare, Kamranpour Jahromi & Chitsazi, 2021). Mindfulness entails having full flexibility in paying attention to present experiences in an accepting and non-judgmental mode (Kabat-Zinn, 1982). These experiences include one's thoughts and emotions considered to be contemporary mental state. Mindfulness is non-judgmental and balanced emotion of the present experience which can help people see and accept sensations and physical phenomenon clearly (Barghoun, Demehri & Azizi, 2020). Studies show that mindfulness-based therapy is related to a decrease in some health issues such as pain, anxiety, depression and stress (Maneshi Azghandi, Pashang & Khodaverdian, 2007). Recent studies reveal the relationship between the said variables and anxiety. In their study, Lisa et al. (2021) a positive characteristic like resilience, mindfulness and optimism can protect us against the mental turmoil created due to

COVID 19 pandemic. In Zarea, Kamranpour Jahromi, and Chitsazi's (2021) study, some subscales of mindfulness could anticipate Coronavirus anxiety of Shiraz University students. Eyni, Ebadi and Torabi (2020) find that resilience index can be directly and indirectly linked to the university students' Coronavirus anxiety. The anxiety resulted from Coronavirus pandemic is tormenting for university students, inasmuch as university students are considered as our country's human capital and their mental well-being is closely related to our country's development and growth. Moreover, Coronavirus pandemic has affected the educational system resulting in a big change in the teaching method. Hence, students should adapt themselves to these kinds of changes. It is therefore concluded that Coronavirus anxiety can interfere with their studies. Consequently, recognizing different factors related to the Coronavirus anxiety can help us take preventive measures. Regarding the said fact, the present study aims at answering the following question.

RQ: Do mindfulness and resilience can predict Coronavirus anxiety among students of Rahman Institute of Higher Education?

2. Method

The present study was applied research regarding its aim and it was descriptive correlational research in the case of design. The participants of the study were all the students of Rahman Institute of Higher Education in the academic year 2020-2021. By employing Krejcie and Morgan Table, 245 participants were selected out of all students. There was a probability of manipulation of the questionnaires, thus 260 (147 male/113 female) students were

chosen. All the participants consent to participate in the experiment.

For the data collection purpose, the following three questionnaires were used.

Corona Disease Anxiety Scale (CDAS): It was a tool for measuring the anxiety regarding the Coronavirus outbreak in Iran made and validated by [Alipour et al. \(2020\)](#). The latest version of this questionnaire had 18 items with 4 Likert Scale ranging from (Never=0, Sometimes =1, Most of the time=2, Always=3). The highest and lowest score a person could get from this questionnaire were between 0 to 54. The higher the scores they got, the more the anxiety they had. The reliability of this scale was tested by Cronbach's alpha coefficient test. The first factor's value was 0.879, the second was 0.861 and the reliability value of the whole questionnaire was 0.919. Moreover, the λ^2 Gutman value for the first factor was 0.882 ($\lambda^2=0.882$), and the second factor was 0.864 ($\lambda^2=0.864$). For the criterion validity of this questionnaire, its correlation with GHQ-2R questionnaire was calculated. The results showed that correlation values between CDAS and GHQ-2R's scores regarding anxiety, physical symptoms, social functioning disorder and depression were 0.483, 0.507, 0.418, 0.333 and 0.269 respectively. All the values were significant ($p=0.01 \leq 0.05$) ([Alipour et al., 2020](#)). In the present questionnaire, Cronbach's alpha value was 0.637.

Five Facet Mindfulness Questionnaire (FFMQ): It was a psychological, self-assessment 39 item questionnaire developed by [Baer, Smith, Hopkins, Krietemeyer and Toney \(2006\)](#). It was a combination of a couple of questionnaires made with factor analysis. The participants

were asked to choose between five Likert scale ranging from 1 (Never or Rarely) to 5 (Usually or Always) to show their idea about the statements in the questionnaire. These five facets were observing, describing, acting with awareness, non-judging of inner experience and non-reacting to inner experience. The facet of observing explores inner and outer stimuli like feelings, cognition, sensations, sounds, smells. Describing is related to verbalizing outer experiences and acting with awareness is having full attention and awareness in moment-to-moment experience as opposed to subconscious acting. Being non-judging of inner experience entails that a person would not be judgmental of thoughts and feelings. Being non-reacting to inner experience let the thoughts come and go without reacting to them. The range of scores in this questionnaire are 39 to 195. The sum of scores of each facet show that the higher the score, the more the mindfulness they have. The results revealed that the internal consistency between the facets were acceptable and the alpha value ranged from 0.75 (in non-reacting facet) to 0.91 (in describing facet); the correlation between facets was acceptable and significant ranging from 0.15 to 0.34. The validity and reliability of this questionnaire were tested in the Iranian setting. Test-retest correlation values of FFMQ were between 0.57 to 0.84. In addition, the alpha value was acceptable ([Ahmadvand, 2011](#)). Cronbach's alpha value of this questionnaire was 0.89.

Resilience Scale (Conner & Davidson, 2003): This questionnaire was developed by Conner and Davidson (2003) to assess the ability to resist pressure and threats. It was adapted to Iranian setting by [Mohamadi, Jazayeri, Rafiee, Joker and](#)

Porshahnaz (2007). This questionnaire had 25 items of five multiple choices each of which had a score 0 to 4 sequentially. The system of scoring was as follows: completely wrong 0, hardly ever true 1, sometimes true 2, often true 3 and always true 4. The sum of scores would be the score of the questionnaire. In another study done by Samani, Joker and Sahragard (2007), the reliability of this scale was tested based on Cronbach's alpha which was equal to 0.87. Moreover, Mohamadi, Jazayeri, Rafiee, Joker and Porshahnaz (2007) measured the reliability of this scale as 0.89 and its validity by item-total correlation scale was between 0.41 and 0.640; it is worth mentioning that Cronbach's alpha value for the present study's resilience questionnaire was 0.633.

After preparing the questionnaire, it was uploaded to porsonline website to create an online version. Then, the link of the online questionnaire was share in the social media group of Rahman Institute of Higher Education (WhatsApp and Telegram). After collecting 260 filled questionnaires, data analysis started. Multiple liner regression was used in data analysis. Also, SPSS 20 was run to do the statistical analysis.

3. Results

The present study's findings showed that Table 1

Mean and the standard deviation of the variables of the study

Variable	Mean	Standard deviation
Coronavirus Anxiety	20.63	13.38
Mindfulness (Total)	119.09	18.33
Observing	27.31	5.47
Acting with Awareness	21.43	6.08
Non-judging of Inner Experience	23.89	5.55
Description	24.95	4.08
Non-reacting to Inner Experience	21.59	3.98
Resilience	67.40	16.34

the percentages of sex of the participants were 56.5% (147 male students) and 64.5% (113 female students). The age range of 34.2% of the respondents (89 students) was 20 to 30. The percentage of the respondents with the age range younger than 20 years of age was 18.50% (48 students), the percentage of the age range between 30 to 40 was 27.3% (71 students) and the percentage of the age range older than 40 was 20% (52 students). The percentage of participants holding M.A. degree was 40.4% (105 students), which was the highest level of education. The percentage frequency distribution of the participants holding A.A. and B.A. degrees were 28.1% (73 students) and 31.50% (105 students) respectively.

The percentage frequency distribution of the participants with the following majors were as follows: Engineering with 16% (43 students), psychology with 24.6% (64 students), management with 15.8% (41 students), sports sciences with 19.20% (50 Students) and foreign languages with 23.8% (62 students).

The mean and a standard deviation of the statistical analysis of the present study is tabulated in Table 1.

As shown in Table 1., the mean for the participants with Coronavirus anxiety was 20.63. The mean for mental symptoms was higher than physical symptoms. The mean for mindfulness in participants was 119.09.

Table 2

Variable correlation matrix

	1	2	3	4	5	6	7	8
1- Coronavirus anxiety	1							
2- Mindfulness	0.057	1						
3- Observing	-.174**	.702**	1					
4-Describing	-0.073	.789**	.622**	1				
5- Acting with awareness	.280**	.651**	0.069	.318**	1			
6- Non-judging	.132*	.810**	.391**	.453**	.618**	1		
7- Non-reacting	-0.032	.713**	.570**	.645**	.196**	.390**	1	
8- Resilience	-.443**	.333**	.502**	.488**	-.166**	0.104	.445**	1

Table 2 illustrates that there is positive correlation between the average score of mindfulness and the score of Coronavirus anxiety, but they are not significant. However, among five facets of mindfulness between the facet of observing and Coronavirus anxiety there was a negative and significant correlation, ($p \leq 0.01$). There was also a positive and significant correlation between acting with awareness and Coronavirus anxiety ($p \leq 0.01$). Additionally, the correlation between non-judging of inner experience and Coronavirus anxiety was positive and significant. There was a negative and significant correlation between resilience and Coronavirus anxiety. Kolmogorov-Smirnov test was administered to analyze the normal distribution of data. The Z score for Coronavirus anxiety, mindfulness and resilience were 1.322, 1.379 and 0.841, respectively, which were not significant. This means that these variables had normal

Among sub-scales of mindfulness, observing had the highest average. The average of resilience was 67.40. Table 2 contains variable correlation matrix.

distribution. Collinearity was measured for different mindfulness facets as well as resilience as a diagnostic factor. Since correlation coefficient values between independent variables were not higher than 2.727, the possibility of having multicollinearity was not the case; that is to say, there was no multicollinearity existed between the predicting variables. In order to study independence of errors and nonlinearity between variables, Durbin-Watson statistics was employed. If the calculated values were smaller than 4, it would show the independence of errors. The value for the present analysis was 0.75 showing no statistical evidence of error. Therefore, there was no problem in using multivariate regression analysis. The results of multivariate regression analysis for the prediction of Coronavirus anxiety based on the five facets of mindfulness is presented in Table 3.

Table 3

The results of multivariate regression analysis (enter method) for the prediction of COVID-19 Anxiety through Five Facet Mindfulness

Predictive variable	Unstandardized Coefficients	Standardized Coefficients	T	P
	B	β		
Constant value	20.859		3.872	.000
Observing	-.402	-.166	-1.979	.049
Describing	-.421	-.131	-1.452	.148
Act with awareness	.623	.286	3.564	.000
Non-judging	.111	.047	.544	.587
Non-reacting	.241	.072	.882	.379
R ² = 0.120 Adjusted R ² = 0.102 P=0.000				

As shown in Table 3, 12% Coronavirus anxiety variance was revealed through two mindfulness facets. Among five mindfulness facets, describing, non-judging of inner experience and non-reacting to inner experience could not predict Coronavirus anxiety. On the other

hand, observing facet negatively and acting with awareness positively predict Coronavirus anxiety among students. The results of regression with one variance for predicting Coronavirus anxiety is shown in Table 4.

Table 4

The results of regression analysis (enter method) for the prediction of COVID-19 anxiety through resiliency

Predictive variable	Unstandardized Coefficients	Standardized Coefficients	T	P
	B	β		
Constant value	45.108		14.229	.000
Resiliency	-.363	-.443	-7.942	.000
R ² = 0.196 Adjusted R ² =0.193 P=0.000				

As seen in Table 4, 19.6% of the Coronavirus anxiety was revealed through mindfulness and strength of effect of resiliency on Coronavirus anxiety was - 0.443.

4. Discussion

The present paper aims to predict Coronavirus anxiety based on two variables

as mindfulness and resilience done on students of Rahman Institute of Higher Education. During the past two years Coronavirus pandemic has caused a lot of problems and issues around the world. All the people around the world have dealt with the anxiety aroused from this fatal disease which resulted in different outlooks and

behavior. Human beings with distinctive psychological characteristics have encountered this problem differently. Therefore, in order to do a comprehensive analysis of the effects of this disease on our mind and soul in our daily life, we have to recognize the relationship between the psychological variables and COVID 19 anxiety. According to Table 3, we could assume that the facet of observing and acting with awareness negatively and positively correlated with Coronavirus anxiety respectively; they could also predict Coronavirus anxiety. There was not a lot of research done on five facets of mindfulness and its relation to Coronavirus anxiety; consequently, it was difficult to find previous studies to compare with the present study.

These findings are in contradiction with Zarea, Kamranpour Jahromi and Chitsazi (2021). In their study, describing, acting with awareness, non-judging of inner experience and non-reacting to inner experience had a negative and significant relationship with Coronavirus anxiety. The subscales of mindfulness could predict 17% of Coronavirus anxiety variance. However, our experiment corroborates with the previous findings (Lisa et al., 2021; Saricali, Satici, Satici, Gocet-Tekin, & Griffiths, 2020; Dillard & Meier, 2021). The negative relationship observed between mindfulness and Coronavirus anxiety in the present study was also experimentally expected. It was found that high levels of mindfulness could have effect on Coronavirus anxiety. Mindfulness is paying attention to thoughts, feelings and other personal experiences moment-by-moment and without being judgmental. Generally, mindfulness can break the cycle of negative thinking empowering an

individual to deal with another; this entails paying attention to that person without considering his or her own personal habits which are affected by negative signs and personal bias toward the interpretation of another person's behavior (Baharvand & Sodani, 2020).

On the other hand, the facet of observing in mindfulness means considering all the internal and external stimuli carefully. When an individual considers only dispositional attributes such as negative feelings and thoughts, he or she can experience more anxiety. However, when an individual considers internal as well as external stimuli like sounds, smells, colors and other people's behavior, his or her focus on the internal negative feelings reduces resulting in less anxiety, which determines a negative relationship between observing in mindfulness and Coronavirus anxiety. Moreover, the results revealed that acting with awareness facet had an appositive relationship with Coronavirus anxiety. Our findings do not support the previous research in this area. In fact, it is contradictory to what Zarea, Kamranpour Jahromi, and Chitsazi (2021) stressed. They found a negative relationship in this regard. The acting with awareness facet is paying attention to the ongoing action instead of doing things automatically. When an individual is doing things with awareness, he or she is paying attention to every stage of that action; for instance, if she or he is eating food, this person is thinking about the taste, flavor and the texture of the food. Nevertheless, in the case of Coronavirus anxiety, paying a lot of attention can lead to ruminating thoughts about the existence of Coronavirus anxiety in that food. If the same person is doing something, he or she pays attention to the

fact that whether or not his or her hand has touched areas infected with Coronavirus resulting in ruminating thoughts in this regard; hence, the Coronavirus anxiety increases. Although mindfulness has a negative relationship with anxiety, it seems that acting with awareness has a positive relationship with Coronavirus anxiety, leading to more anxiety. Based on Table 3, it can be said that resilience can predict Coronavirus anxiety. This is in good agreement with Verdolini *et al.* (2021), Paredes, Apaolaza, Fernandez-Robin, Hartmann and Yanez-Martinez (2021) as well as Eyni, Ebadi and Torabi (2020). The people with more resilience are more resistant to predicaments and feel less overwhelmed by problems; consequently, life's predicaments have less harmful effect on them. Resilience is an effective resistance against challenges and threatening situations in life. Resilient people are the ones who can experience chronic stress and tension, while they can stay mentally healthy. The Resilient people are flexible problem solvers that can adapt themselves to the environmental changes. They can recover mentally after the pressure is gone. People with lower levels of resilience can barely adapt themselves to the new situation, who can slowly remedy themselves after the pressure is gone (Beheshti & Zarqam Hajabi, 2018). Resilience can reduce psychological traumas of different disease (Yoosefian, Ahadi, Keraskian & Mojmanari, 2020). Resilience is a personal, familial and social ability to confront and escape unpleasant and stressful life situations, which is not an immediate remedy, but strengthen an

individual to confront future predicaments (Khanjani *et al.*, 2018).

Based on whatever mentioned, it is certain that increasing resilience in people in critical situations like Coronavirus pandemic can really improve the situation and solve the problem. During Coronavirus pandemic we can take preventive measurements such as wearing a face mask during day and night (for a long time), following the curfew and lockdown laws, maintaining the safe distance with others and alike the performance of which was not the case in the past. Bearing this situation is difficult for human beings and requires patience and tolerance. In fact, having resilience is a valuable factor in reducing anxiety and stress related to Coronavirus pandemic. Therefore, resilient people accept these restrictions and encounter the chaotic situation better, resulting in experiencing less anxiety.

5. Conclusion

The students of Rahman Institute of Higher Education were the participants of the present study; therefore, the results could not be generalized to other settings. Another limitation regarding the present study was the administration of questionnaires alone to obtain the data.

The results showed that the mindfulness and resilience variable could predict in half of situation with regard to Coronavirus anxiety (0.493). Since there was a negative relationship between resilience and Coronavirus anxiety, investigating and determining the factors which increase the cognitive resilience in people could be connected to less Coronavirus pandemic anxiety. Consequently, it is suggested that

psychologists and counselors in students counseling centers employ the methods for increasing resilience through on-line sessions.

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Conflict of Interest

The Authors declare that there is no conflict of interest with any organization. Also, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Research Paper: Investigating the Relationship between Self-control and Perceived Social Support with Marital Intimacy among Married Female Students



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Abstract

The family is considered the first social institution created by marriage. One of the outstanding features of a successful marriage is the intimacy between spouses. The present study aims to investigate the relationship between self-control and perceived social support with marital intimacy among female students. The study was descriptive-correlational, and the statistical population consisted of married female students of Azad University, North Tehran Branch during 2018-2019. The statistical sample was selected by simple random sampling method from among 150 married female students. To collect data, Marital Intimacy Questionnaire (MIQ) and Self-Control Questionnaire (SCQ) and The Multidimensional Scale of Perceived Social Support (MSPSS) were used. Pearson correlation coefficient and Multiple Linear Regression were used to analyze the data using SPSS-23 software. It was found that a significant positive relationship exists between marital intimacy and perceived social support and self-control in married female students. Further, there is a positive and significant relationship between marital intimacy and self-control. Increasing social support and self-control can improve some aspects of marital intimacy.

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1. Introduction

The existence of healthy and constructive interactions and the establishment of love between them and expressing intimacy to each other is considered as one of the signs of human social life (Kōu & Bailey, 2017). It is based on marriage between the couples. According to Hu, Jiang and Wang (2019), a healthy marriage has several elements such as intimacy, commitment, marital satisfaction and relationship, as well as the absence of elements such as violence and infidelity. Gonczarowski, Nisan, Ostrovsky, & Rosenbaum, (2019) found that intimacy is a very valuable and important issue in marriage which contributes to the stability and strength of relationships between the couples. The study of Shahrestany, Doustkam, Rahbardar and Mashhadi (2012) indicated that intimacy makes couples' relationships more stable and stronger and increases their marital compatibility and satisfaction. The concept of intimacy has been considered as an important instrument in the dynamics of the marital relationship during recent years (Conroy et al., 2016., Ferreira, Narciso, Nova, 2013., Madanian, Syed Mansor, Bin Omar, 2012., Patrick, Beckenbach, 2009). The need for intimacy includes the need for physical closeness, bonding and contact with other people (Bagarozzi, 2013). The couples' intimacy plays an inevitable role in meeting the needs of both parties and helps maintain couples' health in various aspects of life (Prager, 2009., Reis, Franks, 1994., Ryff, Singer, 2003)., Therefore, it is necessary to conduct some research on marital intimacy due to its importance in the health and well-being of couples.

The need to establish and maintain close ties and relationships with others is

considered as a fundamental human motivation (Fathollahzadeh, Mirseififar, Kazemi, Saadati, & Navabi Nejad, 2017) Marriage between the couples shapes the family system, which is the most important social system (Nowruzi, Rezakhani, & Vakili, 2019). Intimacy is considered as one of the most important characteristics of a successful marriage while the marital relationship will be disturbed (Cao, Zhou, Fang, & Fine, 2017). Comparing the reasons for marriage in the past to that in the recent years showed that people marry their spouses today because of the need for love and intimacy and access to emotional-psychological needs (Francis, & Meyerson, 2017). Therefore, dissatisfaction with the needs can increase conflicts, reduce marital satisfaction and cause emotional and psychological problems (John, Seme, Roro & Tsui, 2017). Intimacy refers to the emotional, intellectual, social, physical, and spiritual integration into each other's lives, and most people recognize marriage as one of the most intimate relationships between adults (Levinger & Huston, 1990). An intimate relationship that includes caring, mutual trust, and acceptance can play an important role in family stability and marital relationships (Stahmann, 2004). Since establishing and maintaining intimate relationships in marriage is very important and the factors such as a person's mental health and previous experiences can overshadow it, it can still be influenced by intervention methods. "Self-control" is an internal force which allows a person to resist various temptations and thus the person can control his/her behavior in exchange for changing environmental conditions (Bandura, 2005). The low level of this trait in the individual makes it difficult for the individual to control his

impulses, leading to mental damage (Alizadeh, 2005). Psychologists found that volition is an important part of a person's personality, thus self-control, as one of the components of volition, plays an important role in determining people's behavior, and its absence results in serious problems for the person (Sheibatzaadeh & Peyavastegar, 2016).

Numerous psychosocial factors affect the quality of life of individuals, one of which is perceived social support. As one of the emotional coping mechanisms, social support has the potential to affect the quality of life (Ersoy-Kart & Gld, 2005). Understanding the support of receiving is much more important. In other words, the patient's perception and attitude towards the received support is more important than the amount of support provided to her (Helgeston & Cohen, 1996). Tracy's findings indicated that understanding social support prevents the adverse physiological effects of the disease in the individual, increases self-care and self-confidence, and has a positive effect on the physical, mental and social condition of the individual. Furthermore, it increases performance and improves the quality of life (Yu, Lee, & Woo, 2004, Chan, Molassiotis, Yam, Chang & Lam, 2004., Lee, Yae Chung, Boog Park & Hong Chung, 2004).

Social support is the degree of intimacy, companionship and attention of family members, friends and other people (Charyton, Elliott, Lu & Moore, 2009). Perceived social support is the amount of access and the individual's perception of the availability of support from others (Calvete & Connor-Smith, 2006). Understanding support for the receiver is more important. Since the person believes that when he/she

faces problems or is under pressure, there are some people who help him and thus resists against adversity with more strength (Bakhtiyari, Emaminaeini, Hatami, KhodaKari & Sahaf, 2017). However, the lack of its understanding leads to social isolation and even death (Brummett et al., 2005).

Generally, the marital relationship is considered as the closest and most emotional relationship people develop, and understanding marital intimacy is necessary for its maintenance. Accordingly, studying the related variables and explaining marital intimacy is of interest to researchers. However, the role of self-control as an individual variable and social support as a social contributing force in marital intimacy between Iranian married couples have not been addressed in the previous studies. Therefore, the present study aims to bridge this gap by combining both variables of self-control and social support in a regression model to investigate the explanatory role of the combination of two personality and social variables. Therefore, the present study aims to investigate the relationship between such variables and their explanatory role in a marital intimacy.

2. Method

The method used in this study is based on the purposeful sampling, and the design of the study is correlational. The statistical population consisted of all married female students between 20-40 years in North Tehran Azad University who were studying in the academic year 2018-2019. One hundred fifty of them were selected by simple random sampling, and the questionnaires were distributed among them. Inclusion criteria included informed

consent to participate in the study, no history of divorce, drug or alcohol addiction, and no specific mental disorder (according to participants). Additionally, the exclusion criteria included requesting to cancel filling out the questionnaires when answering and not answering 10% of the items in each questionnaire or more. The following questionnaires were administered in the present study:

Couples Intimacy Questionnaire: This questionnaire was developed by Van den Broucke, Vertommen and Vandereycken (1995), consisting of 56 items which measures five indicators of intimacy in marriage. The indicators consist of intimacy index (issues and problems related to intimacy) with 14 options; the couple agreed with 12 options and were honest with 12 options, loving each other with 8 options, and the degree of adherence to commitments with 10 options. Table 1 displays the validity of the questionnaire based on Van den Broucke et al.'s research in 1995 and Erfani-Akbari in 2008. In this study, the reliability coefficient based on Van den Broucke's opinion for each subscale was as follows: Intimacy subscale, agreement, honesty, love and affection, and adherence to commitments as 86%, 86%, 83%, 82%, and 72%, respectively. However, Erfani-Akbari (2008) found that the reliability coefficient was as follows: The subscale of intimacy, agreement, honesty, love and affection and adherence to commitments as 86%, 97%, 87%, 80% and 87%, respectively.

In this research, the total reliability coefficient was 92% as follows: intimacy, couple's agreement, honesty, love and affection, and adherence to commitments

were 69%, 84%, 67%, 83%, and 70%, respectively.

The Multidimensional Scale of Perceived Social Support: This scale was developed in 1988 by Zimet, Dahlem, Zimet & Farley. It has 12 items that measure people's perception of social support received from three sources: the family, friends and important people in life. The level of agreement of individuals was measured through Likert scale which has five degrees from strongly agree (5) to strongly disagree (1). The minimum and maximum possible scores were 12 and 60, respectively. Zimet et al (1988) reported the alpha coefficient of this questionnaire in the range of 85%-91%. In Iran, Salimi, Jokar and .Nikpour (2009) examined the validity and reliability of this scale. They found that the reliability coefficient was confirmed by Cronbach's alpha method for each dimension of 86%, 82% and 86% and the validity was confirmed by factor analysis. In addition, Cronbach's alpha coefficient of the questionnaire in this study was 92%.

Tangney's Self-control Questionnaire: This questionnaire has 13 questions aimed to measure the extent of people's control over themselves. Scoring is based on the Likert scale. The maximum and minimum scores for Tangney self-control questionnaire are 65 and 13, respectively. A high score indicates higher self-control, and vice versa. In Tangney, Baumeister and Boone (2004), the validity of this scale has been confirmed by assessing its correlation with the scales of academic achievement, adjustment, positive relationships and interpersonal skills. In addition, its reliability on the statistical sample using Cronbach's alpha test was 83%. Additionally, the value

reliability of the questionnaire in this study based on Cronbach's alpha was 69%.

To analyze the research information, SPSS software version 23 was employed. Pearson correlation coefficient and multivariate regression analysis were run to test the research hypotheses simultaneously.

Table 1

Pearson correlation coefficient of study variables

Variable	Social support	Self-control
Marital intimacy of couples	0.384**	0.162*
Intimacy	0.393**	0.127
level of agreement of the couple	0.279**	0.228**
degree of honesty	0.277**	0.154
love and affection for each other	0.294**	0.159*
Adherence to commitments	0.249	0.016

** = sig< 0.05 and * = sig< 0.05

As shown in [Table 1](#), there was a positive and significant relationship between marital intimacy and all its subscales except for adherence to commitments with perceived social support at the level of 0.01. Moreover, the results tabulated in [Table 1](#) indicated that the element of social support significantly correlated with the subscale of intimacy with the highest coefficient equaled to 0.393 and had the lowest significant correlation coefficient with degree of honesty as 0.277. As illustrated in [Table 1](#), there was a positive and significant relationship between marital intimacy of couples, subscales of marital agreement, love and affection for each other with self-control at the level of 0.05. Also, there was a positive correlation between self-control and the subscale of level of agreement of the couples at the level of 0.01. However, self-control was not significantly related to the subscales of intimacy, honesty, and commitment. In addition to the results

3. Results

To investigating the relationship between perceived social support and marital intimacy of couples and its dimensions, Pearson correlation coefficient was used, the results of which are presented in [Table 1](#).

tabulated in [Table 1](#), the variable of self-control had the highest significant correlation with the subscales of the level of agreement of the couples at the level of 0.228. It had the lowest significant correlation with love and affection for each other at the level of 0.159.

To explain the role of each predictor variable in the criterion variables (marital intimacy of couples and its subscales), multiple linear regression (enter method) was used ([Table 2](#)).

Table 2

The results multiple linear regression (enter method) of perceived social support and self-control over marital intimacy of couples

Predictive variables	R	R ²	B	SD	Beta	T	Sig
Perceived Social Support	0.359	0.129	0.714	0.170	0.328	4.191	0.000
Self-control			0.365	0.312	0.092	1.171	0.243

Table 2 revealed that perceived social support value was 0.33 which was influential in marital intimacy. However, self-control did not predict the marital intimacy of the couple. In addition, the value of R² is 0.13, i.e., about 13% of the variance of marital intimacy of couples can

be explained and predicted based on independent variables, and thus the prediction is positive and significant.

The results of regression analysis to study predictability of perceived social support on intimacy are presented in Table 3.

Table 3

The regression results of perceived social support on intimacy

Predictive variables	R	R ²	B	SD	Beta	T	Sig
Constant	0.393	0.155	27.836	1.778		15.652	0.000
Perceived Social Support			0.223	0.043	0.393	5.226	0.000

As shown in Table 3, approximately 16% of the variance of intimacy can be explained and predicted based on the perceived social support variable, and thus the prediction is positive and significant with a coefficient of 0.39.

The regression analysis was used to explain the role of predictor variables (perceived social support and self-control) in the criterion variable (couple agreement), the results of which are shown in Table 4.

Table 4

The results multiple linear regression (enter method) of perceived social support and self-control on the level of couple's agreement

Predictive variables	R	R ²	B	SD	Beta	T	Sig
Perceived Social Support	0.328	0.107	0.139	0.046	0.241	3.046	0.003
Self-control			0.185	0.084	0.176	2.218	0.028

Table 4 demonstrated that 11% of the level of agreement of the couples could be predicted by independent variables. Both predictor variables had positive and significant linear relationship. Moreover, according to Table 4, the effectiveness level

of perceived social support and self-control were 0.24 and 0.18 respectively.

Table 5 shows the result of multiple linear regression analysis of perceived social support on the degree of honesty in which self-control variable is not included

in regression analysis since it has no relationship with the degree of honesty between couples.

Table 5

The results of multiple linear regression of perceived social support on the degree of honesty

Predictive variables	R	R ²	B	SD	Beta	T	Sig
Constant	0.277	0.077	26.860	1.595		16.842	0.000
Perceived Social Support			0.135	0.038	0.277	3.535	0.001

Based on Table 5, 8% of the level of honesty variance was predictable by level of perceived social support. Additionally, the level of effectiveness of social support on the honesty subscale was roughly equal to 0.28 and was positive.

In Table 6, the result of multiple linear regression (enter method) is illustrated to determine the role of the predictor variable in the love and affection for each other subscale.

Table 6

The results multiple liner regression (enter method) of perceived social support and self-control over the level of love and affection

Predictive variables	R	R ²	B	SD	Beta	T	Sig
Perceived Social Support	0.310	0.096	0.115	0.034	0.273	3.418	0.001
Self-control			0.078	0.062	0.101	1.267	0.207

The variable of perceived social support was able to predict love and affection for each other at 0.27, while the variable of self-control could not predict love and affection for each other (Table 6). On the whole, predictor variables could predict 10% of variance of intimacy between couples.

4. Discussion

The present study aimed to investigate the relationship between self-control and perceived social support with marital intimacy among married female students of North Tehran Azad University. In this

study, it was found that there is a positive and significant relationship between perceived social support and marital intimacy of couples and all its dimensions except adherence to commitment. Therefore, the greater the perceived social support of married women, the more their marital intimacy is overshadowed and increased. Qamari, Rezakhani, & Malalo (2014) conducted a study among married people who were employed in Tehran Social Security Organization, and found that there is a negative and significant relationship between the components of perceived social support and the

components of marital boredom. In addition, Asayesh, Hesam, Ghorbani, Shariati & Nasiri, (2011) found that perceived social support by the family explains and predicts 23% of mental health changes. This is due to the importance of loving family, important people and friends in one's life. In addition, since a person spends a lot of time with other people, perceived social support can have a great impact on one's marital intimacy.

In addition, the results show there is a positive and significant relationship between self-control and marital intimacy of couples and subscales of couples' agreement, love and affection for each other. Therefore, as self-control increases, marital intimacy of couples and their agreement, love and affection for each other increase. That is, the more a person can express his/her feelings and behaviors in critical situations, the more the marital intimacy between them is affected and increased. It was found that the relative inability to control impulse leads to high-risk emotional and sexual behaviors, as well as overeating and drinking behavior in couples (Bakhtiyari et al., 2017). In addition, the relationship between self-control and marital commitment was examined, finding that men and women who scored lower on impulse control and had lower levels of inhibition were more likely to engage in extramarital affairs. In addition, it was reported that people who are more desirable to betray have more negative emotions. (Mark, Janssen & Milhausen, 2011). Brown (2001) indicated that since insecure people have the characteristic of being too involved in intimate relationships, they are dependent on others for valuable feeling. As the

weakness of self-control and control over their emotions and desires (self-control) are interfered, they can engage in emotional relationships outside the framework of cohabitation and undermine their marital commitment and intimacy.

The results of the present study showed that perceived social support could significantly predict marital intimacy of couples. However, self-control did not predict their marital intimacy. The research literature of married students is extensive in this field, including Shariati, Qamrani, Solati Dehkordi & Abbasi Molid (2010), Saemi, Besharat, AsgharnejadFarid (2019), Alahdad, Alavi, Ninggal, & Mirzaei (2014), Khazaei, Rostami & Zaryabi (2011), Tariveh, Karimi, Akbari & Moradi (2020), Ahmadian & Haghayegh (2020). Mitchell et al. (2008) identified predictors of marital intimacy as self-disclosure and self-knowledge as well as self-control.

Similarly, this research had some limitations. Time and economic constraints made this research inevitably carry out within a city and a gender. Undoubtedly, considering the wider statistical population in the case of both genders can lead to a greater generalizability of the results obtained throughout the country. Based on the studies on the title or topic of this research with its three variables, no research project has been found so far; and unfortunately, this made it impossible to compare the results with those of the previous ones. In addition, not enough research resources existed in this study. Considering the relationship between marital intimacy and perceived social support among married women, it is suggested that teaching marital life skills to couples be on the agenda of the relevant

agencies to observe the improvement of the marital satisfaction in families. Furthermore, considering the relationship between marital intimacy and perceived social support in women and practical planning for its achievement is required. It seems that despite the relative increase in the level of literacy in society, people are still not familiar with important concepts such as intimacy in married life and attribute it to satisfaction and underestimate the importance of an important factor such as intimacy. For this reason, public education at the community level is required to realize that the purpose of marriage is not just one-sided satisfaction and that more factors are involved in the couple's life. It is suggested that a separate study of each concept be performed without generalizing their meanings to help identify the details of marital life.

5. Conclusion

The results of the present study revealed that increase in the perceived social support and self-control correlated with the increase in the intimacy between couples. Moreover, perceived social support could predict the intimacy between couples. Therefore, counselors and psychologists in counselling centers should develop educational programs to teach the couples perceived social support and self-control in order to promote these traits.

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Conflict of interest

The authors declare that they have no conflict of interests.

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