



**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 (Seyedshohadaee, 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  $\lambda^2$  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

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.

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

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. Among sub-scales of mindfulness, observing had the highest average. The

average of resilience was 67.40. [Table 2](#) contains variable correlation matrix.

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

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	Standardized	T	P
	Coefficients	Coefficients		
	B	$\beta$		
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 <sup>2</sup> = 0.120	Adjusted R <sup>2</sup> = 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	Standardized	T	P
	Coefficients	Coefficients		
	B	$\beta$		
Constant value	45.108		14.229	.000
Resiliency	-.363	-.443	-7.942	.000
R <sup>2</sup> = 0.196	Adjusted R <sup>2</sup> =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 resilience 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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