P-ISSN 2664-0422	Pakistan Social Sciences Review	Jul-Sep 2024, Vol. 8, No. 3
O-ISSN 2664-0430	https://doi.org/10.35484/pssr.2024(8-III)22	[292-308]

Pakistan Social Sciences Review
www.pssr.org.pk

RESEARCH PAPER

Coronavirus Anxiety, Regulatory Emotional Self-Efficacy and Health-Related Quality of Life among University Students during Covid-19 Pandemic

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ABSTRACT

This study was conducted to explore the role of coronavirus anxiety and regulatory emotional self-efficacy as correlates and predictors of health-related Quality of Life among university students during COVID-19 pandemic. The correlational research design was used. Data was gathered from 200 participants (Males=100 & Females=100) using the purposive sampling technique. The following measures were utilized subsequently to gather the data: Demographic Information Sheet, Coronavirus Anxiety Scale (Lee, 2020), Regulatory Emotional Self-efficacy Scale (Caprara et al., 2008) and Covid-19 Impact on Quality of Life Scale (Repišti et al., 2020). The findings of the study depicts that coronavirus anxiety and perceived self-efficacy in expressing positive affect significantly correlate and predict impact on health-related-Quality of Life (QoL). In the current study, female university students showed higher level of coronavirus anxiety and impact on health-related Quality of Life whereas the male students displayed increased state of perceived self-efficacy in expressing negative affect. In order to identify the predictors of HR-QoL, hours per day news watched by students and coronavirus anxiety emerged as the significant positive predictors of Health-related QoL among university students. This indicates that number of hours of news watched by students and students with high coronavirus anxiety had a higher impact on their Health-related QoL.

KEYWORDS Coronavirus Anxiety, COVID-19 Pandemic, Health-related Quality of life, Regulatory Emotional Self-efficacy

Introduction

The outburst of the novel respiratory disease (i.e. COVID-19) in Wuhan, China, in December last year, reached to the stage of a global pandemic in March 2020, with countries all around the world being badly affected. As for August 2020, the number of cases were 19.7 million affected with COVID-19.vaccines are now being developed but the treatment is mainly to control the symptoms like treating cough and flu. Pakistan like many countries took action to minimize the magnitude of COVID-19 through taking into consideration stern methods such as lockdown, restricting traveling, social distancing and voluntary self-isolation (WHO, 2020). This global epidemic is not only being the cause of great number of deaths, but is imposing great psychological impact on people too. It is greatly influencing the lifestyle and livelihood of people across the globe and is suggested that it will continue to affect people even after the outbreak of the novel disease is over (Wang et. al, 2020).

The study is conducted on university students. There was a shift to online education from April 2020 which was initially very hard for the students to adapt with. University students have to face burden the most because of meeting deadlines, submission of lengthy assignments in short period of time, preparing for quizzes, doing final projects and giving presentations etc. All these tasks require time and full attention and if the students are facing psychological challenges due to pandemic situation, it is hard for them manage everything well and it has an influence on their well-being and quality of life. According to a study conducted in Bangladesh on university students who were home-quarantined in order to investigate the effect of COVID-19 crisis situation upon their psychological well-being and health which also highlights the importance of research to be conducted on university going students (Khan et. al, 2020).

High amount of anxiety is a natural response to any sorts of crises situation. Anxiety is an emotion which causes uneasiness and is characterized by constant worry, fear and nervousness (Johns & Hunter, 2019). It is a response to situations or events that are perceived to accompany danger. According to Sherman (2020), coronavirus anxiety is a feeling of worry that results due to the coronavirus pandemic situation and is marked with some physical symptoms such as feeling dizzy or loss of appetite. It is the fear of getting infected with the disease. There is a scale developed by Sherman A. Lee in May 2020 to identify the individuals who are experiencing fear and anxiety due to Coronavirus pandemic. It is based on the symptoms that a person would experience while having anxiety due to COVID-19 pandemic crises. According to Cognitive Theory of anxiety, anxiety is described as thinking of the worst possible scenario of a situation or exaggerating the possibilities of danger. In coronavirus pandemic situation, people who think of the worst possible scenario i.e. getting infected with coronavirus, were the ones facing coronavirus anxiety (Clark & Beck, 2010).

Giving a view to the definition of self-efficacy (Bandura, 1997), it is referred to as individuals own judgment in his/her ability to perform action in dealing or succeeding at particular situations. It is one's judgment that how well he/she can manage to deal with unknown or difficult situations. Emotional Self-efficacy is characterized by the capacity to internally control or manage emotions mainly negative emotions while facing any adverse situation. Emotional Self-efficacy helps individuals to cope up with emotions by consoling or motivating themselves. Individuals develop emotional self-efficacy in their lives through various means like social persuasion, performance outcomes and vicarious experiences. When one has high emotional self-efficacy, there less chance to be prone to anxiety as one has control over their negative emotions (Bandura, 1988). According to a study on the role of emotional self-efficacy on impacting anxiety linked to performance in mathematics, it was revealed that students showing low emotional self-efficacy displayed anxious behavior during math test performance. It indicates that self-efficacy related to control emotions is helpful in controlling negative impact of anxiety that was shown by the students (Galla & Wood, 2012).

Quality of life is regarded as the state of one's wellbeing, the extent to which one is healthy, satisfied and is able to enjoy events of life. It is multidimensional and health is one of its domain (Potter et al., 2012). According to WHO, health is not just the non-appearance of any illness but is mainly the total mental, physiological and social functioning and well-being of an individual (WHO, 2013). HR-QoL includes perceptions related to both mental and bodily health (e.g. mood or level of energy). Schipper and his fellows, in 1990s, stated the idea of Quality of life related to domain of health (Schipper, 1990). If there is any threat to health or an individual has unhealthy lifestyle, it impacts

their Quality of Life (QoL) because health is main constituent of QoL (Prosser & Corso, 2007).

According to Maslow (1987), he proposed *Theory of Needs*, according to which QoL is assessed in terms of how many levels of hierarchical needs are satisfied. In the time of COVID-19 pandemic, everyone took protective measures as they believed they could be susceptible to get infected with coronavirus. It states that they had a threat to their health with means their need of safety was not completely fulfilled, which is a lower order need. According to the theory of Maslow, if an individual is on the level of lower order needs, it suggests that their quality of life is low (Tay & Diener, 2011). The "*Centre for Health Promotion model"* has its basis on the concept that QoL is multidimensional including the domain of mental and physical health. People who experience anxiety is suggestive of the fact that their mental health is affected. Having poor mental health suggests that one's Quality of life is negatively affected due to it (Sosnowski, 2017)

Anxiety has an association with self-efficacy which was at first suggested by Albert Bandura; he observed that low levels of self-efficacy indicates the view that the individual is unable to manage an adverse or threatening situation, which leads to increase in anxiety (Bandura, 1988). Low emotional self-efficacy means that one feels he is unable to control negative emotions in adverse situation (e.g. COVID-19 pandemic) which will result in increased anxiety. Similarly, in certain other physiological diseases such as Congenital Heart disease among children and adolescents was also studied with the perspective of how this long-term illness and physical weakness experienced by this population create hindrance to their normal mental health and well-being. Their condition limits them from normal daily, school and social functioning. The resultant anxiety and stress create many emotional and behavioral issues among this population (Hamdani, Khawar, Fazaldad, Majeed, Hassan, & Munawar, 2024).

People having rising levels of self-efficacy and belief to control emotions have more capacity to manage any effects of pain or control negative emotions in threatening situations. Moreover, the control individuals believe to have on their emotions tend to influence the strategies they employ to regulate their emotions (Ford & Gross, 2018). They also exhibit long term adherence in managing negative emotions related to health or adverse situations which considerably enhances QoL (Han, Lee, Lee, & Park, 2003). It can be seen that when a person suffers from any physiological disease, it will affect his/her quality of life and develop psychological distress among them. If the psychological flexibility is high then it will play an important role in maintaining a better quality of life and decreasing emotional distress. That is why it is very important to know how to cope with disease so that the quality of life will be maintained (Hussain, Khawar, Amin, Hamdani & Majeed, 2023).

A research on HR-QoL and the elements linked with it, on university students who are not graduates revealed that students of university of age range 18-25 are in their transition period of adulthood. It is important for the health authorities to know their HR-QoL as factors affecting it can leave a negative impact on their long-term health and ability to work (Nur, Kıbık, Kılıç, & Sümer, 2017).

Literature Review

Islam, Barna, Raihan, Khan and Hossain (2020), conducted research study on university students of Bangladesh who were experiencing anxiety and depression during corona times. The aim was to explore the presence of depression and anxiety among the university going students during the pandemic of COVID-19. Sample of total

478 university students were selected for the study using snowball sampling technique who took part in this online-based survey. Findings of the study depicted that 18.1% students were intensely suffering from anxiety. COVID-19 pandemic created a chaotic situation which resulted in psychological and emotional challenge for students.

A research study was conducted on effect of COVID-19 on psychological well-being of wide-ranging inhabitants of Pakistan. Factors associated with low and high mental well-being in general population of Pakistan was explored. Data from 1,756 participants (almost 50% males and 50% females) was collected using online survey. World Health Organization (WHO-5) Well-being Index of Urdu and English version was utilized for assessing well-being. It was found out that 41.2% of the participants had poor well-being and was higher in female population, people who had fear of getting infected with coronavirus and people having chronic illness. Almost 68% of the participants had fear or getting infected with the disease. It was also found out that watching news related to coronavirus increased fear of the disease among people (Khan et al., 2021).

A study was conducted on university students of Pakistan to assess psychological impact due to COVID-19 pandemic. Responses of 1134 participants using web-based survey were included in the study. Findings of study reveal that 34 percent of participants had moderate to severe anxiety and 45 percent of participants had moderate to severe depression. It was also found that participants below the age of 30 years had higher depression that participants of age above 30. Anxiety and depression scores were higher in females than males. Fast spread of coronavirus and its adverse effect on daily lives of participants was main source of distress among them (Salman et al., 2020).

A research was conducted on studying association of self-efficacy, depression and quality of life amongst students. A total sample of 269 students who were not graduated was selected for the study. 81 percent of students among the sample comprised of girls and 19 percent comprised of boys, with age ranging from 18-28 years. Self-efficacy was measured using GSE scale and Qol was measured using WHO Qol-BREF-Malay scale. Findings revealed that there is a potential part of self-efficacy in mediating effects of depression on mental health which resultantly improves QoL of students (Mukhtar & Hashim, 2010).

Moreover,another research study was conducted in China which aimed on evaluating HR-QoL during pandemic COVID-19. Online survey was held in which 1500 questionnaires were distributed to participants via social media. 1139 responses of participants were used in the study and rest were screened out on the basis of exclusion criteria.HR-Qol was assessed using Chinese version of EQ-5D which is self-report measure for valuing and stating of health states of individuals. Findings revealed that HR-Qol of individuals were negatively affected. Some factors played a role in affecting HR-Qol with 19% respondents reported problem of pain/discomfort and 17.6% reported problem of anxiety/depression (Ping et al., 2020).

It is impacting people's lives in many ways. There is loss of employment, student's academic career is being affected, lack of resources, fear of getting infected, threat to people's health, etc. All these factors are resulting in affecting people's mental health. There is a growing research on the impact of pandemic COVID-19 but at present there is lack of exploration in Pakistan on its impact on university students. Students had to face many psychological challenges due to this pandemic. It was a common observation that students were unable to focus on academics due to fear of getting infected with coronavirus. Previous researches have been conducted on anxiety, stress and depression among students due to Covid-19 There is a gap in research on the impact

of coronavirus anxiety on HR-QoL and how high emotional self-efficacy of students can help reduce coronavirus anxiety and improve QoL.

This study focuses on investigating the association between Coronavirus anxiety and Regulatory emotional self-efficacy with HR-QoL among the university students during the pandemic, as it is essential to investigate the psycho-social experiences of university students, so that in future if there comes any situation of pandemic, strategies could be developed by health professionals to improve HR-Qol of students. University students are in the period of transition to adulthood so their HR-QoL is a high concern. There should be awareness raised on HR-QoL of students because university students have to face a lot of burden and COVID-19 has worsened the situation for students as there is a shift to online education system which was initially hard for students to adapt with.

Hypotheses

1. There is a significant correlation between Coronavirus anxiety, Regulatory Emotional self-efficacy and Quality of Life among university students in COVID-19 pandemic.

2. Coronavirus anxiety and Regulatory Emotional self-efficacy will be likely to predict Health-related QoL among university going students in COVID-19 pandemic.

3. There are gender differences in the levels of Coronavirus anxiety, Regulatory Emotional self-efficacy and Health-related QoL among university students in COVID-19.

Material and Methods

Research Design

It is a quantitative methodological study in which correlational research design was selected as the study aims to find out the association between Coronavirus Anxiety, Emotional Self-efficacy and HR-Qol among university going students in COVID-19 pandemic.

Participants and Sampling technique

A total sample of N=200 participants, 100 female and 100 male university students of 18-24 years of age range (M age = 21.15, SD = 1.16) was recruited. Purposive sampling technique was selected in order to gather the data from participants. Data was collected from 29 different universities of Pakistan (52=Government, 60=Semi-government and 88=Private). Participants who were currently enrolled university students of age range 18-24 years were included in the study. Those students who are taking online classes were included in the sample. Participants who are doing undergraduate program were added in the study. However, Participants who had a history of anxiety or any mental illness/disability were not included in the study. Those who had any physical illness/disability remained excluded in the study. Married students were excluded. Participants who had suffered from Coronavirus were not included in the study and whose first family member/s suffered from Coronavirus were also excluded from the study.

Table I
Demographic Characteristics of the Sample

Variable	M(SD)	f(%)
Gender		
Male		100(50)
Female		100(50)
Age	21.15(1.16)	
18-21		123(61.5)
22-24		77(38.5)
University		
Government		52(26)
Semi-Government		60(30)
Private		88(44)
Education Level		
Matriculation / O levels		0(0)
Intermediate		0(0)
Undergraduate		200(100)
Masters/ MPhil		0(0)
Marital status		
Married		0(0)
Unmarried		200(100)
Diagnosed with medical problem/ psychological illness		
Yes		0(0)
No		200(100)
Precautions followed during COVID-pandemic		
Followed all SOPs		65(32.5)
Followed 2-3 necessary SOPs		100(50.0)
Wore mask		15(7.5)
Stayed at home		12(6.0)
Followed no precautions		8(4.0)
Days stayed at home during COVID-pandemic		
50 days or less		35(17.5)
100 days or less		59(29.5)
150 days or less		45(22.5)
200 days or less		29(14.5)
250 days or less		21(10.5)
300 days or less		6(3.0)
350 days or less		0(0)
400 days or less		5(2.5)
Hours per day news watched		
0-4 hours		144(72)
5-9 hours		31(15.5)
10-14 hours		21(10.5)
15-19 hours		4(2)
Participant suffered from Coronavirus		
Yes		0(0)
No		200(100)
Participant's family member/s suffered from Coronavirus		
Yes		0(0)
No		200(100)

Operational and conceptual Definition of Variables

Coronavirus Anxiety

Coronavirus Anxiety refers to the dysfunctional anxiety in people caused due to pandemic and the fear of getting infected by the disease (Lee, 2020). Scores attained by the participants on Coronavirus Anxiety Scale was used to define coronavirus anxiety.

Regulatory Emotional Self-efficacy

RESE denotes to the one's perception regarding his/her capability towards managing and expressing emotional experiences which involves both negative and positive affect. Scores obtained by the participants on Regulatory Emotional Self-efficacy Scale defined the emotional self-efficacy (Caprara et al., 2008)

Health-related Quality of Life (QoL)

COVID-19 Influence on QoL is referred as impact of pandemic on the quality of life of individuals which covers the domain of mental and physical health as well. Scores achieved on COVID-19 Impact on QoL (COV19-Qol) Scale was utilized to define HR-QoL (Repišti et al., 2020)

Measures

Following are the means that will be used for the study:

Demographic Sheet

It is the first section consisting of demographic information that the participants filled before filling out the survey. It included information regarding age, gender, university, educational level, marital status, about any mental or physical illness/disability, precautions followed during COVID-19 pandemic, numbers of days stayed at home during pandemic, no. of hours of news watched and whether participant or his/her family member/s suffered from coronavirus or not.

Coronavirus Anxiety Scale

It is a self-reported test containing 5 items. It was developed by Sherman A. Lee (2020) for the purpose of screening mental health and was designed very efficiently to help researchers and health care professionals know the cases of anxiety related to COVID-19 crises situation. Each item of Coronavirus Anxiety Scale carries a definite psychological anxiety reaction to thoughts or information related to COVID-19. It is 5-point scale in which 0 denotes experiencing the anxiety symptoms "Not at all" and 4 denotes experiencing the anxiety symptoms "Nearly every day over the past two weeks". The cut off score ≥9 classifies individuals having dysfunctional anxiety with sensitivity=90% and specificity=85%. This scale depicts the reliable Cronbach alpha value of 0.92. The Coronavirus Anxiety Scale is appropriate for this study as anxiety related to coronavirus pandemic has to be assessed.

Regulatory Emotional Self-efficacy Scale

It is a self-rated measure devised by Caprara et al. (2008) and consists of 12 items rating on the 5 point Likert scale. It is assesses the regulatory emotional self-efficacy and consists of 2 sub dimensions i.e. perceived self-efficacy in conveying positive affect (POS) and negative affect (NEG), which has further two dimensions: managing anger and managing despondency. In the studies, Cronbach alpha coefficient value came to be .78 for POS and .75 for NEG.

COVID-19 Impact on QoL Scale

It is a self-rated scale and focuses on measuring the effect of pandemic coronavirus on HR-QoL of individuals in relation to mental health (Repišti et al., 2020).

This scale is not for diagnosis purposes. This scale has 6-items with 5-point Likert scale. In it 1 stands for "Completely disagree" and 5 stands for "Completely agree". Cronbach alpha value was 0.885 for non-clinical sample and 0.856 for clinical sample. There are positive correlations between the items of this scale. This scale is best suited for this research as it can be applied to general public and the study focuses to assess HR-Qol in COVID-19 pandemic. The minimum score of all items can be 6 and the maximum score obtained can be 30. Calculation of total score is done by adding the score of all statements and then dividing by number of items i.e. 6. The average of all rated items will be the total score which is compared with 5-point scale. The higher the score, the more it has impact on the QoL. Scores of each item can be analyzed separately as well.

Procedure

Permission was assessed from Kinnaird College for Women to conduct the study. Then an e-questionnaire form was formulated using the Google Forms and online-based platform was selected for the distribution of e-questionnaire to students of different universities using snowball sampling. Questionnaire had four sections; first was demographic sheet and rest every section had a items of a separate scale. Three scales were used, Coronavirus Anxiety Scale (CAS), Regulatory Emotional-Self efficacy scale (RESE) and COVID-19 Impact of QOL scale. Data was collected online due to corona situation to assure safety of the researcher and the participants. There was a consent form attached in the beginning of the questionnaire in which the participants were inquired regarding to make sure that they were participating voluntarily. Briefing regarding the purpose of the study was also included in the consent form and participants were given the right to stop continuing taking part in the study at any point. They were assured that their confidentiality will be maintained. Those participants fulfilling the inclusion criteria, their responses were incorporated in the study. The responses were monitored as they were coming and the ones that were not falling in the inclusion criteria were deleted immediately. Data was collected from 100 male and 100 female students that fell under the inclusion criteria.

Ethical considerations

Before conducting the research, permission was taken from the educational institute. Consent was gathered from the participants and they had the right to withdraw from study at any moment. Briefing was given regarding the purpose of the study and the queries were addressed by providing contact information so they can contact in need to know something. Confidentiality and privacy of the participants was maintained.

Results and Discussion

The following analyses were run upon the data collected to support the study objectives and hypothesis. Findings in table II below, propose that the values of skewness and kurtosis fall within the acceptable range of ±1.96, representing that the distributions are approximately normal. Cronbach alpha values for all scales are also documented.

Table 2
Psychometric Properties of Major Study Variables in the Sample (N = 200)

Variables	k	M	SD	a	Range	Kurtosis	Skewness
CAS	5	8.15	3.11	.75	0-20	-0.18	0.82
POS	4	14.51	3.67	.78	4-20	-0.47	-0.48
NEG	8	22.87	5.77	.75	8-40	-0.65	-0.02

HR-QOL	6	18.66	5.39	.85	1-5	-0.64	-0.04

Note: *k* = No of items, *a* = Cronbach alpha, *M* = Mean, *SD* = Standard Deviation, CAS= Coronavirus Anxiety, POS = Perceived Self-efficacy in Expressing Positive Affect, NEG = Perceived Self-efficacy in Expressing Negative Affect and HR-QOL = Health-related Quality of Life

For finding the correlation, Pearson Product Moment correlation was run to examine the nature of the relationship of Coronavirus Anxiety and two dimensions of Regulatory Emotional Self-efficacy with Impact on Health-related Quality of life among university students. The findings depicted in table III shows that there is highly significant positive but moderate association between Coronavirus Anxiety and Impact on Health-related Quality of life. This indicates that students who have higher level of Coronavirus anxiety have higher level of impact of HR-QoL. Similarly, a highly significant negative relationship between Perceived Self-efficacy in expressing Positive Affect with Health-related Quality of life was analyzed. This means that the university going students depicting greater level of perceived self-efficacy in expressing positive affect will have lower level of effect on Health-related quality of life. Moreover, results show no relationship between Expressing negative affect and effect on HR-QoL.

Table 3
Pearson Product Moment Correlation Coefficient between all variables of study (N=200)

Variables	*1*	*2*	*3*	*4*	*M*	*SD*
1. Coronavirus Anxiety	------	-.27***	.10	.38***	1.63	.62
2. Expressing Positive Affect		-------	.14*	-.26***	3.63	.92
3. Expressing Negative Affect			-------	-.12	2.86	.72
4. Health-related Quality of Life				-------	3.11	.90

Note: M=Mean, *SD*= Standard Deviation *p<.05. **p<.01.***p<.001

To identify the predictors of HR-QoL, Multiple Hierarchical Linear regression was administered displayed in the table IV below. The demographic variables such as gender, precautions followed during pandemic COVID-19, hours of news watched each day during COVID-19 pandemic and how many days the participant stayed at home were entered as covariates in the first model. Furthermore, Coronavirus anxiety was entered in the second model as a predictor variable. Moreover, 2 dimensions of Regulatory Emotional Self-efficacy i.e. Perceived Self-efficacy in expressing positive affect and Perceived Self-efficacy in expressing negative affect comprised the third model as its predictor variables. Health-related Quality of life (HR-QoL) was the outcome variable.

All the respective assumptions were met and observed for the test. None of the significant cases were detected in the data.

In model I, four covariates (gender, precautions followed during COVID-19 pandemic, hours of news watched per day during COVID-19 pandemic and how many days the participant stayed at home) were entered and the regression model turned out to be non-significant, R^2= .037, F (4, 195) = 1.88, p = .116. For the second model, coronavirus anxiety was entered as a predictor variable along with four covariates that were entered in model I, and the regression model was reported as significant, R^2=.157, F (5, 194) = 7.21, =,.001. By excluding the effect of Model 1 from Model II, the model still remained significant ΔR^2 =.12, F (1, 194) = 27.5, p = <.001. In model III, two dimensions of RESE were entered along with the effect of four covariates and coronavirus anxiety, and

the regression model was significant, R^2=.201, F (7,192) =6.89, p = <.001. By excluding Model I and Model II effects from Model III, regression model stayed significant ΔR^2= .04, F (2, 192) = 5.29, p = .006.

Altogether the predictors under study, hours per day news watched by students and coronavirus anxiety emerged as the significant positive predictors of Health-related QoL among university students. This indicates that number of hours of news watched by students and students with high coronavirus anxiety had a higher impact on their Health-related QoL. Perceived Self-efficacy in expressing positive effect emerged as a significant negative predictor of impact on Health-related QOL among university students which indicates that students who have higher level of perceived self-efficacy in expressing positive affect have lower level of impact on Health-related QOL.

Table 4
Multiple Hierarchical Linear Regression

Predictors	ΔR^2	β
Step I	3.7%	
Gender		.06
Precautions followed in COVID-19 pandemic		.01
Days stayed at home		.04
Hours per day news watched		.18*
Step II	12%	
Coronavirus Anxiety		.37***
Step III	4.4%	
Expressing Positive Affect		-.15*
Expressing Negative Affect		-.13
Total R^2	20.1%	

Note: [a]coding for gender (Male = 1; Female = 2), [b] coding for precautions followed in Covid-19 pandemic (Followed all SOPs =1, Followed 2-3 necessary SOPs =2, Wore mask = 3, Stayed at home = 4, Followed no precautions = 5).

*p<.05. **p<.01.***p<.001.

Table V below displays the Independent sample t-test results, which was used to analyze gender differences in Coronavirus Anxiety, two dimensions of RESE and Impact on Health-related QoL in university students during COVID-19 pandemic. The results reveal significant gender differences in coronavirus anxiety. This means that female university students experience more coronavirus anxiety than male students. There are significant gender differences in Perceived Self-efficacy in expressing negative affect, with males having high level of perceived self-efficacy in expressing negative affect. There is significant gender difference in impact on Health-related QoL showing females students to have more impact on Health-related QoL during pandemic COVID-19. Moreover, there were no significant gender variances in perceived self-efficacy in experiencing positive affect.

Table 5
Independent Sample t-test

	Males		**Females**				**95% CI**		
Variables	**M**	**SD**	**M**	**SD**	**t(df)**	**p**	**LL**	**UL**	**Cohen's d**
CAS	1.51	.58	1.74	.64	-.2.65(198)	.009	-.40	-.06	0.38
POS	3.55	.94	3.70	.90	-1.09(198)	.274	-.40	.11	0.16
NEG	2.96	.68	2.75	.74	2.10(198)	.037	.01	.41	0.29

HR-QOL	3.06	.93	3.16	.87	-.84(198)	.402	-.36	.14	0.11

Note: Males = 100; Females = 100 ; *M* = mean; *SD* = standard deviation; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit; CAS= Coronavirus Anxiety scale, POS = Perceived Self-efficacy in Expressing Positive Affect, NEG = Perceived Self-efficacy in Expressing Negative Affect and QOL = Impact on Health-related Quality of Life *p<.05. **p<.01.***p<.001

Discussion

Correlate and predictor of Health-related Quality of Life

The formulated hypothesis i.e. coronavirus anxiety has a significant relationship with Impact on Health-related QoL was accepted. The results showed that Coronavirus anxiety emerged as a positive correlate and predictor of Impact on Health-related QoL. It indicates that students having coronavirus anxiety had an impact on their health-related QoL. Results of previous studies are also in line with current results. Findings from a study depicted that COVID-19 impacts the mental health of people and caused mental disturbance which in result affected their quality of life (Al Dhaheri et al., 2021). Anxiety symptoms greatly impair functioning in several areas including health and social functioning thus lowering quality of life (Mendlowicz, 2000).

From the analysis of a cross-sectional study, conducted in Vietnam, revealed that COVID-19 had an influence on mental health of the health-care workers, reporting them of suffering with anxiety and depression as being the prevalent problems (Manh Than et al., 2020). Coronavirus anxiety includes the fear of getting infected with coronavirus so a study reported a significant positive relationship between perceived fear of Coronavirus with deteriorating QoL and emergence of burnout symptoms. Individuals having perceived fear of COVID-19 virus infection had lower quality of life and experienced burnout symptoms as well (Abdelghani et al., 2020)

According to a study, it was indicated that Coronavirus stress caused anxiety related to Coronavirus among students, mothers and teachers. It revealed a significant relationship between stress and anxiety related to coronavirus anxiety with health-related QoL depicting lower level of physical and psychological health- related QoL (Hawash et al., 2021). A systematic study on South Asian countries by Banerjee et al., (2020) revealed that everyday fear related to coronavirus was found in people and it affected their psychosocial health and well-being thus having an impact on their quality of life.

Relationship between study Variables

RESE scale covered two dimensions i.e. Perceived self-efficacy in expressing positive affect and negative affect. An individual with high emotional self-efficacy expresses positive affect and manages negative affect. In the current study, perceived self-efficacy in expressing positive affect has a significant negative relationship with impact on health-related quality of life. It revealed that university students who had greater perceived self-efficacy in voicing positive affect had lower impact on their health-related QoL.

Studies from literature resonates with the current study. The regulation of positive emotion such as experiencing and expressing positive affect are linked with greater health, improved quality of life, better social relationships and success in occupation (Lyubomirsky, King, & Diener, 2005). A study revealed that conscientious

people show more positive affect and are better at regulating it. These people have increased self-efficacy beliefs which were related with higher level of quality of life experienced by these people suggesting that people having high levels of self-efficacy in expressing positive affect, will have lower negative impact on their quality of life (Maddux & Volkmann, 2010). Moreover, positive psychological dimensions predicts overall health-related QoL (Freire & Ferreira, 2016).

In the current study Perceived Self-efficacy in expressing negative affect does not have a significant association with Impact on Health-related QoL. It is not in line with the previous researches. Self-efficacy for controlling negative thoughts and emotions mediates quality of physical and psychological health (Crellin et al., 2014). Results of a study showed that self-efficacy in both positive and negative emotion regulation contribute to high quality of life (Pocnet et al., 2017).

Gender Differences in study Variables

The current study showed significant gender differences in coronavirus anxiety, NEG and health-related QoL when independent sample *t*-test was run. Level of coronavirus anxiety and impact on health-related QOL was higher among female university students. It is supported by previous studies. A study assessing psychological impact of COVID-19 revealed that anxiety and stress related symptoms were higher in females, students and healthcare workers (Alkhamees et al., 2020). Compared to males, females are more vulnerable to stress and anxiety, and surrounding stressors acts as a trigger for them more than males (Wang et al., 2020; Mazza et al., 2020).

In this study, there was more impact on health-related QoL among females meaning that females have lower level of health-related QoL. It is in line with previous researches as results of a study showed that girls scored less than boys on self-reported health (Nygren et al., 2012). In a study conducted by Mikkelsen et al., (2020) on adolescents, it was revealed that as compared to boys, girls reported lower levels of health-related QoL. Findings of a Norwegian study indicated that as compared to boys who reported higher self-esteem, mean scores of girls on all areas of stress and emotional states were significantly higher (Moksnes et al., 2010).

In the current study, perceived self-efficacy in expressing negative affect was more in male participants. It can be explained through social role theory that gender stereotypes are formed in a society (Doherty & Eagly,1989). A female has to take care of the family and is more nurturing and warm. Whereas a male is the breadwinner of the house which makes him more assertive. By being more assertive, it is a social expectation from them to control and regulate their emotions whereas females express tender emotions freely (Eagly & Steffen, 1984). Findings of a study suggests that as compared to males, females are more emotionally reactive to negative stimuli (Gardener et al., 2013). A study using fMRI data revealed that during regulation, men showed less activity in prefrontal regions of brain and of amygdala activity, it showed greater down-regulation. These findings concluded that men are more efficient in negative emotion regulation than women (McRae et al., 2008).

Conclusion

The current research has been able to cite evidence that coronavirus anxiety is the significant positive predictor of impact on health-related QOL and perceived self-efficacy in expressing positive affect emerged as significant negative predictor of health-related quality of life. A negative relationship has been found between perceived self-efficacy in

expressing positive affect and impact on health-related quality of life revealing that students having high self-efficacy in expressing positive affect have lower impact of their health-related QOL. Further analysis has shed light on female population having more coronavirus anxiety and influence on health-related QOL although males having more perceived self-efficacy in expressing negative affect.

Limitations and suggestions

This study used self-reported questionnaires which might have caused some respondent bias. Due to lockdown and closing of universities due to COVID-19, online survey was used. It limited to reach the students having no access to social media. A non-probability sampling technique i.e. purposive sampling strategy was used in the study in which sample size of different universities could not be adjusted. Probability sampling technique could be used such as stratified sampling as population is divided into subgroups and sample represents every subgroup equally. In the study, participants can be distinguished with having clinically significant anxiety with score of ≥20 on Coronavirus Anxiety Scale from those participants who had anxiety but were not were not disabled by COVID-19 pandemic.

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