Research Article　　　　　　　　　　　　　　　　　　　　　　　　**Open Access**

The relationship between COVID-19 fear and anxiety with the quality of life of students in Sulaymaniyah, Iraq

Emran Ali Moloud [1], **Mohammad Farough Pargal** [2], **Akram Qadir Rashid** [3], **Hiva Osmani** [4], **Pegah Dalvand** [5], **Shahin Mehrnezhadi** [6], **Vajiheh Baghi** [7*]

[1] Faculty of Nursing and Midwifery, Kurdistan University of Medical Sciences, Sanandaj, Iran

[2] Faculty of Nursing and Midwifery, Islamic Azad University of Sanandaj, Sanandaj, Iran

[3] Lab Assistant & Researcher, Sulaymaniyah, Kurdistan Region, Iraq

[4] Student Research Committee, Kurdistan University of Medical Sciences, Sanandaj, Iran

[5] Department of Mathematics, Shahrood University of Technology, Shahrood, Iran

[6] Kurdistan University of Medical Sciences, Sanandaj, Iran

[7] Be'sat hospital, Kurdistan University of Medical Sciences, Sanandaj, Iran

[*] **Corresponding author:** Vajiheh Baghi. Be'sat hospital, Kurdistan University of Medical Sciences, Sanandaj, Iran
Email: Arojlinza@gmail.com

Abstract

Background: The outbreak of the COVID-19 pandemic led to mental disorders and a negative impact on people's quality of life. Due to the closure of universities and the shift to virtual classes, students experienced significant fear and anxiety.

Objective: The aim of this study was to investigate the relationship between fear and anxiety and students' quality of life during the COVID-19 pandemic.

Methods: This descriptive correlational study included 304 students in Sulaymaniyah, Iraq, in February and March 2021. Participants were selected using convenience sampling, and data were collected using a sociodemographic form, the Fear of COVID-19 Scale (FCV-19), the Corona Disease Anxiety Scale (CDAS), and the COVID-19-Impact on Quality of Life (COV19-QOL) scale.

Results: The mean age of the participants was 20.61 ± 3.53 years. Students had high levels of fear and moderate anxiety towards COVID-19, and this pandemic had a moderate impact on their quality of life. The mean score of all variables was significantly higher in girls than in boys. There was a significant relationship between quality of life and fear and anxiety, such that an increase of 1 point in quality of life was associated with a 0.27- and 0.35-point decrease in fear and anxiety, respectively.

Conclusion: There is a significant relationship between fear and anxiety and students' quality of life. Providing training classes on anxiety and fear control can improve their quality of life.

Keywords: Fear, Anxiety, Quality of life, COVID-19, Student.

Introduction

COVID-19 was first reported in China in late December 2019, and before long, it infected other countries around the world and became a global pandemic.[1] The first case of COVID-19 in the Kurdistan Region was reported on March 1, 2020, and people and authorities in the region are still fighting this disease.[2] In addition to the risk of death from the new virus, COVID-19 imposes an intolerable burden on both governments and societies.[3] As a result of the rapid spread of COVID-19, lack of effective treatments, and high COVID-19 mortality rates, people are more vulnerable to anxiety, fear, and mental disorders during the COVID-19 pandemic.[4-6] The risk of catching the virus, fear of losing loved ones, shortage of effective treatments, isolation at home, and loss of job during the pandemic have made people prone to fear, mental

problems, and even suicide.[7,8] The prevalence of any contagious disease is accompanied by anxiety, fear, stress, and other mental problems.[9,10] Similar to previous outbreaks, including those of SARS and MERS, people experienced PTSD and higher levels of fear and anxiety during the COVID-19 pandemic.[11,12] These symptoms have been observed during the COVID-19 pandemic; for example, it was found in a previous study that about 24.9% of participant students had experienced fear of COVID-19. When fear of COVID-19 becomes excessive, it can lead to personal (e.g., phobia) and social (e.g., panic buying) problems.[13]

Several studies have found that during the COVID-19 pandemic, more than half of students suffered depression and anxiety symptoms, and that the negative effects of COVID-19 may be worsened by fear and anxiety. Since health measures have primarily focused on the physical aspects of COVID-19 prevention and treatment,[14,15] unfortunately, the psychosocial aspects of the disease have not been adequately studied.

All these adverse consequences can reduce the quality of life (QOL).[16] QOL refers to one's perception of life and personal goals, values, standards, and interests.[17] Students, like other groups in society, have been impacted by COVID-19 and its detrimental implications.[18] During the pandemic, students' QOL was greatly impacted by their dissatisfaction at the loss of their typical study schedule and their fear of contracting the virus in high-risk locations.[16] The rapid transmission of COVID-19, social distancing, quarantine, and delay in the opening of schools and universities around the world have all contributed to reducing the QOL of students by impacting their mental health.[3]

Objectives

Based on the information provided above and considering the current circumstances, the primary objective of the present study is to investigate the impact of COVID-19 fear and anxiety on the quality of life (QOL) of students in Sulaymaniyah, Iraq.

Methods

Design and sample

This is a descriptive correlational study conducted on students in Sulaimaniyah, Iraq, in February and March 2021. The study sample consisted of 304 students selected through the convenience sampling method from four universities: Komar University of Sciences and Technology, Sulaimanyah University, the University of Human Development, and the Polytechnic University of Sulaimaniyah. The sample size was calculated using the following formula: $N = (\frac{Z_{1-\alpha/2}+Z_{1-\beta}}{0.5 \ln\frac{1+r}{1-r}})^2 + 3$, with a confidence interval of 95% and a correlation coefficient of r=0.3. The inclusion criteria were a willingness to participate in the study and study at the universities in Sulaimaniyah. Incomplete questionnaires were excluded from the analysis.

Sociodemographic form

This form included information such as age, gender, and comorbidity (underlying diseases).

Fear of COVID-19 Scale

The Fear of COVID-19 scale (FCV-19) was designed by Ahorsu et al. (2020) and includes seven items (e.g., "I cannot sleep because I am worried about getting COVID-19"), scored on a 5-point Likert response ranging from 1 (strongly disagree) to 5 (strongly agree). The scale has both English and Persian original versions. The possible scores of this scale vary between 7 and 35, and a higher score indicates greater fear of COVID-19.[19] The internal consistency (Cronbach alpha=0.82) and stability (ICC=0.72) of the Persian version of this scale have been confirmed.

Corona Disease Anxiety Scale (CDAS)

Alipour et al. (2020) created the Corona Disease Anxiety Scale (CDAS) in Iran.[20] This scale consists of 18 items (e.g., "Thinking about COVID-19 makes me anxious"), with 4-point Likert response options ranging from 1 (never) to 4 (often). A higher score indicates more anxiety. In this study, we obtained permission from the tool designer and translated the Persian version into Kurdish before using it. Cronbach's alpha coefficient for the Persian version was 0.919.

COVID-19–Impact on Quality of Life (COV19-QoL) Scale

Repiti et al. (2020)[21] created the COV19-QoL scale, which has now been translated into Persian. The scale consists of six items with 5-point Likert answer options (strongly

agree to strongly disagree) that indicate the greater impact of COVID-19 on life. A higher score indicates a greater impact.

Statistical analysis

Data analysis was performed with SPSS (version 16.0, SPSS Inc., Chicago, IL, USA) to describe the sociodemographic variables. Frequency, percentage, mean, and standard deviation were used to describe the variables. Shapiro-Wilk tests were used to assess the normality of all continuous data. Independent t-tests and one-way analysis of variance were used to compare quantitative data in two groups and more than two groups, respectively. The chi-square test was used to examine the relationship between qualitative data. Pearson correlation was used to examine the relationship between quantitative data, and stepwise multiple regression was used to determine important predictors of COV19-QoL. A P-value less than 0.05 was considered significant.

Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki. Institutional Review Board approval was obtained. All students signed an informed consent form.

Results

The participants were 304 students with a mean age of 20.61±3.53 years. Of the participants, 61.8% were women. The mean age of boys was higher than that of girls (21.31±4.72 vs. 20.07±2.70, p<0.004). Twenty-four students (7.9%) had comorbidities. Due to the limited demographic data, a tabular section was not designed for this section.

When the distribution of the scores from the scales was examined, it was seen that the mean total score obtained from the FCV was 14.34±6.89 (out of 35), the mean score obtained from the CDAS was 30.55±10.71 (out of 72), and the mean score obtained from the COVID-19 QoL was 14.81±6.46 (out of 30). As a result, students experienced severe fear and considerable anxiety, and the pandemic had a moderate impact on their quality of life. Girls had more fear (p=0.001) and anxiety (p=0.001) than boys, and their quality of life (p=0.038) was more affected. There was also a significant relationship between quality of life scores and anxiety and fear of COVID-19, such that with increasing scores of anxiety and fear of COVID-19, quality of life scores increased by 0.27 (p<0.0001) and 0.35 (p<0.0002), respectively [Table 1].

Table-1. Relationship between quality of life and anxiety, fear and demographic variables

Variable	Estimate	SE	P-value
Gender			
Female	1.510	0.464	0.001
Male	-*	-	-
Comorbidity			
Yes	0.685	0.815	0.401
No	-	-	-
Self-medication			
Yes	-0.408	0.527	0.439
No	-	-	-
Age	0.002	0.063	0.976
Anxiety	0.269	0.040	<0.0001
Fear	0.346	0.063	<0.0001

*Reference category

Discussion

The aim of this study was to investigate the relationship between fear and anxiety caused by COVID-19 and students' quality of life. In our study, it was found that there is a significant relationship between fear and anxiety and students' quality of life, such that as fear and anxiety increase, quality of life decreases, which is consistent with the findings of Parisod et al.[22] In this regard, the study by Maflib et al.,[16] which assessed the quality of life and social support among students during the COVID-19 epidemic,

showed that anxiety and stress caused by COVID-19 have a significant negative correlation with students' quality of life scores. Additionally, a study on the general population of Saudi Arabia found that fear of COVID-19 reduces mental well-being and quality of life.[23] Given that the COVID-19 epidemic has affected people of all genders, occupations, and age groups, it can be expected that the psychological distress created during this period will negatively impact various aspects of people's quality of life.

The results showed that the mean score of fear and anxiety related to COVID-19 and quality of life in girls was higher than in boys, indicating that girls have more fear and anxiety than boys and their quality of life was more affected by COVID-19 than boys. The findings of a study conducted in Cuba revealed that the prevalence of fear of COVID-19 was higher among women than men, which is in line with the present study's results.[24] Many studies in the literature have reported similar results.[25-27] Various previous studies on the general population have all shown that the fear of COVID-19 is greater in women than in men.[28,29] This conclusion can be related to women's high levels of stress, which may make it easier for them to communicate their anxieties due to their societal gender roles. In contrast, men may be less likely to express their fears due to their traditional roles as being strong and courageous.[30,31]

Overfield believes that the difference between men and women lies in the fact that women are more prone to stress than men.[32] According to a study conducted on students at a Saudi university, the findings showed that male and female students were not significantly different in terms of fear and anxiety.[23] Since high stress and anxiety reduce the quality of life, it can be expected that in epidemics, the quality of life of people, especially vulnerable populations, will decrease. One of the most important weaknesses of this study was the lack of detailed demographic information. The novelty of this study and the focus on a specific group of the Sulaimaniyah community who had experienced several COVID-19 waves were two of the strengths of this study.

Conclusions

Findings provided a clear picture of the state of fear, anxiety, and the effect of COVID-19 on students' quality of life, and accordingly, their fear was high and their anxiety was moderate. The COVID-19 pandemic also had an average effect on the quality of life of these students. Accordingly, it is necessary to provide psychological counseling programs and personal protection workshops to reduce the psychological distress of these students.

Competing interests

The authors declare that they have no competing interests.

Abbreviations

Coronavirus disease 2019: COVID-19;

Severe acute respiratory syndrome: SARS;

World Health Organization: WHO;

Quality Of Life: QOL

Authors' contributions

All authors read and approved the final manuscript. All authors take responsibility for the integrity of the data and the accuracy of the data analysis.

Availability of data and materials

The data used in this study are available from the corresponding author on request.

Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki. Institutional Review Board approval was obtained. All participants signed an informed consent form.

Consent for publication

By submitting this document, the authors declare their consent for the final accepted version of the manuscript to be considered for publication.

References

1. Ma Y-F, Li W, Deng H-B, Wang L, Wang Y, Wang P-H, et al. Prevalence of depression and its association with quality of life in clinically stable patients with COVID-19. J Affect Disord. 2020;275:145-8. doi:10.1016/j.jad.2020.06.033 PMid:32658818 PMCid:PMC7329672
2. Erbil KR, Iraq (GOV.KRD). Kurdistan Regional Government

Committee on Coronavirus Issues 2020 [Available from: https://gov.krd/coronavirus-en/situation-update/.

3. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiat Res. 2020:112934. doi:10.1016/j.psychres.2020.112934 PMid:32229390 PMCid:PMC7102633

4. Rehman U, Shahnawaz MG, Khan NH, Kharshiing KD, Khursheed M, Gupta K, et al. Depression, anxiety and stress among Indians in times of Covid-19 lockdown. Commun Ment Health J. 2020:1-7.doi:10.1007/s10597-020-00664-x PMid:32577997 PMCid:PMC7309680

5. Wang Y, Di Y, Ye J, Wei W. Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China. Psychol Health Med. 2020:1-10. doi:10.1080/13548506.2020.1746817 PMid:32223317

6. Kwasi Ahorsu D, Ying Lin C, Saffari M, Griffiths D, Pakpour A. The Fear of COVID-19 Scale: Development and Initial Validation. Int J Ment Health Addict. 2020. doi:10.1037/t78404-000

7. Islam SD-U, Bodrud-Doza M, Khan RM, Haque MA, Mamun MA. Exploring COVID-19 stress and its factors in Bangladesh: a perception-based study. Heliyon. 2020;6(7):e04399. doi:10.1016/j.heliyon.2020.e04399 PMid:32685726 PMCid:PMC7350787

8. Syed NK, Griffiths MD. Nationwide suicides owing to alcohol withdrawal symptoms during COVID-19 pandemic: a review of cases from media reports. J Psychiatr Res. 2020. doi:10.1016/j.jpsychires.2020.08.021 PMid:32866677 PMCid:PMC7438040

9. Cheng SK, Wong C, Tsang J, Wong K. Psychological distress and negative appraisals in survivors of severe acute respiratory syndrome (SARS). Psychol Med. 2004; 34(7):1187. doi:10.1017/S0033291704002272 PMid:15697045

10. Hamer M, Kivimaki M, Stamatakis E, Batty GD. Psychological distress and infectious disease mortality in the general population. Brain Behav Immun. 2019;76:280-3. doi:10.1016/j.bbi.2018.12.011 PMid:30579940

11. Wu P, Fang Y, Guan Z, Fan B, Kong J, Yao Z, et al. The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. Can J Psychiatr. 2009; 54(5):302-11. doi:10.1177/070674370905400504 PMid:19497162 PMCid:PMC3780353

12. Dymecka J, Gerymski R, Machnik-Czerwik A. How does stress affect life satisfaction during the COVID-19 pandemic? Moderated mediation analysis of sense of coherence and fear of coronavirus. Psychol Health Med. 2022;27(1):280-8. doi:10.31234/osf.io/3zjrx PMid:31578088

13. Deacon B, Maack DJ. The effects of safety behaviors on the fear of contamination: An experimental investigation. Behav Res Ther. 2008;46(4):537-47. doi:10.1016/j.brat.2008.01.010 PMid:18313031

14. Dong L, Hu S, Gao J. Discovering drugs to treat coronavirus disease 2019 (COVID-19). Drug Discov Ther. 2020;14(1):58-60. doi:10.5582/ddt.2020.01012 PMid:32147628

15. Bai Y, Yao L, Wei T, Tian F, Jin D-Y, Chen L, et al. Presumed asymptomatic carrier transmission of COVID-19. JAMA. 2020; 323(14):1406-7. doi:10.1001/jama.2020.2565 PMid:32083643 PMCid:PMC7042844

16. Abdullah MF, Murad NS, Teoh SH, Mohamad MA. Quality of life of university students during the COVID-19 pandemic: age, history of medical illness, religious coping, COVID-19 related stressors, psychological factors and social support were predictive of quality of life. Res Sq. 2020:1-33. doi:10.21203/rs.3.rs-104496/v1

17. Nejati V, Shirinbayan P, Akbari Kamrani A, Foroughan M, Taheri P, Sheikhvatan M. Quality of life in elderly people in Kashan, Iran. Middle East J Age Ageing. 2008; 5 (2):21-5.

18. Rogowska AM, Kuśnierz C, Bokszczanin A. Examining anxiety, life satisfaction, general health, stress and coping styles during COVID-19 pandemic in Polish sample of university students. Psychol Res Behav

Manag. 2020;13:797. doi:10.2147/PRBM.S266511 PMid:33061695 PMCid:PMC7532061

19. Ahorsu DK, Lin C-Y, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: development and initial validation. Int J Ment Health Addict. 2020. doi:10.1037/t78404-000

20. Alipour A, Ghadami A, Alipour Z, Abdollahzadeh H. Preliminary validation of the Corona Disease Anxiety Scale (CDAS) in the Iranian sample. Health Psychol. 2020;8(32):163-75.

21. Repišti S, Jovanović N, Kuzman MR, Medved S, Jerotić S, Ribić E, et al. How to measure the impact of the COVID-19 pandemic on quality of life: COV19-QoL–the development, reliability and validity of a new scale. Glob Psychiat. 2020. doi:10.2478/gp-2020-0016

22. Parisod H, Holopainen A, Kielo-Viljamaa E, Puukka P, Beeckman D, Haavisto E. Attitudes of nursing staff towards pressure ulcer prevention in primary and specialised health care: A correlational cross-sectional study. Int Wound J. 2021:1-12. doi:10.1111/iwj.13641 PMid:34121328 PMCid:PMC8762573

23. Alyami M, de Albuquerque JV, Krägeloh CU, Alyami H, Henning MA. Effects of fear of COVID-19 on mental well-being and quality of life among Saudi adults: a path analysis. Saudi J Med Med Sci. 2021;9(1):24. doi:10.4103/sjmms.sjmms_630_20 PMid:33519340 PMCid:PMC7839565

24. Broche-Pérez Y, Fernández-Fleites Z, Jiménez-Puig E, Fernández-Castillo E, Rodríguez-Martin BC. Gender and fear of COVID-19 in a Cuban population sample. Int J Ment Health Addict. 2020:1-9. doi:10.1007/s11469-020-00377-y

25. Limcaoco RSG, Mateos EM, Fernandez JM, Roncero C. Anxiety, worry and perceived stress in the world due to the COVID-19 pandemic, March 2020. Preliminary results. MedRxiv. 2020.

26. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. Gen Psychiatr. 2020;33(2). doi:10.1136/gpsych-2020-100213 PMid:32215365 PMCid:PMC7061893

27. Sakib N, Bhuiyan AI, Hossain S, Al Mamun F, Hosen I, Abdullah AH, et al. Psychometric validation of the Bangla Fear of COVID-19 Scale: Confirmatory factor analysis and Rasch analysis. International J Ment Health Addict. 2020:1-12. doi:10.1007/s11469-020-00289-x

28. Bitan DT, Grossman-Giron A, Bloch Y, Mayer Y, Shiffman N, Mendlovic S. Fear of COVID-19 scale: Psychometric characteristics, reliability and validity in the Israeli population. Psychiatr Res. 2020;289:113100. doi:10.1016/j.psychres.2020.113100 PMCid:PMC7227556

29. Bakioğlu F, Korkmaz O, Ercan H. Fear of COVID-19 and positivity: mediating role of intolerance of uncertainty, depression, anxiety, and stress. Int J Ment Health Addict. 2020:1-14. doi:10.1007/s11469-020-00331-y PMid:32837421 PMCid:PMC7255700

30. AlAteeq DA, Aljhani S, AlEesa D. Perceived stress among students in virtual classrooms during the COVID-19 outbreak in KSA. J Taibah Univ Med Sci. 2020;15(5):398-403. doi:10.1016/j.jtumed.2020.07.004 PMid:32837508 PMCid:PMC7395822

31. Demirbas N, Kutlu RJIJoMH, Addiction. Effects of COVID-19 Fear on Society's Quality of Life. Int J Ment Health Addict. 2021;15:1-10. doi:10.1007/s11469-021-00550-x PMid:34539282 PMCid:PMC8443113

32. Overfield T. Biologic variation in health and illness: race, age, and sex differences: CRC Press; 2017. doi:10.1201/9781315150307 PMid:29340321 PMCid:PMC5762951