

Investigating General Health and Its Related Factors in Final Year Nursing Students during the COVID-19 Pandemic

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Abstract

Background:

As a world crisis, the COVID-19 pandemic has significantly affected educational status. Nursing students tolerate more stress compared to other students due to the nature of their major. Therefore, this study aimed to investigate general health and its related factors in final year nursing students during the COVID-19 pandemic.

Methods:

The current study was a descriptive- cross-sectional study. Samples included all final year nursing students of Shiraz nursing faculty (106 individuals) that were invited to participate in the study using the census sampling method. Demographic information questionnaires, as well as Goldberg`s General Health questionnaire, were utilized to collect the data. The data were analyzed using SPSS, version 22, software.

Results:

The results of the study indicated that nursing students were not in the complete health level regarding the general health index (44.07 ± 12.3). Moreover, factors such as underlying disease history, and history of Coronavirus infection, as well as the history of virus infection in one of the family members had a significant relationship with general health score ($p < 0.05$).

Conclusion:

The results of the study showed that nursing students were exposed to injuries regarding the general health index; this issue was mostly true for students having underlying diseases and those who were infected with COVID-19. Therefore, considering the general health dimensions of the nursing students seemed necessary.

Keywords: Nursing students, General health, COVID-19 Virus.

Introduction

Infectious disease resulting from the COVID-19 virus was first identified as Coronavirus pneumonia and it was scattered rapidly all over the world like an epidemic disease (1). COVID-19 epidemic not only increases death but also challenges all life aspects of the individuals as a crisis(2); daily life aspects may include personal life, occupation, educational degree, communications, and social activities. Therefore, the effects of such changes have led to psychological distress in many people (3).

COVID-19 has also affected universities and institutes involved in the conditions of this virus regarding health, nursing faculties, and clinical training systems (4). Concurrently with the spread of the COVID-

19 epidemic virus, nurses and clinical students have faced worse conditions in health and medical care lines (5).

Stress is a complex event that happens in the interaction among individuals and their internal as well as external environments. Such a mutual interaction can lead to physical, spiritual, emotional, and behavioral changes. Studies have shown that nursing students have higher perceived stress levels than other students of the professional programs (6).

Considering the conditions resulting from COVID-19 pandemics, nursing students experience health care problems, as well as stress resulting from it and they, are also exposed to psychological traumas resulting from social distancing and long-term quarantines (7). They also speculate unpleasant events such as patients' death and their ill conditions, which can have negative effects on the health of these individuals (8). Besides, high levels of unreliability, hopelessness feeling, grief, and losing their target increases unpleasant psychological-social consequences so that a recent study regarding the effects of COVID-19 reported that health employees experienced unpleasant feelings such as fear, excessive instigation, sleeplessness, and emotional weariness. Moreover, conditions resulting from social distancing lead to the cancelation of classes and clinical activities, losing part-time jobs, or being present in clinical places in hospitals that may need taking care of patients having positive COVID-19(3). Therefore, nursing students especially clinical students tolerate more stress which can affect their various life aspects. Since no studies have been conducted in our society considering general health and its related factors in nursing student internships, the current research aimed to evaluate the general health status of nursing student internships and identify their related factors. The results of the study could be used in the management and supportive programs of students in educational centers.

Methods

Type of the Study:

The current study was descriptive-cross sectional research, which aimed to investigate general health and its related factors in nursing student internships at Shiraz Medical Science University.

Sample Size:

The subjects of the study included 106 final years nursing students who were invited to participate in the research through the census sampling method.

The methodology of the study:

Firstly, the aim and necessity of conducting this project were described through licensing and presenting recommendations to the nursing and midwifery faculty of Shiraz to cooperate with the related units. All questionnaires and forms were designed electronically (Press line) to observe health protocols. After collecting students' phone numbers, the link of forms and questionnaires were sent to them through messaging on social networks. All participants who were tended to participate in the study filled the informed consent form and Goldberg's General Health questionnaire as well as their demographic information. At last, the collected data were analyzed using SPSS, version 22, software.

Data Collection Instrument

1. Demographic Information Form

This form included age, gender, residence area, history of COVID-19 disease infection, history of COVID-19 disease infection by one of the family members, satisfaction from the educational field of study, and underlying disease history.

2. General Health Questionnaire

This questionnaire was firstly designed by Goldberg in 1972 (9). The main questionnaire has 60 questions, however, the shortened forms of it including 30, 28, or 12 questions have also been utilized in different studies (10). The General Health questionnaire having 28 questions includes 4 sub-tests each having 7 questions. The questions of each sub-test have been organized sequentially and progressively so that questions 1 to 7 are related to the sub-test of physical signs, questions 8 to 14 are

related to anxiety and sleeplessness, questions 15 to 21 are related to the social functioning disorder, and questions 22 to 28 are related to depression. All items of this questionnaire have 4 options and the scoring method of this questionnaire is based on 4 point-Likert scales. The total score of each individual varies from zero to 84 and fewer scores state better mental health. In 1988, Goldberg and Williams reported the reliability of this scale equal to 0.95 using the split-half method (11). Based on the re-test method, split-half method, and Cronbach Alpha, Rezaie obtained the reliability of the General Health questionnaire respectively, equal to 0.93, 0.70, and 0.90. Moreover, to assess the validity of this questionnaire, concurrent validity and factor analysis validity methods were utilized. Concurrent validity of this questionnaire was reported through administering MHQ (0.55) concurrently (12).

Data Analysis Method

After collecting the required information, the data were entered into the SPSS₂₂. Data analysis included descriptive and inferential parts; regarding the descriptive part, this study presented mean, standard deviation, frequency, and their percentage, however in inferential part, the independent t-test was used to compare the mean of a quantitative factor with a qualitative factor

Results

Overall, 106 final-year nursing students participated in the current study, among whom, 55 individuals were female (51.5%) and 51 were male (48.8). Participants were 21 to 35 years old (23.75 ± 3.3) (mean \pm SD). 76.4% of the participants lived in the dormitory. Among all participants, 18 individuals (17%) were reported to be infected with COVID-19; moreover, 48 individuals (45.3%) reported one of their family members to be infected with this disease (Table 1).

Table 1. Demographic information of the individuals

Group		Intervention
Demographic factors		Number (%)
Residence	Dormitory	25(23.6)
	With Family	81 (76.4)
Infection with Covid 19 virus	Yes	18(17.0)
	No	88 (83.0)
Gender	Female	55(48.1)
	Male	51(53.1)
Infection of family members with Covid 1 9virus	yes	48 (45.3)
	no	58 (54.7)

The results of the research indicated that the total score of general health in the students was calculated to equal to (44.07 ± 12.3); according to the standards of the General Health questionnaire, this score was not in the complete health level. Investigating sub-scales showed that participants had reported the highest score in the anxiety-sleeplessness dimension (15.46 ± 4.43). Since one of the obtained scores was more than 14, it was not in the complete health level. However, participants reported the least score in the physical health dimension (6.61 ± 4.9) (Table 2).

Table 2. Mean and standard deviation of General Health score by subscales

Sleep quality dimensions	Mean \pm SD	
	Mean	SD
Physical health	6.61	4.92
Anxiety and sleep	15.46	4.56
Relationship	8.31	6.36
Depression	13.68	5.50
Total	44.07	12.30

The results of another study, which investigated the relationship between underlying disease variables, the history of being infected to COVID_19 in participants and their family members, their interest in the educational field, gender, and residential area, showed that there was a significant relationship between underlying disease history and index score of general health ($p=0.001$); this meant that participants having underlying disease history, had reported higher index scores. Moreover, there was a significant relationship between the history of COVID-19 infection in the participants ($p=0.001$) and their family members ($p<0.001$); this meant that participants having a history of COVID-19 infection in themselves or their family members, had higher index scores. However, there were no significant relationships between gender ($p=0.68$), interest in the educational field ($p=0.1$), and residential area ($p=0.28$) (Table 3).

Table 3. Comparison and evaluation of the relationship between the mean score of General health and demographic characteristics based on independent t-test.

Variable	mean \pm SD	p-value
Residence		
Dormitory	40.56 \pm 10.71	P= 0.1 t= 1.64
With Family	45.16 \pm 12.63	
Infection with Covid 19 virus		
Yes	57.5556 \pm 10.88	P= 0.01* t= 5.85
No	41.3182 \pm 10.65	
Infection of family members with Covid 19 virus		
Yes	53.64 \pm 9.04	P=0.000 t= 10.01
No	36.15 \pm 8.4	
Interest in the field of study		
Yes	42.9 \pm 11.62	P=0.296 t= 1.05
No	45.42 \pm 13.4	
Background disease		
Yes	56.5000 \pm 10.22	P= 0.001 t= 4.82
No	41.8667 \pm 11.31	
Gender		
female	43.6000 \pm 12.05	P= 0.68 t= 0.41
Male	44.5882 \pm 12.67	

Discussion and Conclusion

The current study was conducted to investigate general health and its related factors in final-year nursing students. To this end, Goldberg's General Health questionnaire, as well as the demographic questionnaire, were utilized for evaluating students. According to the results of the study, the total mean of general health index showed that more attention is required for following students' health status. Because the total score of the index was 44.07 ± 12.3 and the maximum score was 77, assessing final year students' general health dimensions, who were more exposed to infectious factors than other students, is of utmost importance. In line with this study, Son et al., (2020) conducted a study to investigate the mental health of 195 students in the USA and indicated that 138 individuals (71%) had reported increased stress and anxiety levels due to the prevalence of COVID-19. Considering the results of this study, the researcher suggested immediate development of interventions and preventive strategies for following students' mental health (13). Moreover, Mechili et al., (2020) concluded in their study that quarantine actions had a significant effect on students' as well as their families' depression; they suggested conducting more comprehensive studies regarding the considered population (14). The results of these two studies were in line with the current research identifying the importance of paying attention to health dimensions in nursing students.

The results of another study showed that participants obtained more scores in sleep/ anxiety disorders, indicating the inappropriate level of students' general health status in sleep quality and anxiety dimensions. Since in Goldberg's General Health scale, obtaining a score of more than 14 identified the inappropriate status demanding proper intervention and following, obtaining a score of (15.64) necessitates care and supportive actions in the nursing students. In line with this study, the results of a longitudinal observational study, which had been conducted on 207 nursing students during COVID_19 pandemics, showed that students had problems in the time, efficiency, and total quality of sleep (15).

Besides, a cross-sectional study had been conducted among 244 nursing students whose anxiety levels were evaluated using the Generalized Anxiety Disorder 7-item Scale (GAD-7). The results indicated that the prevalence of moderate to severe anxiety was respectively, 42.8% and 13.1%, in which, fear of infection was significantly related to the higher anxiety score and powerful flexibility and use of humor were related to lower-level anxiety (16). It could be stated that conditions resulting from COVID-19 pandemics would lead to the creation of stress and anxiety among students especially nursing ones; this identifies the necessity of paying essential attention in this regard. The reason is that if no attention is paid to anxiety and its related factors, all mental-physical and social dimensions would be affected accordingly so that the skill toward being infected with a disease would be increased as the stress level increases(17,16).

Regarding depression sub-scale and its related signs, participants were in the dimensional level; this issue identified the importance of paying attention to psychological dimension during COVID-19 pandemics. Patelarou et al., (2021) conducted a study on 787 nursing students in Spain and showed that one-third of the nursing students' population had experienced mild depression (18). The results of another study that had been conducted on 69054 students during COVID_19 quarantine in France, showed that the prevalence of suicide thoughts, severe distress, and high levels of perceived stress, severe depression, and anxiety level were high in students. The results of this survey research indicated the high prevalence of issues related to mental health in students who had experienced quarantine; this issue emphasized the necessity of improving prevention, observation, and accessibility to cares. Moreover, 37% of the participants stated that they had experienced depression episodes (19).

The results of another study showed that regarding the investigation of sub-scales, participants were in a better status in physical dimension than other dimensions. Accordingly, it could be stated that the COVID-19 virus mostly affected students' psychological health. However, the highest reported score of some of the participants especially those who were involved in the disease, was more than 14 in the physical sub-scale, so considering all dimensions of general health seems necessary.

According to the results of the study that had investigated the relationship between various variables and the mean score of students' general health, it was shown that participants having underlying diseases, had higher general health score; this meant that there was a relationship between the existence of an underlying disease and the reduction of general health. According to the presented reports, most of the diseases recorded by participants were asthma, anemia, gastrointestinal complaints, and migraine. Since the existence of an underlying disease increases individuals' vulnerability against the COVID virus, the obtained results could be interpreted. On the other hand, these individuals experience more stress due to the fear of being involved with the disease.

The results also indicated that the quality of general health in participants having COVID-19 disease experience or those whose family members had experienced this disease was at an inappropriate level. As experiencing this disease causes the formation of physical distresses and severe mental problems in the individuals, these people face lots of other problems. On the other hand, experiencing quarantine and reducing social relationships also affect people's health (7). Reverte et al., (2020) conducted a study on 305 nursing students who were infected with COVID-19 showing that the infected students had lower psychological well-being. The results of the study showed that students' mental health is an important factor and should be considered while being trained as a nurse staff in the university. The necessity of promoting healthy habits and presenting preventive approaches is desired. Moreover, training and preparing students for epidemic conditions is of utmost importance since such cases can have an essential effect on the mental health of general people; these experts would cure the future of nursing and students (20). Another descriptive-cross sectional research has been conducted on 314 final

year nursing students, showing that the health status of students having no family members infected with COVID-19, was at a high and appropriate level than those who had family members infected with COVID-19; these results were in line with the results of the current study (21).

Besides, the results indicated that there were no significant relationships between gender and general health score; so it could be stated that crises and stressful conditions affected the health status of both females and males. Moreover, there were no significant relationships between residential areas (living in university dormitories or with family) and general health index score. Considering the epidemic nature of this disease and involving all people in all circumstances, stress resulting from it could be observed in all students who lived in the dormitory or with family. On the other hand, there were no significant relationships between being interested in the educational field of study and general health. Although various studies have identified the relationship between interest and tendency toward the educational field of study and psychological well-being level as well as mental health (23, 22), the created conditions caused by the COVID-19 virus, have affected all health dimensions of students.

Overall, the COVID-19 virus is the last epidemic disease having the highest rate of death all over the world. Crises like this can endanger the academic performance and mental health of nursing students. The results of a qualitative study showed that fearing clinical environments affects students' mental health and leads to the formation of concentration and learning problems (24). Therefore, considering the results of the current study showing that nursing students who are active in the clinical part, are exposed to problems related to general health; so that anxiety and sleep disorders have been reported as the most prevalent problems in these students. Besides, the general health index level in students or family members having COVID-19 disease experience was more inappropriate. Therefore, applying supportive-consultative programs for these students is of utmost importance, which needs the cooperation of university authorities and health institutions.

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Conflict of interest

The authors confirm that there are no conflicts of interest.

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