Psychological Impact of the COVID-19 Pandemic on Palestinian Nursing Students: A cross-sectional study

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ABSTRACT

Introduction: The COVID-19 disease became a global pandemic in the year early 2020. The pandemic created impacts on people lives posing a threat to their physical and mental health. Therefore, this study aimed to assess the psychological impact of COVID-19 pandemic on Palestinian nursing students residing in the Gaza Strip, Palestine.

Materials and methods: A convenience sample of 345 nursing students from the Islamic University of Gaza completed on line questionnaire packet that included demographic data and the 7-item Generalized Anxiety Disorder Scale (GAD-7).

Results: The results from this study revealed that most of our participants were females (79.1%), single (82.3%), not working (90.4%) and having no chronic disease (94.8%). Variant levels of anxiety were reported by participants with 34.5% of them having mild, 31% moderate and 19.1% severe levels of anxiety. Levels of anxiety reported in this study were not impact by any study variables such as age, sex, study year, etc.

Conclusions and implications for practice: The results of this study revealed high levels of anxiety among nursing students. The closure of the universities, the new experience of e-learning along with the multi-stressors already prevailing in the Gaza Strip have contributed to this high level of anxiety. Universities and the health care system in the Gaza Strip should pay attention to reduce anxiety levels among students. This could be approached by providing online training courses or setting channels of one-to-one online or phone counseling for students to alleviate negative psychological effects and to enhance mental health of students.

KEYWORDS: COVID-19; Nursing students; Psychological impact; GAD-7; Gaza Strip; Palestine; Anxiety

INTRODUCTION

On 30th January, 2020, World Health Organization (WHO) declared that 2019 coronavirus disease (COVID-19) outbreak a public health emergency of international concern [1]. On 12th February 2020, the novel coronavirus was named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) while the disease associated with it is now referred to as

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COVID-19. It is a new strain of coronavirus that has not been previously identified in humans [2]. It is transmitted through large respiratory droplets and direct contact; other modes of transmission (i.e. airborne and faeco-oral) have also been proposed [3].

The incubation period for the virus in average is five to six days, but it can extend up to 14 days [4]. It mostly attacks older people with compromised immune system. The median age of confirmed cases is around 59 years [5]. Initially, more than 80% of patients have asymptomatic or mild disease and recover, but about 15% may get severe disease including pneumonia, and around 5% become critically ill with septic shock and/or multi-organ and respiratory failure [6]. Fatality rate is estimated to be around 2% among overall ages, but it ranges from 0.2% in people under 50 to 14.8% in those over 80, and it is higher among patients with chronic comorbid conditions [7].

In spite of discovering several vaccines against the virus, the numbers of the newly diagnosed cases is increasing. Globally, up to May 8th, 2021, there have been 157,897,763 confirmed cases of COVID-19, including 3,287,082 deaths, reported to WHO. Furthermore, the report added that as of 7 May 2021, a total of 1,127,615,452 vaccine doses have been administered [8]. In Palestine, up to May 10, 2021, there have been 331090(11665 active cases) confirmed cases with 104872(7282 active cases) of them in the Gaza Strip. A total of 3646 death cases were reported with 956 of them from the Gaza Strip[9].

Untill 5th of March, 2020, Palestine was free of Corona virus (COVID-19). From the 6th of March, seven cases in Bethlehem City in the West Bank were found to be positive for COVID-19 [10]. The President of Palestine immediately declared an emergency state in Palestine including West Bank and the Gaza Strip. This resulted in closing clustering places including schools and universities. This is besides establishing several quarantining centers at entrance ports to quarantine people who are returning to Palestine from other countries. This policy limited the number of patients with COVID-19, especially in the Gaza Strip up to August 23rd, all positive cases in Gaza were discovered among people in the quarantine centers.

Outbreaks of novel virus infections among people are always of public health concern, especially when there's little knowledge about the characteristics of the virus, how it spreads between people, how severe are the resulting infections and how to treat them [2]. This outbreak had several impacts on individuals' lives, including unbearable psychological pressure [11,12].

Several studies conducted to detect psychological impact of COVID-19 on several groups of the populations such as general public health care providers [13-15], general population [11, 16-18], elderly [19,20], children and adolescents [21] and university students [22-24].

The Gaza Strip is a small territory of 365 km^2 with about two million inhabitants. It is located on the Eastern Mediterranean coast and belongs to the self-governing territories of Palestine. However, it is geographically completely separated from the other Palestinian territories of the West Bank. For over than14 years, no free movement is possible in and out of the Gaza Strip and following the 2014 war, movement has been further restricted [25]. This situation poses different challenges to the region, such as high unemployment, especially among young people, dense population and stagnant economic and academic atmospheres [26].

Early on, the World Health Organization (WHO) advised implementation of and adherence to strict measures to reduce transmission of SARS-Co-2, including social distancing, staying at home to reduce transmission, stringent hand hygiene, sneezing and coughing etiquette, self-isolation in the presence of symptoms and testing for Coronavirus as well as consequent contact tracing of infected people with isolation and quarantine of suspected or active cases [27]. As a result, schools and universities were closed on early March 2020 and university students started a new challenge and a new experience of e-learning, which added to the multi-stressors prevailing among individuals living in the Gaza Strip, especially among university students with the new stress related to the new experience of e-learning and the worry about their future. Therefore, this study aimed to assess the psychological impact of COVID-19 pandemic on Palestinian nursing students residing in the Gaza Strip, Palestine.

METHODS AND MATERIALS

Design, Population, Setting, and Sampling

A cross-sectional design was used in this study. The target population comprised of undergraduate nursing students enrolled in the second semester at the Faculty of Nursing at the Islamic University of Gaza. Data were collected after student had finished their final exams for the second semester. There were 1392 students enrolled in this semester, 920 of them are females and 412 males; 221 are enrolled in the midwifery department while the rest (1170) are in the nursing department. A convenience sample of 357 students

completed an electronic version of the questionnaire. After excluding 12 cases, the remaining questionnaires became 345.

Instrument

The instrument used in this study composed from two parts; the first part included demographic information about participants including age, gender, department, type of enrollment (regular student vs. upgrading student from associate degree to bachelor of science in nursing), working status, marital status, working condition, if having a chronic disease and number of family members. The other part of the instrument comprised of the 7-item Generalized Anxiety Disorder Scale (GAD-7). The GAD-7 was developed by [28] and it includes seven items based on seven core symptoms and inquires the frequency with which respondents suffered from these symptoms within the last two weeks. GAD-7 measures anxiety symptoms using a 4-pointLikert scale ranging from zero to three, where 0= not at all, 1= several days, 2 = over half the days and 3 = almost every day, therefore, the total score will range from 0 to 21. The GAD-7 showed to be valid and reliable validated screening instrument [22,29] and it has demonstrated excellent internal consistency in several studies [30,31]. Tiirikainen K, et al. (2019). examined the psychometric properties of the GAD-7 in a large representative sample of Finnish adolescents and found that it was a releaible and valid meaure for generalized anxiety symptoms among adolesents with smiliar properties to those reported among adults. Finally, the instruemtn demonestarted excelenet internal consistancy in this study with a Cronbach's α = 0.884.

DATA ANALYSIS

The Statistical Package for Social Science (SPSS), version 18, was used to compute and analyze the data. Data was analyzed using descriptive statistics (mean, range, standard deviation, and percentage) and frequency distribution tables. ANOVA and t-test and test were used to examine statistical significance between differences of the means of different variables. Correlations test was be used to examine if there were any correlation between different total score of GAD-7and sociodemographic variables. Prior to data analysis, 12 responses of the 357 questionnaires were excluded because there were three or more missing variables of the GAD-7. Missing variables were replaced by the mean of each item.

ETHICAL CONSIDERATIONS

Prior to conducting this research study, approval from the Internal Review Board at the Islamic University of Gaza was

obtained. Participants were informed about the purpose of the study at the opening statement and were assured that their participation is voluntary and that each one has the right to refuse to complete the questionnaire. Participants were assured that if they decided to refuse to be involved in the assessment process, this decision would not affect their grades. Data was collected anonymously from all participants. In the final report, confidentiality and anonymity will be maintained.

RESULTS

As mentioned in the table 1, the socio-demographic characteristics of participants. The age of participants ranged between 18 and 45 years with the great majority of them (82.03%) within the age group of 18-22 years. Most of our participants were females (79.1%), single (82.3%), not working (90.4%) and having no chronic disease (94.8%). The majority of our participants was enrolled as regular students (83.2%) and came from the nursing department (76.5). About two thirds of participants were from third (36.8%) and fourth (29.9%) year students. Finally, the family size of participants ranged between one and 25 family members with a mean of 7.07.

		Frequency	%
Age	Mean 21.33 (±2.98) Range 18-45 year		
Sex	Male	72	20.9
	Female	273	79.1
Marital status	Married	59	17.1
	Single	284	82.3
	divorced	1	0.3
	widow	1	0.3
Type of enrolment	Regular students	287	83.2
	Upgrading	58	16.8
Department	Nursing	264	76.5
	Midwifery	81	23.5
Level	First Year	54	15.7
	Second Year	61	17.7
	Third Year	127	36.8
	Fourth Year	103	29.9
Working status	Yes	28	8.1
	No	312	90.4
Having a chronic disease	Yes	11	3.2
	No	327	94.8
Number of family members	Range (1 to 25) mean 7.07 (±3.23)		

Table 1: Socio-demographic characteristics of participants.

ANALYSIS OF GAD-7

The results for frequency, percentage, mean and standard deviation of GAD-7 items are depicted in table 2. The item

"Feeling nervous, anxious, or on edge" had the highest mean (1.68) while "Being so restless that it's hard to sit still" had the lowest mean (1.07).

	Not at all sure	Several days	Over half the days	Nearly every day		
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Mean	SD
Feeling nervous, anxious, or on edge	34 (9.9%)	126 (36.5%)	102 (29.6%)	83 (24.1%)	1.68	0.95
Not being able to stop or control worrying	80 (%23.2)	149 (43.2%)	62 (18.0%)	54 (15.7%)	1.26	0.99
Worrying too much about different things	46 (13.3%)	131 (38.0 %)	95 (27.5%)	73 (21.2%)	1.57	0.97
Trouble relaxing	56 (16.2%)	138 (40.0%)	91 (26.4%)	60 (17.4%)	1.45	0.96
Being so restless that it's hard to sit still	107 (31.0%)	150 (43.5%)	46 (13.3%)	42 (12.2%)	1.07	0.96
Becoming easily annoyed or irritable	46 (13.3%)	130 (37.7%)	76 (22.0%)	93 (27.0%)	1.63	1.02
Feeling afraid as if something awful might happen	84 (24.3%)	121 (35.1%)	77 (22.3%)	63 (18.3%)	1.34	1.04

Table 2: Frequency, percentage, mean and standard deviation of GAD-7 items.

LEVEL OF ANXIETY AMONG NURSING STUDENTS

Table 3 shows the different levels of anxiety among undergraduate nursing students. Varying degrees of anxiety were reported by participants with more than 60% of them reporting moderate to severe levels of generalized anxiety disorder. First year students had the highest percentage (42.6%) of moderate anxiety while second year students have the highest percentage (26.2%) of severe level of anxiety.

	All students		First year		Second year		Third year		Fourth year	
Level of anxiety	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Normal	53	15.4	9	16.7	10	16.4	14	11.0	20	19.4
Mild	119	34.5	15	27.8	18	29.5	46	36.2	40	38.8
Moderate	107	31.0	23	42.6	17	27.9	48	37.8	19	18.4
Severe	66	19.1	7	13.0	16	26.2	19	15.0	24	23.3

Table 3: Levels of anxiety among undergraduate nursing students.

FACTORS INFLUENCING LEVEL OF ANXIETY

Pearson correlation did not show a statistically significant correlation between level of anxiety and the variables age and number of family members. ANOVA and t test did detect any impact of study variables on the total score of GAD-7 (table 4).

Variable		Mean	P value
Sex	Male	10.86	0.155
	Female	9.76	
Marital status	Married	9.50	0.511
	Singe	10.08	
Type of enrolment	Regular students	10.03	0.058
	Upgrading	9.79	
Department	Nursing	10.0947	0.513
	Midwifery	9.6543	
Level	First Year	9.41	0.692
	Second Year	10.57	
	Third Year	10.06	
	Fourth Year	9.87	
Working status	Yes	8.89	0.316
	No	10.11	
Having a chronic disease	Yes	8.82	0.491
	No	10.09	

Table 4: Impact of study variable on total score of GAD-7.

DISCUSSION

This study aimed to assess psychological impact of COVID-19 on Palestinian undergraduate nursing students. Results from this study revealed variant levels of anxiety among participants (table 3) with 31% of the participants having moderate level of anxiety and 19.1% having severe level. Such impact of COVID-9 is expected. A previous study revealed that public health emergencies, which applies to COVID-19, may lead to several psychological effects on college students such as anxiety, fear, and worry, among others [32]. Scores of GAD-7, reported by participants of this study, were not influenced by age, gender, study year, type of enrolment, having a chronic disease or number of family members' variables.

Level of anxiety reported in this study is relatively high. It is higher than those reported in other related studies. A study conducted in China assessed psychological impact on university students [22] and revealed that about 25% of participants having varying degrees of anxiety (21.3% with mild anxiety, 0.9 % with moderate level of anxiety & and 2.7% with high level of anxiety). Another study conducted in China revealed prevalence rates of anxiety and depression symptom of 7.7% and 12.2% among college students, respectively [21]. In Spain, moderate to extremely severe scores of anxiety (21.34%), depression (34.19%) and stress (28.14%) were reported by Spanish university students [23].

The prevalence of high level of anxiety among Palestinian nursing students could be due to the fact that these students are studying nursing and go to practice at hospitals; especially that studies conducted to assess level of anxiety among health care providers reported high level of anxiety. For example, a study conducted in Singapore [15] found that 20.7% of health care providers had anxiety, 6.9% had stress, 10.3% had depression and 10.9% had post-traumatic stress disorder. In another study conducted in China, results revealed that 39.1% of the health care workers had psychological distress [14]. Therefore, nursing students might be afraid of contracting the disease during their practice; although, training in hospitals was suspended for about three months (March to June).

Other contributing factors that might contribute to high prevalence of anxiety among nursing students could be due to the exceptional conditions they live in the Gaza Strip. For example, Gaza suffers from siege imposed by Israel since 2006 with no free movement is possible in and out of the Gaza Strip. Following the 2014 war, movement of people and goods has been further restricted [25]. The new experience of e-learning is another factor that might contribute to the high level of anxiety among participants, especially that internet access is limited to many students and with the

unstable availability of electricity (about 8-12 hours a day) will interrupt their study and affect their grades, which may affect their chance to get a job in the future. This is of special concern especially that rates of poverty and unemployment in the Gaza Strip reached nearly 75% in 2019 [33].These situations contributed to students' anxiety related to CVOVID-19 as this will affect their studies and therefore will affect their career and future employment [18,22,34]. Moreover, a study found that COVID-19 lockdown lead to worsening quality of sleep and insomnia symptoms among university students [35] which in turn may affect their academic performance and future career and increase their level of anxiety. Moreover, the rapid spread of the infection and the mutation and development of several new strands of the virus and limited availability of vaccinations could be other factors contributing to the high level of anxiety reported by this study.

Other causes that might contribute to increasing levels of anxiety among university students were reported in the literature. For example, some studies argued that anxiety levels increase by social distancing practice and absence of interpersonal communication during the quarantine and lockdown due to the pandemic of COVID-19 [12,36]. Also, it has been argued that the increasing numbers of COVID-19 patients and suspected cases contributes to eliciting public worry about contracting the disease and increasing levels of anxiety [37]. Furthermore, with high rates of poverty and unemployment that prevails among individuals living in the Gaza Strip, they will be unable to purchase enough protective equipment such as masks, gloves and disinfectants. Shortage of protective devices and disinfectant may lead to increase feelings of unsafely and therefore may increase levels of anxiety.

Results from this study revealed that none of the study variables had an impact on levels of anxiety among participants. However, the author was expecting that fourth year students will report higher levels of anxiety, results showed that they had the lowest prevalence of moderate and severe (combined) levels of anxiety (41.7%) compared to 50.1% (first year), 55.6% (second year) and 54.1% (third year) students. This expectation was based on literature which argued that COVID-19 will have serious impact of career of students who will graduate in this year (fourth year students in this case). Sahu P [38] argued that because these students are experiencing major interruptions in teaching and performance in the final part of their studies, they may likely graduate late due to the postponement of the final examination; which in turn may contribute to increasing levels of anxiety.

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

The results of this study revealed high level of anxiety among nursing students. The closure of the universities , the new experience of e-learning along with the multi-stressors already prevailing in the Gaza Strip, the rapid spread, mutation and development of new strands of the virus and shortage of vaccination have contributed to this high level of anxiety. Universities and the health care system in the Gaza Strip should pay attention to reduce anxiety levels among students. This could be approached by providing online training courses or setting channels of one-to-one online or phone counseling for students to alleviate negative psychological effects and to enhance mental health of students [38]. Moreover, university administration and faculty may need to work out students problems concerning tuition (for those who have limited resources) and the new experience of e-learning. Future research is recommended to focus on exploring causes of anxiety among nursing students and how to support these students during their study period in order to avoid the negative consequences of anxiety. Moreover, qualitative studies are recommended to get the insight of nursing students about the topic and to get in depth information about the issue and how this can be resolved.

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CONFLICT OF INTEREST

No conflict of interest is reported by the author.

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