

## **Anxiety among University Staff During Covid-19 Pandemic: A Cross-Sectional Study**

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### **Abstract**

*This study aimed to assess the anxiety level among university staff in Gaza Strip during the COVID-19 pandemic. Study population was 899 staff, 356 of them were academic staff and 543 were administrative staff. A total of 282 participants completed an online survey that included demographic characteristics of the participants and the 7-item Generalized Anxiety Disorder Scale. Findings from this study revealed that a large number of participants (68.8%) got in direct contact with infected people with COVID-19. Anxiety levels varied amount participants as 41.5% of them experienced mild level of anxiety, 15.6% moderate and 1.8% severe levels of anxiety while 36.2% did not manifest anxiety. Factors that have negative correlation with level of anxiety were age and years of experience ( $P= 0.01$ ). While factors that have statistically significant differences with the total score included: sex ( $p = 0.035$ ), having been infected with Corona virus ( $p = 0.033$ ), having a family member infected with Coronal virus ( $p = 0.008$ ) and if a friend or a relative died with COVID-19 ( $p = 0.011$ ). Main recommendation of this study is to reduce psychological effects of COVID-19 pandemic and to enhance the resilience and coping strategies of the universities' staff and students as well.*

**Key words:** *University staff, anxiety, Gaza Strip, Islamic University of Gaza, COVID-19*

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### **I. Introduction:**

In December 31, 2019, hospitals reported a cluster of cases with pneumonia of unknown cause in Wuhan, Hubei, China, attracting great attention nationally and worldwide (Wang, Horby, Hayden, & Gao, 2020). As of March 2021, there have been 116,135,492 confirmed cases of COVID-19, including 2,581,976 deaths, reported to World Health Organization (WHO) (World Health Organization, 2021). Up to March 8th, 2021, 222904 COVID-19 cases were reported with 2365 deaths. Of them, 56233 cases were reported in Gaza Strip along with 560 deaths (Ministry of Health, 2021).

The current global emergency could turn socio-economic challenges into political crises and intensify the demands for change that are spreading through various countries in the world including countries in the Middle East. Until an effective vaccine against the pandemic is made available and affordable, the economic and social cost of the drastic restrictions being imposed by most countries, including Palestine, may be overwhelming and unbearable (Amirah-Fernández, 2020). (However, fear from COVID-19 pandemic, forced lockdown and economic deterioration all brought great psychological stress, anxiety and depression among the population added to its morbidity and mortality effects. (Cao et al., 2020; Shigemura, Ursano, Morganstein, Kurosawa, & Benedek, 2020; Xiong et al., 2020).

Millions of lives have been affected and under psychological distress amid the coronavirus disease (COVID-19) pandemic, including those of patients, frontline healthcare workers, informal caregivers, children and older adults. The United Nations and the WHO warned about the extreme impact of COVID-19 on mental health and appealed for substantial investment in mental health services (Brunier & Harris, 2021). Meanwhile, a number of researchers reported that people experienced psychological distress during the pandemic, including moderate to high levels of anxiety, stress and depression (Cuiyan Wang et al., 2020). Moreover, the protective measures enacted including keeping social distance and quarantine may be also associated with the adverse impact on the psychological status of the public (Brown et al., 2020) due to the increase in the public sense of boredom and their confusion about time (Cellini, Canale, Mioni, & Costa, 2020).

Gaza Strip along with West Bank and Eastern part of Jerusalem were occupied by Israel in 1967. The occupied Palestinian territories were ruled by Israeli military rules for about 40 years which exposed Palestinians to oppression, political violence, violation of human rights, and lack of freedom (Giacaman et al., 2009). Generations of Palestinians have suffered from Israeli military forces in the shape of displacement to other countries, land confiscation, control of the movement of people and goods from one area to another – and outside the country – death, injury, disability, imprisonment,

lack of freedom, and injustice (Mataria et al., 2009). All of these are stressors which could impact the mental health status of the Palestinians. Moreover, another stressor that could be added to the list is the high rates of unemployment and poverty among the people living in the Gaza Strip. Besides these stressors, the COVID-19 pandemic had a great negative impact on the economy of the Palestinians, especially those living in the Gaza Strip. For example, the monthly income of people living in the Gaza Strip was reduced by almost 90% after the beginning of the pandemic. Many people had lost their jobs especially those with small independent workers such as drivers, grocery owners and others. This was reflected on people's ability to afford basic needs for their families. According to a report prepared by Islamic Relief Worldwide (2021), about 60% of people living in Gaza became unable to buy basic food, medicine and other essential supplies. Moreover, about 82% according to the same report suffers from mental health issues such as stress and anxiety because they are no longer able to provide their families with their basic needs of food, medicine and other essential supplies.

As a result of the pandemic, lock down was applied to the Gaza Strip in late March, 2020 and schools and universities were also closed since then. This unique and unfamiliar situation imposed a new challenge on university staff as they started to teach their students through e-learning channels, which added to the multi-stressors prevailing among individuals living in the Gaza Strip, especially among the academic staff and university students as well. Not so much studies were conducted to assess the impact on the COVID-19 Pandemic on different groups of the Palestinian population. Therefore, this study aimed to assess the anxiety level among university staff in Gaza Strip during the COVID-19 pandemic.

## **II. Methods and Materials**

### ***Design, population, setting, and sampling***

This study adopted a cross-sectional, descriptive design. The study targeted all academic and non-academic staff working at the Islamic University of Gaza (IUG). All university staff were invited to complete electronic version of the questionnaire. The questionnaire was delivered to the participants via electronic means. This included IUG email, WhatsApp applications, and the Facebook designated for IUG staff). There were 899 employees working in the Islamic University in the first semester 2020: 356 of them were academic employee and 543 were administrative employee. A census sample was sought for this study, but only 282 of the staff had completed and submitted the questionnaire. According to rasoft website for sample size calculation (<http://www.raosoft.com/samplesize.html>), this was a representative sample as the needed sample was 270.

### ***Instrument***

The instrument used in this study composed from two parts; the first part included demographic information about participants including age, gender, marital status, educational level, type of employment and others. Moreover, it included information related to the number of years for employment, if participants were exposed to COVID-19, whether personal protective equipment such as masks and antiseptic solutions were available, and if they were suffering from a chronic disease.

The second part of the instrument consisted of the 7-item Generalized Anxiety Disorder Scale (GAD-7). The GAD-7 was constructed by (Toussaint et al., 2020). The scale consists of seven items. These items are based on seven core symptoms that measure anxiety. Participants were asked to report the frequency of suffering from these symptoms within the last two weeks before the time of data collection. GAD-7 measures uses a 4-point Likert scale to measure level of anxiety where, where 0 = not at all, 1= several days, 2 = over half the days and 3 = almost every day. The minimal score to be reported by participants is zero while the highest score would be we 21.

The GAD-7 was used by other studies and was reported to be valid and reliable (Bozukluđu, Uyarlaması, & ve Güvenirliđi, 2013; Cao et al., 2020; Naeinian, SHAIRI, Sharifi, & Hadian, 2011; Radwan, 2021; Sousa et al., 2015; Spitzer, Kroenke, Williams, & Löwe, 2006; Zhong et al., 2015). Moreover, finding from this study revealed excellent internal consistency with Cronbach's  $\alpha$  of 0.884).

### ***Data Analysis***

Data analysis was done using version 22 of the Statistical Package for Social Science (SPSS). Before data analysis, frequency for variables was done to ensure that values fall between with the normal value for each variable. There were no missing data. Descriptive statistics, including range, mean and standard deviation were used to describe variables. To examine statistical significance between two variables, t test was used and to examine statistical differences between the means of three or more variables, ANOVA test was used. Moreover, Pearson correlation test was used to examine if there were any correlation between the continuous variables of the study (age, years, and number of family members) and the total score of GAD-7.

**Ethical Considerations**

Before conducting this study, a package of the study proposal was submitted to the Research Ethics committee at IUG. At the front page of the electronic questionnaire was a consent form explaining the aim and the nature of the study. After reading the form, participant had to check the agree icon to proceed to the next page. Participants were assured about the congeniality of the data anonymity of their identity in the final report and that there were no negative subsequences for participating in this study.

**III. Results**

A total of 282 participants completed and submitted the questionnaire for this study. Characteristics of participants are presented in table 1. The range for participants' age was 20 to 59 years with a mean of 44.22 ( $\pm 9.61$ ). The great majority of the participants were males (81.2%), married (93.6%), working in the main campus (93.3%) located in Gaza City and holding an academic position (57.1%). More than a quarter of them (27.3%) hold a doctoral degree. The years of experience ranged between six month and 38 years with a mean of 16.07 ( $\pm 7.43$ ). 40.4% of the participants live in Gaza city, 44.0% of them don't come physically to work at the campus during COVID pandemic and 53.2% come in direct contact with the students. While 68.8% of the participants got in direct contact with people infected with COVID-19, only 17.4% of them got infected with COVID-19. On the other hand, the average size of the participants' families ranged between one and 24 with a mean of 6.71 ( $\pm 2.90$ ), 23.4% of the participants reported that a family member got infected with COVID-19, 90.8% of them had a relative or a friend infected with COVID-19 and 36.2% reported that a family member, a friend or a relative died with COVID-19. Finally about one quarter (25.9%) of the participants reported having a chronic disease and 32.6% of them reported that the university provides enough amounts of masks and antiseptic solutions.

**Table 1: Socio-demographic characteristics of IUG staff**

		Frequency	%
Age	Mean 44.22 ( $\pm 9.61$ ) Range: 20 to 59 year		
Sex	Male	229	81.2
	Female	53	18.8
Marital status	Single	10	3.5
	Married	264	93.6
	Divorced	3	1.1
	Widowed	5	1.8
Level of education	High school or less	12	4.3
	Diploma	15	5.3
	Bachelor	93	33.0
	Master	85	30.1
	Doctorate	77	27.3
Type of employment	Academic	161	57.1
	Administrative	112	39.7
	Security and cleaning services	9	3.2
Years of experience	Mean 16.07 ( $\pm 7.43$ ) Range: 6 month to 38 years		
Campus	Main campus in Gaza	263	93.3
	South campus	19	6.7
Place of living	North	45	16.0
	Gaza	114	40.4
	Midzone	65	23.0
	Khanyounis	35	12.4
	Rafah	23	8.2
Come to work at the university during COVID pandemic	No	124	44.0
	Yes	53	18.8
	Yes, Partially	105	37.2
Got in direct contact with students	Yes	150	53.2
	No	132	46.8
Got in direct contact with people infected with COVID-19	Yes	194	68.8
	No	88	31.2
Get infected with COVID-19	Yes	49	17.4
	No	233	82.6
A family member got infected with COVID-19	Yes	66	23.4
	No	216	76.6
A relative/friend infected with COVID-19	Yes	256	90.8
	No	26	9.2
A family member/friend/ relative died with COVID-19	Yes	102	36.2
	No	180	63.8
Enough amounts of masks and antiseptic solutions available	Yes	92	32.6
	Yes, partially	120	42.6
	No	70	24.8

Having a chronic disease	Yes	73	25.9
	No	209	74.1
Number of family members	Mean 6.71 ( $\pm$ 2.90) Range 1-24 family member		

**Analysis of GAD-7**

Table 2 shows the descriptive statistics for GAD-7 items. This includes: results for frequency, percentage, mean and standard deviation for each item. The item received the highest score (1.17 $\pm$ 0.87) is “Feeling nervous, anxious, or on edge” while the item received the lowest score (0.61 $\pm$ 0.80) was “Being so restless that it's hard to sit still”.

**Table 2:** Descriptive statistics of GAD-7 items reported by IUG staff

	Not at all sure	Several days	Over half the days	Nearly every day	Mean	SD
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)		
Feeling nervous, anxious, or on edge	53 (18.8)	160 (56.7)	36 (12.8)	33 (11.7)	1.17	0.87
Not being able to stop or control worrying	131 (46.5)	109 (38.7)	34 (12.1)	8 (2.8)	0.71	0.79
Worrying too much about different things	75 (26.6)	140 (49.6)	42 (14.9)	25 (8.9)	1.06	0.88
Trouble relaxing	95 (33.7)	112 (39.7)	50 (17.7)	25 (8.9)	1.02	0.93
Being so restless that it's hard to sit still	156 (55.3)	89 (31.6)	27 (9.6)	10 (3.5)	0.61	0.80
Becoming easily annoyed or irritable	87 (30.9)	127 (45.0)	48 (17.0)	20 (7.1)	1.00	0.88
Feeling afraid as if something awful might happen	109 (38.7)	116 (41.1)	38 (13.5)	19 (6.7)	0.88	0.88

**Level of anxiety among participants**

The total score for the GAD-7 ranged between zero and 21 with a mean of 6.47 ( $\pm$ 4.67).

Cut off scores of 5, 10, and 15 were used to define mild, moderate and severe anxiety, respectively. These cut off points score were accompanied by the instrument. The results of data analysis for the total GAD-7 score (table 3) revealed that 41.5% of participants (n=117) suffers from mild level of anxiety and only five participants (1.8%) shows signs and symptoms of severe level of anxiety.

**Table 3:** level of anxiety among IUG staff

	Frequency	Percent
No anxiety	102	36.2
Mild anxiety	117	41.5
Moderate anxiety	44	15.6
Severe anxiety	5	1.8

**Factors influencing level of anxiety**

Results of Pearson correlation test (table 4) revealed that there is a negative correlation between the total score of GAD-7 and the variables related to age and years of experience. These correlations were found to be statistically significant. Furthermore, results showed that there was no statistically significant correlation between total score of GAD-7 and number of family members.

**Table 4:** Correlation between total score of anxiety and some study variables

		Total score of GAD-7	Age	Years of experience	Number of family members
Total score of Anxiety	Pearson Correlation	1	-0.161**	-.128*	0.059
	Sig.		0.007	0.031	0.320
Years of experience	Pearson Correlation	-0.128*	0.699**	1	0.265**
	Sig.	0.031	0.000		0.000
Number of family members	Pearson Correlation	0.059	0.246**	0.265**	1
	Sig.	0.320	0.000	0.000	

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Moreover, results of independent *t* test revealed that there were statistically significant differences between the total score of GAD-7 and some variables (table 5) including: sex (*p* = 0.035), got infected with COVID-19 (*p* = 0.033), having a family member infected with COVID-19 (*p* = 0.008) and if a family member, a friend or a relative died with COVID-19 (*p* = 0.011). Same test showed that the following factors did not impact the total score of GAD-7: campus, come to work at the university during COVID pandemic, got in direct contact

with students, got in direct contact with people infected with COVID-19, a relative or a friend infected with COVID-19 or having a chronic disease. Moreover, ANOVA test revealed that the following factors had impact on the total score of GAD-7: marital status, level of education, type of employment, place of living and availability of enough amounts of masks and antiseptic solutions.

**Table 4:** Factors impacting total scores of GAD-7 reported by IUG staff

Variable		Mean	P value
Sex	Male	6.1834	0.035
	Female	7.6792	
Get infected with COVID-19	Yes	7.7551	0.033
	No	6.1931	
A family member got infected with COVID-19	Yes	7.7879	0.008
	No	6.0602	
A family member/friend/ relative died with COVID-19	Yes	7.4510	0.011
	No	5.9056	

#### IV. Discussion

The COVID-19 had produced a negative impact of the mental health of people globally. This was not only because there is a chance that any person can get infected by the virus and suffers from the consequences of the disease including the signs and symptoms of the disease and the isolation from other people for a relatively long periods of time, but also because of other indirect consequences including lock down, restricted movement, isolation from friends and other beloved, economic losses, and higher exposure to adverse home environments (Hotopf, Bullmore, O'Connor, & Holmes, 2020). Therefore; the psychological impact due to the exposure to this new corona virus need to be explored in order to get it under control and mitigate its consequences (Horesh, Kapel Lev- Ari, & Hasson- Ohayon, 2020).

This study aimed to assess anxiety level resulted from COVID-19 pandemic on the staff of the Islamic University in Gaza. The results of this study revealed different levels of anxiety among IUG staff (table 3) with 41.5% of the IUG staff experienced a mild level, 15.6% a moderate level and 1.8% a severe level of anxiety. Because this is the first experience for the people living in the Gaza Strip with infectious diseases; especially with the ability for rapid spread of the COVID-19 virus, such levels of anxiety are expected among IUG staff and other inhabitants of the Gaza Strip. Moreover, COVID-9 had a negative impact on the educational process in the universities all over the world including Palestine and the Gaza Strip, which adds a new stressor for university staff as they will learn how teach their students using e-learning process, which is a new experience to most of the staff, which adds to the stressors they have to face.

Levels of anxiety among Islamic University staff reported in this study were relatively high. Since there is apparent lack of studies using similar tool in which the university staff were the participants, so typical comparisons were difficult. But these results were consistent with similar study conducted by Ghandour et al. (2020) who assessed the prevalence and predictor factor of distress and insecurity among the staff of Birzeit University (a Palestinian University in the West Bank) during the COVID-19 pandemic. Their results revealed that distress and insecurity levels were relatively moderate to high among the faculty members with prevalence of 20% and 26% respectively (Ghandour et al., 2020). The higher level of distress reported among Birzeit University staff may be explained by the Israeli occupation and settlers' restrictions in West Bank that constitutes an additional source of distress. Another similar study found that 22–24% of staff of the University of York from the United Kingdom (UK) reported clinical levels of anxiety and depression scores (Der Feltz-Cornelis, Maria, Varley, Allgar, & De Beurs, 2020). Participants of Der Feltz-Cornelis et al. (2020) study experienced high stress levels due to COVID-19 as 66.2% of their participants were labeled as vulnerable and 33.8% of them experienced low levels of stress and were labeled as resilient. The higher rate of anxiety among University of York staff could be related to the relatively high prevalence and mortality rates of COVID-19 in UK. In line with the findings of this study, a study conducted in Brazil has reported that fear of contamination co-occurs with loneliness and feelings of imprisonment due to social isolation, which in turn will increase levels of anxiety. For others, changes in work (e.g., more demands and more online tasks and interactions) are exhausting and co-exist with a of loss of personal time, or depressive symptoms, worry about one's health, and insomnia (Serralta, Zibetti, & Evans, 2020).

There are many expected factors that could contribute to the high levels of anxiety reported by the staff of the Islamic University in Gaza. These factors include the harsh conditions prevailing in the Gaza Strip due to siege imposed against Gaza since the year of 2006. Since that date, movement of goods and people, including patients who need treatment out side Gaza is very restricted. Following the 2014 war against the Gaza Strip, movement of people and goods have been further restricted (UN Office for the Coordination of Humanitarian Affairs, 2020). Moreover, IUG staff did not receive a full salary since 2013 because IUG passes through a financial crisis. Lately, most of the staff receive around 40% of their total salary, which is barely enough for most of the staff to provide the basic needs of food and medicine for their families.

The results of this study revealed that there were several variables that impacted the total score of GAD-7 (table 5). One of these variables was if a participant got infected him/herself with COVID-19 ( $p = 0.033$ ) as 17.4% of the participants were infected. These results are congruent with a study conducted by (Luo, Guo, Yu, & Wang, 2020), who reported that highest prevalence of depression and anxiety were reported among participants who suffered from COVID-19 infection and other pre-existing conditions. The results of this study revealed that levels of anxiety were higher among those who had a family member get infected with COVID-19 (23.4% of the participants had an infected family member). This goes in line with results of Ying et al. (2020) study who reported that anxiety levels were higher among those participants who have one of their family members having a direct contact with suspected or confirmed COVID-19 cases.

Another variable that contributed to higher level of anxiety among IUG staff was the death of a family member, a relative or a friend due to COVID-19. The Mortality rate due to Corona virus represents another factor to increase IUG staff's fear and anxiety since about one third of the participants have a family member, a relative or a friend died due to COVID-19. According to Moghanibashi-Mansourieh (2020), this will contribute to escalating their fear and anxiety.

In this study, there was a statistically significant negative correlation between total score of GAD-7 and age, these results go in line with the results reported by another two studies (de Pedraza, Guzi, & Tijdens, 2020; Nwachukwu et al., 2020). This can be explained that older participants are more mature and experienced to cope with life stressors. Moreover, years of experience variable has also a statistically significant negative correlation with the total score of GAD-7, this can be explained that work was found as protective factor against anxiety, depression, insomnia and somatization associated with the COVID-19 pandemic (Song, Wang, Li, Yang, & Li, 2020).

The high levels of anxiety reported in this study should alert university administration and other policy makers involved in higher education since anxiety has many malicious consequences. Literature revealed that high levels of anxiety were linked to several somatic symptoms such as fatigue and gastrointestinal manifestations and other mental consequences such as depression, psychological distress, and other psychological disorders (Mo et al., 2020; Teles et al., 2014). The results of this study underline the need for equipping the IUG staff with the required competencies and providing them with especial training so that they can handle and manage stress and anxiety to avoid the malicious consequence of these mental disturbances. Therefore; it is vital for university administration and policy makers at the ministry of higher education to enhance university staff's resilience through innovative organizational interventions. This could be achieved through providing social and organizational support which shown to have positive reflection on work outcomes (e.g., work performance, job satisfaction and job engagement) and physical and mental health of the university employees (Arnold & Dupré, 2012). Furthermore; positive attitudes in the workplace, after adopting strict protective measures contributes to reduce the university staff fear and anxiety (Khalid, Khalid, Qabajah, Barnard, & Qushmaq, 2016).

Moreover, since university staff, particularly the lecturers, are in the frontline for educational process and provide teaching and support for their students, it is vital to take actions to reduce their anxiety levels since dysfunctional anxiety levels were reported to be strong precursors of negative mental consequences including psychological distress, depression and other psychological disorders (Allen, Rowan, & Singh, 2020).

## **V. Conclusions and implications for practice**

Palestinian community; especially those living in the Gaza Strip, suffer from many stressors due to the hard conditions they live in. COVID-19 pandemic is a new stressor which was added to their list. The results of this study revealed variant levels of anxiety among staff of the Islamic University of Gaza. The new experience of eLearning added to the stress and contributed to higher level of reported anxiety among IUG staff. Several factors were reported to impact reported levels of anxiety. To reduce levels of anxiety among IUG staff, effective training related to COVID-19 preventive measures and providing counseling for stress management may help the university staff to tolerate COVID-19-associated stress and mitigate their anxiety. On the other hand it helps them to improve their work performance and act as supporters for the university students.

Moreover, little attention has been paid to the mental health effects of the COVID-19 pandemic locally among an already stressed Palestinian community. Creating especial psycho-social support programs such as: providing counseling services in the universities and setting channels of one-to-one online or phone counseling for the staff may be effective measure to alleviate the negative psychological effects of COVID-19 pandemic. This also will help to enhance the resilience and coping of the universities staff and students as well. So, the researcher hopes that the findings of this study will stimulate all involved stakeholders to take recommended actions to reduce levels of anxiety among variant groups of the Palestinian community, including staff of Palestinian universities to enhance their coping mechanisms during the COVID-19 pandemic and to avoid malicious effects of high stress and anxiety levels.

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