Health Anxiety among Educational Workers during COVID-19 Pandemic

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Abstract

The COVID-19 pandemic has significantly affected many educational systems worldwide. Understanding educational workers' mental health statuses can help them recover from the high rates of psychological disorders they have experienced during the pandemic. As such, this study aimed to investigate the health anxiety levels of educational workers and their association to sociodemographic variables during the COVID-19 pandemic. A cross-sectional approach using an online questionnaire was conducted in Saudi Arabia between May 14 and 16, 2021. A total of 514 participants completed a two-part questionnaire, which included sociodemographic information (e.g., gender, age, marital status, citizenship status, education level, family members infected by COVID-19, time spent following COVID-19 news per day, and history of mental illness) and the Short Health Anxiety Inventory (SHAI). The findings revealed that 30.7% of the participants reported elevated levels of health anxiety. Furthermore, in a regression analysis, women, single individuals, residents, and people with lower educational levels presented greater risk factors for health anxiety. This study suggests that attention should be given to the most vulnerable groups of educational workers by providing them with supportive programs.

Introduction

The COVID-19 pandemic and associated measures to prevent the spread of the virus, such as home isolation and social distancing, have negatively affected many people's mental health worldwide. Depression, poor sleep, post-traumatic stress, and panic disorder are among the psychological health issues associated with the COVID-19 pandemic (Rajkumar, 2020). In addition, educational workers have experienced several psychological burdens because of the pandemic, such as having to adapt to new work conditions and implement distance learning without previous training or with limited resources (Kibbey, Fedorenko, & Farris, 2021; Stachteas & Stachteas, 2020).

Despite the reassurance by medical practitioners they are of good health, individuals with health anxiety (medically known as illness anxiety disorder) are characterized by having a severe preoccupation with their health and fear they may have a life-threatening illness based on their misinterpretations of bodily sensations(Sood, 2020). As such, health anxiety includes a mixture of beliefs and misinterpretations of physical feelings, meaning a person may have an unrealistic fear of being afflicted by a medical condition or believe they are at high risk of becoming (Hart & Björgvinsson, 2010; Longley, E Calamari, Noyes, Meyers, & McDowell, 2014). When people experience a degree of health anxiety that motivates them to seek appropriate medical care, it is often regarded as normal. However, this anxiety may become a disorder if a person's concern for their health is disproportionate to the degree of medical risk their suspected illness poses, especially if it impairs their functioning as it relates to their work, social life, and family relationships. In the context of the COVID-19 pandemic, a moderate degree of health anxiety is considered normal, and it may even be required for individuals to adapt to the new situation. However, people with high health anxiety are more likely to misunderstand harmless symptoms and physical changes as indications of infection; these misinterpretations may influence their behavior and ability to make reasonable decisions. For example, people with high health anxiety may frequently visit hospitals, placing increased pressure on health care resources, or they may delay obtaining necessary health care because of a fear of becoming infected by the physician (Haig-Ferguson, Cooper, Cartwright, Loades, & Daniels, 2021; Hedman et al., 2015). This level of severe health anxiety is diagnosed as hypochondriasis (Stachteas & Stachteas, 2020; Weck, Richtberg, & Mb Neng, 2014). Equally important, individuals with low health anxiety may neglect to follow precautionary measures, which exposes them to the risk of infection (Taylor, Asmundson, & Hyprochondria, 2004).

Researchers' interest in measuring health anxiety during the COVID-19 pandemic has focused primarily on health care workers (e.g., (Ardakani et al., 2021; Mohd Salleh Sahimi et al., 2021) and the general public, but little is known about educational workers' health anxiety. Therefore, the current study seeks to pay timely attention to the psychosocial health of educational workers during the COVID-19 pandemic because the educational sector has been significantly affected by the pandemic (Schleicher, 2020). This study aims to investigate the levels of health anxiety and their association with sociodemographic variables among educational workers and was guided by two questions:

1. What is the level of health anxiety among education workers during the COVID-19 pandemic?
2. What is the impact of sociodemographic variables (e.g., gender, age, marital status, citizenship status, education level, family members infected by COVID-19, time spent following COVID-19 news per day, and history of mental illness) on health anxiety?

Literature Review

In reviewing the literature on health anxiety during the COVID-19 pandemic, we determined that limited studies have been conducted about the educational sector. However, several studies have attempted to examine the impact of sociodemographic variables on their general public's health anxiety during the COVID-19 pandemic, which will be reviewed in the following paragraphs.

When considering gender, the majority of the previous studies agreed that health anxiety in women is more significant than in men (Balkhi, Nasir, Zehra, & Riaz, 2020; Kazan Kızılkurt, Yılmaz, Noyan, & Dilbaz, 2021; Okoi & Etim, 2021; Özdin & Bayrak Özdin, 2020; Qiu et al., 2020). However, there was a discrepancy in the results of previous studies about the effects of the age variable. For example, (Qiu et al., 2020)found that participants under the age of 18 had lower anxiety levels than those who were older, and participants above 60 years of age presented the highest level of anxiety. Similarly, (Okoi & Etim, 2021) reported an association between age and heath anxiety for which older individuals showed more health anxiety symptoms. Additionally, (Balkhi et al., 2020) found that participants who were older than 35 are more likely to feel anxious. However, other studies have concluded that health anxiety did not change in relation to age, and no significant difference between younger and older age groups was present (Özdin & Bayrak Özdin, 2020)

Moreover, other sociodemographic variables that may affect health anxiety during the COVID-19 pandemic have been investigated. For instance, (Kazan Kızılkurt et al., 2021)reported that unmarried individuals, individuals who had a relative at risk of being infected by COVID-19, and individuals with chronic illnesses had higher health anxiety levels. Along the same lines, (Kazan Kızılkurt et al., 2021)found that a person's marital status, education level, and the degree to which they followed news about COVID-19 were associated with health anxiety. Specifically, the researchers reported the health anxiety of married individuals was higher than single people, and individuals with an education level of high school or below had lower health anxiety. Additionally, 76.9% of the participants spent 1 to 3 hours each day following the news about COVID-19, and the researchers reported these participants had high anxiety levels. (Dai et al., 2020)also conducted a systematic review to summarize the extant literature that examined psychological distress during the COVID-19 pandemic among the general public in the following countries: China, Spain, and Italy, Iran, the United States of America, Turkey, Nepal, and Denmark. In all eight countries, the researchers reported their populations had relatively high anxiety levels. They described the risk factors associated with distress measures, which included being a woman, belonging to a younger age group (≤ 40 years old), and having frequent exposure to COVID-19 news.

In the context of Saudi Arabia, the first registered case of COVID-19 occurred on March 2, 2020. The Saudi government took immediate steps to ensure the safety of all citizens (Saudi individuals) and residents (non-Saudi individuals) by adopting preventative measures, such as proving online alternatives to in-person attendance at work and educational facilities. Furthermore, several studies examined sociodemographic factors in relation to the general public's health anxiety during the COVID-19 pandemic. For example, (Alyami, Naser, Dahmash, Alyami, & Alyami, 2021)conducted an online survey to collect data from participants between March 27 and April 27, 2020, and they reported that citizenship and marriage contributed to a higher risk of developing health anxiety than other demographic factors such as gender and educational levels. Additionally, the researchers noted that women were more likely to experience anxiety symptoms. Along the same lines, (Alamri et al., 2020)used an online questionnaire to collect data from participants between May 10 and 16, 2020. They reported the health anxiety level among the public was moderate to severe, but the anxiety level was significantly higher among women, younger adults, and single individuals. The researchers also identified an association between a participant's history of chronic medical issues and increased anxiety while finding that an individual's educational level has no significant association with health anxiety. Additionally, (Alamri et al., 2020)indicated that the level of anxiety among residents was higher than citizens. Furthermore, by conducting an online survey(Al Saleh, Al Nasser, Al Harabah, Al Orefan, & Mousa, 2021) came to a different conclusion, finding that age was negatively correlated with anxiety and young adults reported having higher anxiety levels than older adults. They also explained that anxiety levels among single individuals compared with married, divorced, and widowed individuals were higher. The researchers likewise indicated there was a positive correlation between anxiety and having chronic illnesses or a family member who was an older adult or sick.

Moreover, to investigate the impact of news coverage of the pandemic on mental health, (Zakout, Alreshidi, Elsaid, & Ahmed, 2020) found that 55.8% of the study's participants reported extensive COVID-19 media coverage caused higher rates of mental distress. Additionally, the anxiety levels of female participants were higher than men's levels. Overall, this study aims to contribute to this growing area of research on health anxiety by examining educational workers' health anxiety levels during the COVID-19 pandemic and studying the impact of selected sociodemographic variables on health anxiety.

Methodology

Study Design and Sampling Procedures

A cross-sectional design was utilized for this study (Eyisi, 2016) The study's target population was educational workers (i.e., school system employees, such as teachers, principals, educational administrative staff) from the city's offices of education in the Eastern Province of Saudi Arabia. The study's researchers purposefully selected an Office of Education in a mid-sized city that was willing to participate in this study. A total of 514 educational workers were reached, including 332 male and 182 female participants. Before participants could access the questionnaire, they were informed their participation was voluntary and their identity would be kept anonymous. They could also withdraw from completing the questionnaire at any time. An online questionnaire was employed to collect data from the participants between May 14 and 16, 2021, by using QuestionPro survey software.

Data Collection and Procedures

Data were collected through a two-part online questionnaire. The first part focused on questions about sociodemographic data that had been developed by the researchers based on related literature. The participants were first asked to answer seven questions to provide the following sociodemographic information: gender, age, marital status, citizenship status, education level, family members who were infected with COVID-19, history of mental illness, and the amount time they spent following COVID-19 news per day. The second part included the Short Health Anxiety Inventory (SHAI), a self-report questionnaire that included 18 items (Salkovskis, Rimes, Warwick, & Clark, 2002) Each item on the questionnaire addressed a specific health anxiety symptom, such as worrying about health, having thoughts of illness, being aware of bodily sensations or changes, and being afraid of developing a severe illness. Each item consisted of four statements, and participants were asked to choose one statement that best described their feelings. Each item was scored on a scale (e.g., a = 0, b = 1, c = 2, d = 3), and the total score ranged from a minimum of 0 to a maximum of 54 points. Moreover, several studies attempted to determine cut-off scores for the SHAI to identify individuals with elevated levels of health anxiety. For the current study, a cut-off of 27 points was used to identify participants with elevated levels of health anxiety because it is in line with the aim of this study (Abramowitz, Deacon, & Valentiner, 2007; Alberts, Hadjistavropoulos, Jones, & Sharpe, 2013).

For the purpose of this study, the SHAI was translated to Arabic through the following process. First, the translation to Arabic was performed by two bilingual mental health colleagues who discussed and reconciled the translations until they reached a provisional, consensual version. Then, a colleague who specialized in Arabic to English translation but was not exposed to the original SHAI version was asked to back-translate the agreed-upon Arabic version to English. Finally, the study researchers compared the English back-translation against the original SHAI, and a final Arabic version was formed. The final Arabic version was pilot tested on five individuals who were not part of the study, and they did not report any misunderstandings or detect ambiguities in the final Arabic version of the SHAI. Regarding its reliability, the internal consistency of the Arabic version of the SHAI was calculated at 0.84. The psychology department review committee approved the final Arabic version of the SHAI (No. 42/20/DP, 21 March 2021).

Results

First research question: Levels of health anxiety

Descriptive statistics using IBM SPSS software (version 25) was carried out to investigate the levels of health anxiety among the participants and analyze their responses to the sociodemographic questions. Descriptive statistics included calculating the frequency, percentage, range, mean, standard deviation (SD), mode, and minimum and maximum scores. Table 1 presents the participants' scores on the SHAI questionnaire.

Table 1. *Descriptive statistics for the participants' responses to the SHAI*

Range of total SHAI score	Frequency	Percentage (%)
12 ≤ score < 21	133	25.9
21 ≤ score < 27	223	43.4
27 ≤ score ≤ 47	158	30.7
Total	514	100

The table above reveals that a grand total of 69.3% of the participants scored less than the cut-off point of 27, indicating no elevated health anxiety levels. Additionally, 30.7% of the participants reported elevated levels of heath anxiety, and minimum and maximum scores were 12 and 47, respectively. It is worth mentioning that the mean scores of participants were found to be 24.9 (SD = 6.16). Also, the data set mode was calculated at 22 points with 50 frequencies, and only two participants reported 47 points. Furthermore, Table 2 presents the participants' responses to the sociodemographic questions.

Table 2. Participants' Sociodemographic Responses

Sociodemographic Factors		Number of Responses	Percentage
Gender	Male	332	64.59%
	Female	182	35.41%
Age	Mean (SD)	38.93 (9.60)	-
	Range	20–60	
Marital Status	Single	124	24.1%
	Married	390	75.9%
Citizenship Status	Citizen	326	63.4%
	Resident	188	36.6%
Education Level	High school	47	9.1%
	Bachelor's degree	297	57. 8%
	Postgraduate	170	33.1%
Family Members Infected by COVID-19	Yes	42	8.2%
	No	472	91.8%
Time spent Following COVID-19 News per Day	Less than 1 hour	347	67.5%
	1 to 2 hours	101	19.6%
	More than 2 hours	66	12.8%
History of mental Illness	Yes	50	9.7%
	No	464	91.3%

Table 2 shows that most of the participants were married (75.9%), and most of them had obtained a bachelor's degree (57.8%). Additionally, a low percentage of the participants reported a history

of mental illness (9.7%), and the majority of them spent less than 1 hour per day following COVID-19 news (67.5%).

Second research question: The impact of sociodemographic factors on health anxiety

A multiple linear regression analysis was conducted in IBM SPSS software (version 25) with heath anxiety scores. The predictor variables included gender, age, marital status, citizenship status, education level, family members infected by COVID-19, time spent following COVID-19 news per day, and history of mental illness. A stepwise approach was employed because this method allowed the researcher to enter the sociodemographic variables into the predictive equation according to their association with the dependent variable (e.g., health anxiety), which is the method that is most consistent with the aim of the study (Howell, 2012) Predictor variables identified by stepwise multiple linear regression analysis are displayed in the table below.

Table 3. Stepwise Multiple Linear Regression Analysis Predictor Variables of Health Anxiety

Predictor Variable*	Unstandardized Coefficient	Standard Error	Standardized Coefficient	*t*	*p*
(Constant)	28.079	2.323	-	12.085	<.001
Gender	2.514	.557	.194	4.510	<.001
Marital status	-2.396	.621	-.165	-3.860	<.001
Citizenship status	1.618	.557	.126	2.904	.004
Education level	-1.063	.442	-.104	-2.403	.017

* Coding: Male = 1 & Female = 2; Single = 1 & married = 2; Saudi = 1 & non-Saudi = 2; and high school or less = 1, Graduate = 2, & Postgraduate = 3.

The results of the multiple linear regression that used the stepwise method revealed that gender, citizenship status, education level, and marital status were significant predictors of participants' health anxiety, and these four variables explained almost 10% of the variance, $F_{(4, 509)} = 14.82$, $p < 0.001$(Adjusted R^2 = 0.097). Furthermore, age, family members infected by COVID-19, time spent following COVID-19 news per day, and history of mental illness did not significantly predict observed variance in health anxiety scores. As such, it can be concluded from the significant regression equation that female gender, single marital status, resident, and educational level are significant predictors for health anxiety.

Discussion

This study aimed to investigate Saudi educational workers' health anxiety during the COVID-19 pandemic and examine the sociodemographic variables affecting them. Although the SHAI is a psychometrically sound measurement tool for evaluating health anxiety across samples(Alberts et al., 2013), caution should be exercised when distinguishing among normal, moderate, and severe health anxiety because of the agreement reached in previous studies about specific cut-off points. The current study showed that 30.7% of the participants reported elevated levels of health anxiety, and the mean score of participants was found to be 24.9 (SD = 6.16). As mentioned previously, only a few studies have examined the health anxiety of educational workers during the COVID-19 pandemic. In the context of studies health anxiety of the general public that used the SHAI, (Landi, Pakenham, Boccolini, Grandi, & Tossani, 2020) indicated that 33.8% of their sample reported moderate symptoms, while 8.1% reached severe levels of health anxiety. Furthermore, the mean health anxiety score reported by the participants in (Kazan Kızılkurt et al., 2021)was 17.1 (SD = 6.90), which is lower than the current study's results.

When examining the impact of sociodemographic variables on health anxiety, we found that women had higher health anxiety levels than men, which is in line with previous studies conducted on the general public (Alamri et al., 2020; Alyami et al., 2021; Kazan Kızılkurt et al., 2021; Okoi & Etim, 2021; Özdin & Bayrak Özdin, 2020; Qiu et al., 2020)As such, existing research indicated that disease outbreaks have a higher effect on women than men, and women are therefore more susceptible to developing post-traumatic stress disorder (Alshehri, Alatawi, Alghamdi, Alhifany, & Alharbi, 2020). The current study results further revealed that an individual's age does not affect in

health anxiety. Age has been an undetermined variable within the context of the general public's health anxiety. Although the current study's results differ from published studies (Balkhi et al., 2020; Okoi & Etim, 2021), they are consistent with those of (Liu, Zhang, Wong, & Hyun, 2020; Özdin & Bayrak Özdin, 2020). Previous studies have heavily relied on quantitative data collection, and thus, they failed to present a clear explanation of the impact of sociodemographic variables on health anxiety.

Regarding the educational level variable, health anxiety was lower among participants with more education. These results differed from (Alamri et al., 2020; Okoi & Etim, 2021), but they are consistent with other studies that consider the general public (Alamri et al., 2020; Okoi & Etim, 2021). It could also be argued that educational workers face many daily challenges to prepare students to meet today's national and international educational standards (Houle, 2006; Weck et al., 2014). Therefore, a possible explanation for this study's results is that educational workers may be better equipped to handle stressful problems and encounters by using scientific thinking, practical planning, and collaborative work. Furthermore, this study's results showed that married individuals had less health anxiety than single people and residents, which is consistent with most health anxiety studies about the general public (e.g., (Al Saleh et al., 2021; Alamri et al., 2020; Kazan Kızılkurt et al., 2021; Zakout et al., 2020). This can be attributed to the idea that marriage provides an individual with the opportunity to satisfy a need to give and receive affection and experience intimacy, belonging, and companionship during stressful situations (Eyisi, 2016; Rouse, 2004) conducted a systematic review to examine studies about marital satisfaction during the COVID-19 pandemic. The researchers indicated that responsivity between satisfied married couples reduced stress during the COVID-19 pandemic, and married couples had lower stress during the pandemic than single people. Along the same lines, this study's results showed that citizens' health anxiety was lower than residents, which is consistent with some studies conducted on the general public (e.g.,(Alyami et al., 2021; Zakout et al., 2020).

Regarding family members infected by COVID-19, time spent following COVID-19 news per day, and history of mental illness, the current study showed these variables did not affect health anxiety. These results differed from the results of (Al Saleh et al., 2021) that reported that time spent reading the news is positively associated with anxiety. Additionally, (Alyami et al., 2021)indicated that people whose family members had been infected with COVID-19 had high levels of health anxiety. Possible explanations for the current study's results are the increasing number of people from across the nation who have recovered from COVID-19 and the availability of information about the virus delivered to the public through news reports. Furthermore, (Özdin & Bayrak Özdin, 2020) regression analysis indicated a history of psychiatric illness was a risk factor for health anxiety. Overall, results related to a person's history of mental illness or disorder need to be interpreted with caution because more data is required to examine their impact on health anxiety.

Conclusion

Health anxiety is a mental health issue that has increased in prevalence among members of society during the COVID-19 pandemic. Anxiety is one form of psychological distress that influences how an individual responds during an emergency, stressful situation, or pandemic. The aim of the current study was to investigate the health anxiety levels of educational workers and their association to sociodemographic variables during the pandemic. The results revealed that 30.7% of the participants reported elevated levels of health anxiety. Additionally, in a regression analysis, women, single individuals, residents, and people with lower educational levels presented greater risk factors for health anxiety. The current study's results provide insights for educational decision-makers about which groups of educational workers are most vulnerable to health anxiety to provide them with preventive and supportive programs.

Recommendations

We recommend using a longitudinal study for future studies to monitor changes in health anxiety among workers in the educational sector. Additionally, it would be beneficial to have a qualitative account of health anxiety among different age groups in future studies. Future research also should investigate how different types of mental illnesses or disorders affected or affect health anxiety during the COVID-19 pandemic.

Limitations

The findings in this study are subject to two limitations. First, causal inferences of the presented data and related analyses were limited because of the study's cross-sectional nature. Second,

although the educational system in Saudi Arabia is centralized, the purposeful sampling of the current study may be a limitation in terms of the generalization of the results.

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