PJAHS
Philippine Journal of Allied Health Sciences

Original Article

Assessment of the Level of Health Anxiety among College Students in a Private Higher Educational Institution during COVID-19

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Article Received: October 29, 2021

Article Accepted: March 31, 2022

Article Published: August 15, 2022

Abstract

Background: Worldwide, people who were exposed to the virus reported heightened health anxiety compared to the individuals with the absence of exposure related to the COVID-19 during the pandemic. Young adults reported higher levels of health anxiety when compared to other groups. To a certain extent, health anxiety serves a protective role until it becomes perseverate and dysfunctional. The researchers aim to describe the level of anxiety of college students by utilizing the COVID-19 Anxiety Syndrome Scale to form a foundation for programs and policies that would address dysfunctional health anxiety. **Methods:** The researchers used a quantitative, non-experimental, descriptive online survey research design to describe the level of COVID-19 health anxiety among college students in a private higher educational institution in Central Luzon, Philippines. **Results:** A total of 378 college students completed the survey. Analysis revealed that participants checked for symptoms of COVID-19 and were worried about possibly contracting COVID-19 for more than 7 days within two weeks (*M*=3.9; *SD*=1.5). It also revealed that the participants avoided situations that put them at risk for COVID-19 at a similar frequency (*M*=4.1; *SD*=0.4). **Conclusion:** The study reveals the sampled college students manifested COVID-19 anxiety for more than 7 days in a 2-week timeframe. This means that the students spend a significant amount of their time, in a two-week timeframe, worrying, checking, and avoiding situations that may put them at risk for COVID-19. These anxiety-induced behaviors may hinder the accomplishment of their activities of daily living or productive pursuits.

Key Words*: health anxiety, checking, avoidance, college students, COVID-19*

INTRODUCTION

The coronavirus disease 2019 pandemic (COVID-19) is the first in recent history to pose a significant challenge to global public health.[1] Common signs and symptoms of COVID-19 are fever, cough, difficulty in breathing or shortness of breath, and body pain or fatigue.[2] The pandemic has had a varying and widespread effect on the world, causing great fear and worry to many, which negatively affect their mental health.[3,4] As of November 2021, over 225 million people have COVID-19, with over 5 million deaths reported worldwide,[5] more than 2 million confirmed cases in the Philippines, and over 40 thousand reported deaths locally.[6]

The COVID-19 pandemic has significantly impacted people's physical and mental health and well-being. Due to the rising COVID-19 cases, people started developing health-protective attitudes and displaying protective behaviors focusing primarily on preventing the transmission of COVID-19 infection, with little to no attention focused on the psychosocial consequences caused by the pandemic.[7,8] High COVID-19 infection and mortality rates increased the risk of individuals developing posttraumatic stress disorder, depression, and anxiety.[8,9] It has also been documented that emotional stress caused by the implementation of unfamiliar health policies, mounting monetary damage, and conflict from authorities during the pandemic

affected the lives of individuals.[10] These psychological problems arising from the COVID-19 pandemic may result in long-term health difficulties, isolation, and prejudice.[11]

Health anxiety has been observed to be one of the key psychological factors influencing how an individual responds to a viral outbreak or a health crisis.[12] Health anxiety is characterized by an overabundance of awareness of one's physiological reactions (e.g., high body temperature, coughing, and painful muscles) and the tendency to associate these sensations as symptoms of a serious health condition.[13,14] It is argued that everybody has experienced health anxiety to some degree at one point in time.[15] Although, many individuals are affected by this heightened health anxiety regularly or persisting over time.[16] These individuals are afraid of becoming ill or dying, feeling hopeless, and being stigmatized by other people.[14] Health anxiety has many aspects, including distressing emotions, physiological arousal, and associated bodily sensations, thoughts, images of danger and avoidance, as well as other health-protective attitudes and protective behaviors.[13,14,15,16]

Individuals who had a history of excessive health anxiety before the COVID-19 outbreak were prone to detrimental psychological health results because they tended to misunderstand their heightened physical perception, which can provoke an intense fear and agitation of acquiring the disease.[14,17,18] Due to the pandemic, higher levels of health anxiety worldwide have been reported, specifically in places with high positivity rates of COVID-19,[19] which can affect activities of daily living. People with minimal health anxiety are likely to follow instructions for managing COVID-19 and respond calmly.[14] On the other hand, if the individuals have higher levels of anxiety, they might be hesitant on getting professional treatment due to a disproportional fear of hospitals being sources of infection.[16]

The ubiquity of, and non-specific signs and symptoms of COVID-19 exacerbate health anxiety, prompting individuals to develop checking behaviors, such as checking for symptoms and risk factors,[20] and constant cleaning or disinfecting shared structures like handrails and seats in public vehicles.[21] Moreover, other individuals with heightened health anxiety have been reported to develop avoidant behaviors like active refraining from visiting crowded places and non-use of public transportation.[22]

The ongoing pandemic has placed students with an overwhelming psychological health burden that would prompt immediate assessment and rapid intervention.[23] Young adults, those between 18–30 years old, reported a higher degree of health anxiety, risk of disease, and unfavorable repercussions compared to the older adults.[24] In January 2021, more than 6,000 Filipinos aged 20-29 years old were diagnosed with COVID-19.[25] The shift to online learning in the Philippines due to the pandemic has caused excessive long-term isolation from peers that harm psychological well-being.[14] Students exhibited more significant psychological impacts, such as anxiety and the presence of stress symptoms, than those employed.[7,23,24,26] Assessments of college students' COVID-19-related health anxiety in the region are sparse.

Therefore, this study aims to describe the level of anxiety of college students by utilizing the COVID-19 Anxiety Syndrome Scale. This study may help identify the possible sources of COVID-19 anxiety that the Commission on Higher Education (CHED) and the institutions could consider and inform school policy on possible health protocols on the gradual resumption of face-to-face learning during and after the pandemic. Likewise, the study can inform institutional, healthcare professionals and self-care practices relating to COVID-19 health anxiety.

METHODS

Ethical Consideration. Non-maleficence was manifested when data was gathered online to avoid disease transmission during the pandemic, and it was maintained by clearly communicating the purpose of the research and the type of information that will likely be requested. It was further ensured by avoiding emotional tension, anxiety, pressure, or self-doubt inflicted on participants. To respect their data privacy rights, providing names was optional to protect the participants' identities. To safeguard justice,

participants were informed of the risks (getting their personal information such as age and department) and the benefits of their participation before beginning the survey. The participants were informed that they could withdraw from the study at any time, without being required to give a reason, thus respecting autonomy. Researchers were transparent with the data gathering procedure and how the data would be utilized. Beneficence is present because the goal is to disseminate the results to the community to better understand health anxiety among college students. To ensure data safety, the lead researcher stored all data on a protected device for five (5) years, or up to ten years if the data is to be used for future studies. Only members of the research team have access to the data. The study was approved by the Holy Angel University Institutional Review Board.

Study Design. A quantitative, cross-sectional, non-experimental, descriptive research study design was used to describe the level of health anxiety among college students in a private higher educational institution during the COVID-19 pandemic. Age, gender, department, and mode of transportation were used to describe the sample population. The level of anxiety among college students was measured using the COVID-19 Anxiety Syndrome Scale.

Sampling and Setting. From the total population of 9,030 college students for the academic year 2020-2021 in a private higher educational institution in Angeles City, the number of enrollees computed on OpenEpi.com (version 3.01) to participate in the study was 369, which has a 95% confidence level.[27] Stratified sampling was also employed to ensure that every subpopulation representative per department had an equal opportunity to sample because their populations were not comparable in size. We used this strategy to create strata based on the total population of each department to improve generalizability. The stratified sampling method addresses the flaws of convenience sampling by minimizing sampling bias.

Inclusion and Exclusion Criteria. Participants must be at least 18 years old, be college students currently registered at a private higher educational institution in Central Luzon for the school year 2020–2021, and reside in a location with a high density of active COVID-19 cases. Students below 18 years of age, enrolled in a different university, or not enrolled for the academic year 2020–21, and those living in a location with zero COVID-19 positive cases were excluded.

Instruments

Demographic Data. The demographic information acquired from the participants included their age, gender, department, and mode of transportation (public transportation, private transportation, personal vehicle, or walking). Questions in this section were answered through multiple choices provided. Participants had the option to answer the selections offered on a list; if their answers were not included in the list, another choice was to fill in the blank after the option "others." Participants were allowed to select more than one mode of transportation.

COVID-19 Anxiety Syndrome Scale (C-19ASS). Nickelic and Spada's COVID-19 Anxiety Syndrome Scale consists of items constructed as statements to which participants could react on a five-point Likert-type scale to indicate their level of agreement (1=Not at all, 2=Rarely, less than a day or two, 3= Several days, 4= More than seven days, and 5=Nearly every day). It has two factors: Checking and worrying, and Avoidance. Factor 1 is about checking and worrying, consisting of questions 2, 4, 6, 7, 8, and 9. Meanwhile, Factor 2 is about avoidance due to the fear of contracting coronavirus, which consists of questions 1, 3, and 5. The Cronbach's alpha for factor 1: Checking and Worrying and factor 2: Avoidance were 0.86 and 0.77, respectively. Both Cronbach's alphas were deemed to be acceptable.[28]

Data Collection Procedure. As the study was conducted during the COVID-19 outbreak, at the time when the majority of the Central region of Luzon was placed under Modified General Community Quarantine (measures in place: limited interzonal mobility, schools remained closed, only essential services and business remained open) and vaccination against Covid-19 has not begun in the region. The data was collected using Google Forms and disseminated via social media platforms (e.g., Facebook and Messenger). We utilized a convenience sampling

design in distributing the questionnaires in Google Forms to people who are close at hand or those who are easy to reach through different social media platforms. Participants who met the inclusion criteria were given the hyperlink to the Google form. A page with the introduction to the project and necessary elements of an informed consent (including contact information of the proponents and institutional review board) welcomed the prospective participants. Participants who signified their consent to participate through the Google Form then proceeded to the questionnaire proper. Those who did not signify their consent to participate were redirected to the end of the form. The end of the form invited participants to share the Google Form with other individuals. The data collection period was from February 4 to 25, 2021.

Data Analysis. Analysis of the data was performed with the use of Microsoft Excel v. 2020 and is presented using tables. For the collected data on demographics, we used descriptive statistics (frequency and mean) to analyze age, while a frequency distribution table was used for gender, department, and mode of transportation. Meanwhile, descriptive statistics (mean and standard deviation) were used to analyze the results of the COVID-19 Anxiety Syndrome Scale.

RESULTS

A total of three hundred eighty-three (383) college students completed the survey for this study. However, we removed five due to not following the inclusion criteria. Two participants came from different schools, two were under 18, and one did not agree to participate in the study, leaving a total of 378 students included in the analysis. The participants were on average 20.4 years old, with many of the participants being 21 years old (n=165; 43.65%) at the time of the survey. The majority of the participants were female (n=210; 55.56%). Among the departments, the School of Engineering and Architecture had the most participants (n=93; 24.6%), while the College of Criminal Justice Education and Forensics had the least (n=19; 5%). Lastly, the most frequently used mode of transportation by the participants is public vehicles (n=268; 70.9%). Meanwhile, private vehicles were the least used mode of transportation (n=67; 17.70%).

Analysis of the responses to the individual questions revealed that in two weeks, participants checked their selves for symptoms of coronavirus (M=3.4; SD=1.5) and read about news relating to coronavirus at the cost of engaging in work (M=3.6; SD=1.2) for several days. Meanwhile, participants spent "more than 7 days" "being concerned about not having adhered strictly to social distancing guidelines for coronavirus" (M=4.0; SD=1.3), "checking family members and loved ones for the signs of coronavirus" (M=4.0; SD=1.3), "paying close attention to others displaying possible symptoms of coronavirus" (M=4.2; SD=1.2) and "imagining what could happen to their family members if they contracted coronavirus" (M=4.2; SD=1.2) in the same period of two weeks. When taken as a whole (Grand Mean=4.1; SD= 0.4), analysis shows that the participants have spent more than 7 days checking and worrying about COVID-19.

Analysis of questions in factor 2 revealed that in two weeks, participants avoided using public transport (M=4.2; SD=1.3) and avoided touching things in public spaces (M=4.5; SD=1.0) because of the fear of contracting coronavirus for more than 7 days. On the other hand, participants avoided going out to public places such as shops and parks for several days (M=3.7; SD=1.3). On average, participants have practiced avoidance for more than 7 days (Grand Mean =4.1; SD=0.4) in two weeks.

DISCUSSION

The study aims to contribute to Philippine literature by describing college students' COVID-19 health anxiety. The majority of the participants were young adults and females who primarily used public transportation to get around. The results of the study revealed that college students exhibited checking and worrying behaviors and avoidant behaviors for 7 or more days within a two-week timeframe.

Despite the travel restrictions and mass transportation protocols (disinfection, limited

spacing, mandatory face masks, and shields) to control the further spread of the virus,[29] public vehicles are the most frequently used among all the modes of transportation.

Table 1. Participants Demographic Profile

Age	***f***	**%**
18	19	5.03
19	50	13.23
20	109	28.83
21	165	43.65
22	33	8.73
23	2	0.53
Mean	20.4	
Sex	***f***	**%**
Male	168	44.44
Female	210	55.56
Department	***f***	**%**
School of Nursing and Allied Medical Sciences	69	18.3
School of Engineering and Architecture	93	24.6
School of Business and Accountancy	66	17.5
School of Arts and Sciences	35	9.3
School of Tourism and Hospitality Management	28	7.4
School of Education	27	7.1
School of Computing	41	10.8
College of Criminal Justice Education and Forensics	19	5
Mode of Transportation/ Mobility *(select all that apply)*		
Public Vehicle	268	70.90%
Private Vehicles (Taxi, Grab, etc.)	67	17.70%
Personal Vehicle	186	49.21%
Walking	115	30.42%

This mirrors the transportation choice of many Filipinos. The high dependence on public transport may be due to it being the most economical choice for college students who often have limited resources.[21]

The US Centers for Disease Control and Prevention have advocated and recommended strict observance of physical distancing standards. The agency asserts that public health efforts, such as physical distancing, are required to stop COVID-19 from spreading.[30] However, physical distancing behaviors (keeping a range of at least two meters from individuals outside of the household, reducing one's number of close interactions, and minimizing gatherings) are comparatively more challenging for many citizens to begin and sustain than some other critical transmission mitigation practices like handwashing.[31] This could be due to physical distancing being primarily influenced by the available space, a keen awareness of the person, and those nearby.[32,33]

The college students' checking and worrying behaviors may stem from their knowledge of Pampanga's high COVID-19 case density at the time of the survey.[34] With the heightened perception of risk and ease of transmitting COVID-19,[12] individuals became more cautious, as evidenced by their frequent checking and worry about related symptoms in themselves, their family members, and other people. Common among these behaviors are frequently checking for fever, visiting the doctor several times to eliminate the possibility of COVID-19, as well as undergoing serial laboratory screening.[35,36] These safety and checking behaviors have been linked to greater COVID-19-related fear.[20] These behaviors can begin to

Table 2. COVID-19 Anxiety Syndrome Scale Factor 1: Checking and Worrying

Question	*M*(*SD*)	Interpretation
2. I have checked myself for symptoms of coronavirus (COVID-19).	3.4 (1.5)	several days
4. I have been concerned about not having adhered strictly to social distancing guidelines for coronavirus (COVID-19).	4.0 (1.3)	more than 7 days
6. I have read about news relating to coronavirus (COVID-19) at the cost of engaging in work (such as writing emails, working on word documents or spreadsheets).	3.6 (1.2)	several days
7. I have checked my family members and loved one for the signs of coronavirus (COVID-19).	4.0 (1.3)	more than 7 days
8. I have been paying close attention to others displaying possible symptoms of coronavirus (COVID-19).	4.2 (1.2)	more than 7 days
9. I have imagined what could happen to my family members if they contracted coronavirus (COVID-19).	4.2 (1.2)	more than 7 days
Grand Mean (SD)	3.9 (1.5)	more than 7 days

Table 3. COVID-19 Anxiety Syndrome Scale Factor 2: Avoidance

Question	*m* (*sd*)	Interpretation
1. I have avoided using public transport because of the fear of contracting coronavirus (COVID-19).	4.2 (1.3)	more than 7 days
3. I have avoided going out to public places (shops, parks) because of the fear of contracting coronavirus (COVID-19).	3.7 (1.3)	several days
5. I have avoided touching things in public spaces because of the fear of contracting coronavirus (COVID-19).	4.5 (1.0)	more than 7 days
Grand Mean (SD)	4.1 (0.4)	more than 7 days

interfere with their usual activities of daily living, which can ultimately affect productivity and their perceptions of wellness.[26]

The participants' persistent preoccupation with reading news related to coronavirus in exchange for engaging in productive activities like work or student is a sign of heightened health anxiety and inability to focus. This has been documented as a sign of poor psychological health.[37] The excess and unmoderated posting of content, regardless of veracity, on social media may contribute to the development of anxiety and fixation on unlikely events, which can hinder individuals from reaching their full potential in various domains.[15,16,18]

Participants' reported avoidant behavior due to the COVID-19 pandemic is observed in other student populations as well.[7] Avoiding public venues and public transportation, and unnecessary travel to areas with high risk for COVID-19 are standard practices to prevent COVID-19.[33] Moreover, additional protective behaviors were documented like not touching door handles, and staircase railings at public venues.[38] Individuals with heightened anxiety also report avoiding unnecessary international travel, spiritual gatherings, and the use of a public gym.[39] These behaviors may likely be due to the heightened perceptions of the benefits of avoiding these high-risk areas and situations.[19]

In the current climate of uncertainty, concerns about the pandemic's immediate and long-term impacts on one's health, family, or economy are normal and reasonable. Perseverate worrying, on the other hand, is not. It can be dysfunctional and harmful for both the individual and society when it is disproportionately intense, which significantly interferes with daily problem-solving or goal-oriented behaviors.[40] Excessive and irrational worrying over one's health, for example, may lead to an unnecessary visit to a healthcare professional, putting additional strain on an already overburdened healthcare system.[14] Through recognition of associated symptoms of COVID-19 anxiety syndrome, healthcare professionals can reframe the thinking patterns of highly anxious individuals. Readily addressing

these symptoms of COVID-19 anxiety can take away time and resources from worrying and redirect them to more beneficial pursuits.

The results of the study should be taken into consideration of its limitations. The comparatively small sampling frame and locale limit the generalizability of the results. In addition, the computed number of samples using stratified sampling was not reached to adequately represent the student population. Use of other data collection strategies, other than simply posting on department social media group walls may yield more positively. The use of the internet and social media-based data collection may prevent other willing participants, which can limit representativeness. The cross-sectional nature of the study does not lend an understanding of how health anxiety may change over time. Future researchers may consider using qualitative research designs to improve the current understanding of the context of health anxiety among young adults. Lastly, further study regarding the health anxiety of younger adults is necessary since most of the existing studies' participants are under the age of middle-aged adults. It can increase the possibility of coming up with as well as implementing interventions that can solve or alleviate the health anxiety of college students amidst the pandemic.

CONCLUSION

The findings of the study showed that the participants have been checking and worrying for symptoms of coronavirus and avoiding perceived high-risk venues and situations due to their fear of contracting the coronavirus for more than 7 days in 2 weeks. Despite the limitations, the study provides insights into how young adults from a higher educational institutions reacted and responded to the COVID-19 pandemic. With more than 7 days at any given two-week period spent on anxiety-induced behaviors, young adults may not have enough time to devote to self-actualizing pursuits.

Individual Author's Contributions

All authors were involved in the conceptualization, design, data collection, and analysis. JD, BQ, IM drafted the manuscript for submission. IM, TP, NC have reviewed the results and discussion to be appropriately aligned with the purpose of the study. NC critically reviewed and revised the final manuscript. All of the authors gave their approval for the version to be published. The authors agreed to be accountable for all aspects of the study by ensuring that questions and suggestions related to the accuracy or integrity of all work parts are appropriately investigated and resolved.

Conflicts of interest

The authors report no real or perceived vested interests related to this article that could be construed as a conflict of interest.

Disclosure Statement

This project was internally funded.

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