COVID-19 Anxiety Disorder among Tabuk University Students

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ABSTRACT

During times of pandemic, people are prone to stress- or anxiety-related responses that include fear of becoming diseased, horror of coming into contact with possibly contaminated objects or surfaces, panic of foreigners who might be carrying the fear of the symptomatic consequences of the pandemic, and obsessive-compulsive behaviors. This study reports on findings on the epidemiology of generalized anxiety disorder among students at Tabuk University, Saudi Arabia. The researcher developed and adopted a 25-item Anxiety Disorder and Panic of Coronavirus Scale based on the Composite International Diagnostic Interview (CIDI) 3.0 (to assess DSM-IV disorders) and the Acute Panic Disorder Inventory to measure the anxiety and panic levels related to COVID-19. Participants comprised a random sample of 1512 students from all faculties during April 2020. The researcher used descriptive statistics including frequency and percentage data to describe responses, and the mean and standard deviation of scores for classification of levels of panic and anxiety disorder. T-test was used to test the significant difference of panic and anxiety disorder level to characteristics variables, with p≤0.05 value being considered statistically significant. The study finds that 73% of Tabuk university students have anxiety disorder and panic due to coronavirus at varying levels, from occasionally to all of the time, and the anxiety disorder and panic is affected by student age and academic level.

Keywords: *COVID-19anxiety, students, panic, t-test*

INTRODUCTION

Anxiety

Anxiety is a natural reaction in some situations to perceived threats and tension, and it can be a positive adaptation in galvanizing efforts to overcome challenges and being attentive to dangerous situations. However, when experienced for a prolonged period or due to irrational perceptions, anxiety can be a crippling disorder. Anxiety ranges from normal anxiousness to excessive fear or anxiety. Anxiety disorders have high prevalence, affecting 30% of adults with mental disorders at some pointin their lives. On the other hand, anxiety disorders are treatable with many several available and effective treatments. Treatment aids most people to manage and control their normal and productive lives. Anxiety is defined as the expectation of future fear and related to muscle tension and avoiding behavior. Anxiety disorders can affect people as try to avoid situations that generate or exacerbate their symptoms. They have a direct negative effect on people's life satisfaction, reflected in negative experiences and outcomes in academic achievement, job performance, and personal relationships. There are various types of common anxiety disorders, including generalized anxiety disorder, panic disorder, specific phobias, agoraphobia, social anxiety disorder, and separation anxiety disorder[1]. Panic disorder is the most pertinent to the current study.

Panic Disorder

The fundamental symptom of panic disorder is frequent panic attacks, a crushing mixture of bodily and psychosomatic distress. During an attack, some of the following symptoms may occur in various combinations [1]:

- Palpitations, rapid heart rate
- Sweating
- Trembling or shaky
- Shortness of breath feeling or smothering sensations
- Chest pain
- Feeling dizzy, light-headed, or faint
- A choking feeling
- Numbness or tingling
- Chills

- Vomiting or abdominal pains
- Detached feeling
- losing control fear
- Dying fear

Due to the severity of symptoms, some panic attack experiences maybe considered as heart attacks by their sufferers, and indeed panic disorder (as opposed to individual attacks) is associated with new onset coronary heart disease, acute myocardial infarction, and cardiac mortality, particularly among younger patients [2], as well as chronic obstructive pulmonary disease[3]. Panic attacks may be predictable, such as a reaction to a feared object, or unexpected, and they can actually occur for no reason. The most common age is 22-23 for the onset of panic disorder. Panic attacks may arise with other mental disorders, such as depression or PTSD [1].

COVID-19 Impacts

The novel coronavirus COVID-19 (SARS-CoV-2) is very infectious, but most patients do not experience severe symptoms, and can recover without hospitalization. Higher risk of serious complications is generally only among older adults and patients with 'severe underlying medical conditions like heart or lung disease or diabetes' [4].The virus that causes COVID-19 is transmitted through droplets of an infected person who coughs, sneezes, or exhales; droplets are disseminated to floors and surfaces where they can be transmitted. Infection can occur by breathing in close proximity of someone who has COVID-19, or touching eyes, nose or mouth directly after touch a contaminated surface.

The global community has faced unprecedented challenge in dealing with the COVID-19 pandemic, bringing governments, international organizations, and private sector industries together in collaborative efforts to reduce transmission and develop treatment. Nevertheless, public fear of the virus itself and associated responses (e.g. social distancing measures associated with "lockdown" policies in most countries) has caused widespread panic, anxiety, and stress. The Centers for Disease Control and Prevention [4] notes that anxiety and tension during an infectious disease outbreak may include:

- Worry about personal health and the health of your loved ones

- Disrupted patterns of sleeping or eating
- Difficulty sleeping or concentrating
- Exacerbation of chronic health problems
- Negative mental health conditions and disorders
- Increased consumption of alcohol, tobacco, or other recreational drugs

The purpose of this study is to determine the prevalence of anxiety related to corona virus amount among students at the University of Tabuk and to assess their perceptions of related risks according to socio-demographic characteristics.

MATERIAL AND METHODS

Study Design and Sampling Size

This analytical cross-sectional study was conducted among1512 randomly selected Tabuk University students from all faculties who voluntarily agreed to complete the study questionnaire, disseminated via their university email accounts during April 2020.The larger the target sample size, the higher the external validity and the greater the generalizability of the study. This study aimed to maximize reach and gather data from as many respondents as possible. The representative target sample size needed, to achieve the study objectives and sufficient statistical power, was calculated with a sample size calculator. The sample size calculator arrived at 1,035 participants, using a margin of error of $\pm$ 3%, a confidence level of 95%, design effect 1.4, a 50% response distribution, and 34,246 students.

Measurement Tool and Data Analysis

The researcher developed a 25-item Anxiety Disorder and Panic of Coronavirus Scale incorporating the fully structured Composite International Diagnostic Interview (CIDI) 3.0 to assess DSM-IV disorders [5]. The Acute Panic Disorder Inventory questionnaire was used to ask participants the extent to which they have experienced panic-like symptoms, which they rank using a five-point Likert scale: *never*(0), *occasionally*(1), *half of the time*(2), *most of the time*(3), and *all of the time*(4). The total score can range from 0 to 100, with higher scores indicating greater severity of panic and anxiety disorder. Internal consistency of the measures was tested using a reliability test where the Cronbach alpha coefficient aided in determining the reliability of the variables.

Statistical Analysis

The statistical analysis was performed using the SPSS 22.0 package for Windows. The overall scores were totaled from answers to the specific items of the questionnaires. Descriptive statistics were utilized, including frequency and percentage, to describe responses, and the mean and standard deviation of scores indicated levels of panic and anxiety disorder. T-test was used to identify significant differences between panic and anxiety disorder and participant variables (age, sex, faculty, and study level). According to the questionnaire answers, statistical significance was determined at p≤0.05 value.

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RESULTS

The majority of participants (74%) were aged 19-22 years, with slightly more females (56%) than males (44%). They were studying in the faculties of science (Sciences, Engineering, and Computer Sciences), medicine (Medicine, Pharmacy, and Applied Medical Sciences), and humanities and theoretical studies (Education and Arts, Sharia and Laws, and Business Administration). The majority were multi-level undergraduate students (at different years of their study programs),with a representative cohort of postgraduate students. Table 1 shows the demographic characteristics of participations, and Table 2 shows participant responses to the survey, with mean and standard deviation (SD) values. Internal consistency of the measures was tested using a reliability test where the Cronbach alpha coefficient aided in determining the reliability of the variables. The results showed that the Cronbach alpha was 0.65. the range of Cronbach alpha within 0.6 to 07 is considered adequate and reliable. It is attested that the items used to measure Anxiety Disorder and Panic of COVID-19 are therefore acceptable.

Table1. *Sample distribution characteristics*

	Frequency	Percent
Age		
15 - 18 years	54	3.6
19 - 22 years	1120	74.1
23+ years	338	22.4
Total	1512	100.0
Sex of student		
Female	846	56.0
Male	666	44.0
Total	1512	100.0
Faculty		
Science	994	65.7
Medical	172	11.4
Theory	346	22.9
Total	1512	100.0
Study level (year)		
1	180	11.9
2	420	27.8
3	342	22.6
4	374	24.7
5	44	2.9
6	84	5.6
Postgraduate	68	4.5
Total	**1512**	**100.0**

Table 2. *Participant responses to all items*

Items	Mean	SD	Result
I am afraid of being infected with novel corona virus	1.78	1.2	Half of the time
I am obsessed with the idea that I will be infected with the corona virus	1.31	1.2	Occasionally

I sweat all over when I know of an infection in Tabuk or anywhere around me	1.06	1.2	Occasionally
I am worried about my health due to the spread of the novel corona virus	2.06	1.3	Half of the time
I think the issue is simple and there is no need for global panic regarding the novel corona virus	1.23	1.2	Occasionally
I feel the chills in my body from the global reports on the status of the novel corona virus	1.87	1.3	Half of the time
I believe that my physical immunity is strong enough to resist infection of the novel corona virus	1.86	1.2	Half of the time
My heart beats when I know of a new case of corona virus	1.11	1.3	Occasionally
I worry about my health once someone sneezes around me because of corona virus	1.55	1.3	Occasionally
I ignore anyone who underestimates the risk of infection of the corona virus	1.74	1.4	Half of the time
I overuse sanitizers to disinfect my hands from bacteria and germs	1.52	1.3	Occasionally
Talking about corona virus makes me feel nauseous	1.27	1.4	Occasionally
I have been nervous and anxious about my family since I first knew of the spread of corona virus	2.67	1.4	Most of the time
I almost cannot sleep as a result of excessive thinking about the possibility of catching corona virus	0.55	1.1	Never
I exaggerate in my adherence to medical instructions and guidelines for protection against corona virus	1.41	1.4	Occasionally
I tremble with the fear of infection with corona virus	0.74	1.2	Never
Too much talk about corona virus in the media annoys me deeply	1.96	1.5	Half of the time
My imagination does not stop seeing scenes of people infected with corona virus	0.89	1.3	Occasionally
My imagination does not stop seeing scenes of people infected with corona virus	0.81	1.2	Occasionally
I am horrified if I get a regular cold, for fear of corona virus	1.18	1.4	Occasionally
It captures my thinking that the end of the world is near due to the spread of corona virus	1.21	1.4	Occasionally
I exaggerate in using protective mask and gloves in public places	1.33	1.4	Occasionally
I feel a headache when I receive some news about new cases of corona virus in Tabuk	1.08	1.4	Occasionally
It makes me upset to hear something about the corona virus	1.69	1.4	Half the time
I have become more afraid of death	1.02	1.3	Occasionally
Total	**1.40**	**0.8**	**Occasionally**

The average results of the questionnaire items indicated that the distribution of the anxiety disorder and panic levels experienced by students were as follows: *occasionally* (65.7%), *half of the time* (23.1%), and *most of the time* (3.8%); and only (7.7%) as never among the student.

The results for the classification of the study population according to the frequency with which they suffer from high anxiety and panic from COVID-19, using the five-point Likert scale, are shown in Figure 1 and Table 3. It can

be seen that only 4% of Tabuk University students suffered from high anxiety and panic from COVID-19 *all of the time*, while 9% did *most of the time*. Students who *occasionally* had high anxiety and panic from COVID-19 represented the largest proportion (41%), while 20% reported *half of the time*. We can conclude that 74% of Tabuk university students experienced anxiety disorder and panic due to coronavirus at different levels, from *occasionally* to *all of the time*.

Table3. *Summary of participant responses*

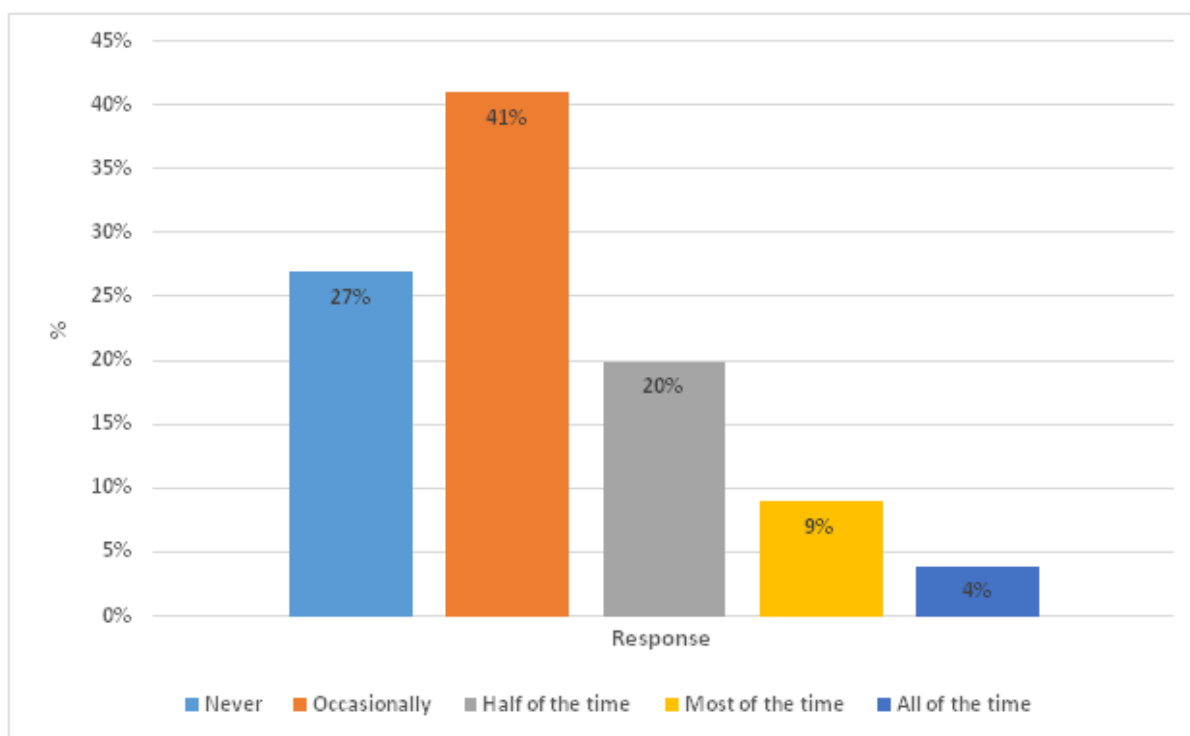| Response	Frequency	Percentage
Never	406	27%
Occasionally	614	41%
Half of the time	300	20%
Most of the time	138	9%
All of the time	54	4%
Total	**1512**	**100%**

Figure1. *Summary of participant responses*

In order to find out whether there is a significant difference in panic and anxiety disorder in relation to characteristics variables, T-test was used for an independent sample. T-test or one-way analysis of variance (ANOVA) were used to determine any significant difference of anxiety disorder or panic level among students of Tabuk University in general, and regarding the variables study level, age group, sex, and faculty. Results are shown in Table 4.

Table4. *T-test results*

	N	Mean	SD	P-value
Sex				
Female	846	1.39	0.79	0.6
Male	666	1.41	0.82	
Study level (year)				
1	180	1.57	0.99	0.000
2	420	1.40	0.78	
3	342	1.34	0.79	
4	374	1.35	0.69	
5	44	1.38	0.96	
6	84	1.68	0.86	
Postgraduate	68	1.13	0.71	
Faculty				
Science	994	1.38	0.79	0.435
Medical	172	1.42	0.82	
Theory	346	1.44	0.85	
Age				
15 - 18 years	54	1.69	1.27	0.024
19 - 22 years	1120	1.39	0.76	
23+ years	338	1.37	0.84	

DISCUSSION

The aim of the present study is to examine the prevalence of anxiety disorder and panic among Tabuk University students, and to relate this to particular variable characteristics, using a random sample that was representative according to sex, age, faculty, and study level, enabling accurate results to be achieved concerning anxiety disorder and panic related to COVID-19.The study found that about 17(65.4%) items of the questionnaire's final average score were answered with *occasionally*, indicating that the majority of students sometimes have anxiety about COVID-19 infection. This is perhaps

related to the direct impacts of the public policy response to the crisis, with Saudi universities delivering classes via online teaching and distance learning under lockdown conditions. Almost a quarter of items were answered with *half of the time* (n= 6, 23.1%), but only one item with *most of the time*.

The combined results for those experiencing anxiety related to COVID-19 *most of the time* (n = 138, 9%), and *all of the time* (n = 54, 4%) indicates that 13% of participants experienced prolonged and pervasive levels of distress. While this can be expected given the intense fear among governments and many scientific institutions confronted with the exponential spread of the virus worldwide in April 2020, when the fieldwork was conducted. At that point the outbreak had been reported in over 213 countries, with projections indicating that millions of people could be killed, with few known effective treatments or a vaccine, and media reporting and government policy relating to this scenario doubtlessly fed into the anxiety experienced by students. Nevertheless, it must be borne in mind that over a quarter of participants (n = 406, 27%) reported that they *never* experienced anxiety related to COVID-19.

Statistically significant differences were detected among participants related to their study level between the first and third years (0.032) and postgraduates (0.002). Third year students had significant differences only with those in their sixth year (0.010), and fourth-year participants also had such differences with those in their sixth year (0.017). The sixth year also had a significant difference with postgraduates (0.001). That means there is significant variation in anxiety disorder and panic related to COVID-19 among the students of Tabuk University related to study level, especially regarding responses of *occasionally* and *half of the time*.

The results indicate statistically significant differences according to student age group for *occasionally* and *half of the time* responses, including between the cohorts aged 15-18 and 19-22 years (0.022); and 15-18 and over 23 years (0.023).

These results are compatible with findings from China showing that more than 25% of the population experienced moderate to severe levels of stress- or anxiety-related symptoms in response to COVID-19[6,7]. These levels are similar to those reported during the SARS outbreak [8].

CONCLUSION

To our knowledge, this is the first study to assess, describe, and evaluate the anxiety disorder and panic arising from coronavirus among Tabuk University students, and it is among the pioneering studies of the subject of student anxiety in Saudi Arabia in general. The results indicate that aside from 27% (n = 406) who reported *never* experiencing anxiety in relation to COVID-19, of the 73% of the study population who experienced some form of anxiety disorder, 41% did so *occasionally* (n = 614), 20% *half of the time* (n = 300), 9% *most of the time* (n = 138), and 4% *all of the time* (n = 54). These findings add to our understanding of how public health crises such as pandemics have major psycho-social health impacts on student populations, backing policymakers to commit more resources to raising awareness and health education among such groups, with the implication of allocating specialist therapy and mental health support for those requiring it.

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