Perceived Academic Stress, Causes, and Coping Strategies Among Undergraduate Pharmacy Students During the COVID-19 Pandemic

Mariam A Yousif, Ahmed H Arbab, Bashir A Yousef

Background: Academic stress is a common problem among medical students, and the COVID-19 health crisis lockdown further worsened it. High academic stress has a negative impact on students learning and overall performance.

Objective: To assess perceived academic stress, causes, and coping strategies among undergraduate pharmacy students during the COVID-19 pandemic.

Methods: A descriptive cross-sectional study was conducted among undergraduate pharmacy students at the University of Khartoum. Data were collected from randomly selected participants using three validated self-administered questionnaires; perceived stress scale, study habits inventory, and mental health inventory. Data were analyzed using SPSS software, and descriptive statistics and chi-square were employed.

Results: The response rate in our study was 99.6% (251/252). About 87% of the participants were females. The majority of participants (92%) experience academic stress, with a mean score (24.99 ± 5.159), the level of academic stress ranging from low (4.3%), moderate (73.2%), to high (22.5%). Approximately 80% of the percipients reported academic stress during all exam times with a mean score (25.33 ± 4.976). The level of academic stress was significantly associated with participants’ gender (P-value: 0.042), and living conditions (P-value: 0.001). The most common factors that were significantly associated with academic stress were difficulty in remembering all that is studied (66.7%, P=0.006) and worrying about the exams (54.1%, P=0.011). Moreover, the most frequent strategies used to cope with academic stress were praying (84.4%) and maintaining some control over the situation (61.9%).

Conclusion: The study revealed a high prevalence of academic stress among percipients. Academic counseling, monitoring of mental status, and implementation of stress reduction programs are highly recommended.

Keywords: academic stress, exam stress, COVID-19, pharmacy students, Sudan

Introduction

Stress is a prevalent mental health disorder among university students. College student stress is mostly attributed to many factors such as academic pressures, social issues, and financial problems. College-related factors contributing to student’s stress include, the transition from school to the college environment, the curriculum load, and summative assessments, previous studies reported academia-related factors as the most common stressors among undergraduate pharmacy students. Student’s stress may be further exacerbated by the COVID-19 health crisis, and its implications in education.

The World Health Organization (WHO) announced the COVID-19 (SARS-CoV-2) outbreak of a global pandemic on March 2020, and about two months later, Sudan government adopted preventive measures to limit the spread of SARS-CoV-2 infection. The government imposed partial lockdown, closed universities, and suspended prayers in mosques and churches, particularly in the Khartoum state. With the movement restrictions and banning direct contact, universities were either postponed or switched to asynchronous online learning. Implementation of online learning, especially with...
the limited resources and poor technical infrastructure, is a challenge,\textsuperscript{8} and can induce stress for students.\textsuperscript{9} Unfortunately, no interventions were conducted to study the psychological impact and provide guidance to students. Furthermore, since December 2018, there has been instability in high education in Sudan; governmental universities were suspended for about ten months due to political unrest.

Academic stress has a negative physiological and social impact on students and may affect their learning and overall performance.\textsuperscript{10} Understanding prevalence, contributing factors, and coping strategies will facilitate organizing effective counseling strategies to facilitate students’ development and academic and professional success. Although many studies addressed academic stress during COVID-19 pandemic in economically developed countries,\textsuperscript{11,12} However, there is a lack of studies exploring academic stress and coping strategies in low-income counties with limited digital infrastructure and inadequate mental health support, such as Sudan. Therefore, the current study aimed to assess perceived academic stress and coping strategies among undergraduate Pharmacy students at the University of Khartoum during the COVID-19 pandemic.

\textbf{Materials and Methods}

\textbf{Study Design and Setting}

A descriptive cross-sectional study was conducted among undergraduate pharmacy students at the University of Khartoum, Khartoum, Sudan. In Sudan, undergraduate pharmacy education lasts for 5 years, and the student acquires a Bachelor of Pharmacy (B. Pharm) degree upon satisfactory completion. The Faculty of Pharmacy, University of Khartoum, was established in 1964 and remained the only one in Sudan for about three decades. Currently, the total number of enrolled students is about 750 students.\textsuperscript{13,14} The study was conducted from March 21 to May 29, 2021, and data were collected during a blended learning environment that combines asynchronous online learning with limited face-to-face educational activities.

\textbf{Study Population}

Study participants were undergraduate pharmacy students from the first to the fifth year of both genders. The study excluded students who were not registered and undertook courses during the study period, and also students with a history of diagnosed psychiatric disorders were excluded.

\textbf{Sample Size and Sampling}

The sample size was calculated using “Survey systems”, a sample size calculation software,\textsuperscript{15} with 95% confidence level and a 5% margin of error. Based on the accessible study population (n=733), The minimum sample size required for this study is 252 students.

Stratified and systematic sampling probability sampling methods were used to select the participants. The study population was divided into five strata according to the academic year of study (First year to the fifth year), and then a sample size appropriate to stratum size was obtained separately from each stratum by systematic sampling using students list in each academic year as a sample frame. The first unit of each stratum was selected by simple random sampling using Microsoft Excel.

\textbf{Data Collection Tool}

A pretested self-administered questionnaire was used for data collection. Google form was used to create and submit the questionnaire to the pre-selected study participants. The questionnaire consisted of four sections; the first section explored the socio-demographic characteristics of the participants. The second section contained the validated Perceived Stress Scale (PSS-10) with minor modifications.\textsuperscript{16} The PSS-10 was originally developed by Cohen et al in 1983 to evaluate the degree to which situations in participant’s life are judged as stress. PSS-10 is widely used to measure the degree to which situations in one’s life are appraised as stressful, and it has been proven for reliability and validity among university students in similar conditions, for example, analysis of psychometric properties of PSS-10 showed that it has an acceptable convergent and divergent validity, and internal consistency among university students in Saudi
Arabia, and Ethiopia. PSS-10 consists of 10 questions about the feelings and thoughts of the respondents during the last month. The five-point Likert scale ranging from never to very often was used to rate the participants’ responses. Individual scores on the PSS-10 inventory can range from 0 to 40, with higher scores indicating higher perceived stress, and the recommended cut-off scores: 0–13 low stress; 14–26 moderate stress; 27–40 high stress. The last two sections of the questionnaire were adapted from two instruments designed by Rao (2012); study habits inventory and mental health inventory. These two instruments were pre-validated and showed good levels of test-retest reliability coefficients (0.8–0.9). The study habits inventory consisted of 23 statements about factors most related to cause academic stress arranged into four categories; factors related to study habits and exams, factors related to sleep and living conditions, factors related to attitude, and factors related to class and teaching. Participants were asked to choose statements that they agreed with mental health inventory contained data about coping strategies, and it consisted of 24 items. Participants were asked to choose items they were using to cope with academic stress.

Data Management and Analysis
Data were downloaded from “Google drive” as a Microsoft Excel spreadsheet and imported to SPSS, version 22 (IBM SPSS Inc., Chicago, IL) for analysis. Descriptive statistics were used to present the results, and data were illustrated as tables. A Chi-square test was used to examine the significant association between independent socio-demographic variables and dependent variables. Data with a p-value of 0.05 or less was considered statistically significant.

Ethical Consideration
The study was conducted agreeing with the recommendations of the Declaration of Helsinki. The study proposal was approved by the Research Ethics Committee of the Faculty of Pharmacy, University of Khartoum (FPEC-07-2021). Written informed consent was obtained from each participant after explaining the purpose of the study, and the students were informed that their participation was voluntary. The students were given assurances about the confidentiality of information.

Results
The response rate in the study was 99.6% (251/252). The mean age of the participants was 20.86 ± 1.751, and most of them were females (n=202, 87.4%). Almost 147 (63.6%) participants live with their families, and 73 (29%) students live in the university dormitory. Regarding the weekly budget, about 129 (58.8%) of respondents had more than 3000 Sudanese pound/week. Detailed results of socio-demographic characteristics are shown in Table 1.

The overall prevalence of academic stress among participants was 92%, with a mean score (24.99 ± 5.159), and the levels of academic stress were ranged from low (4.3%), moderate (73.2%), to high (22.5%). Approximately 80% of the percipients reported academic stress during all exam times with a mean score (25.33 ± 4.976).

As shown in Table 2, data analysis revealed a statistically significant association of the level of academic stress with the participants gender (p= 0.042), and living condition (P= 0.001). Furthermore, the major factors related to study habits and exams that are significantly associated with the level of academic stress were difficulty in remembering all that is studied (66.7%, P=0.006), worrying about the exams (54.1%, P=0.011), exam papers are tough and do not value well (23.8%, P=0.001), and the exams are too difficult, regardless of my personal hard work (21.6%, P= 0.031). Among factors related to sleep and living conditions, not having good sleep hours before the exam was significantly associated with the level of academic stress (46.3%, P=0.010). In addition, among factors related to attitude, lack of self-confidence, and thinking to pass anyway were significantly associated with the level of academic stress (22.9%, P=0.004). Finally, among factors related to class and teaching, teachers lacking interest in students (30.3%, P=0.001), and dislike of certain courses that affect student desire to study it (34.6%, P=0.003) were significantly associated with the level of academic stress (Table 3).

As summarized in Table 4, students had used several strategies to cope with academic stress. The most frequent positive strategies were praying (84.4%), trying to maintain some control over the situation (61.9%), and thinking through different ways to handle the situation (47.2%). Moreover, no significant associations were observed between the level of academic stress and coping strategies (Table 4).
The current research focused on undergraduate university students’ psychological well-being during the global COVID-19 pandemic, and assessed the prevalence and various variables contributing to academic stress, as well as exploring coping strategies used by students. The study revealed a high prevalence of academic stress among respondents (92%). The majority of the respondents were identified as expressing a moderate level of academic stress. This finding was in agreement with the results of the study conducted among public health and preventive medicine students in Vietnam, where 90% of participants showed high to moderate stress during the COVID-19 pandemic. On the other hand, the level of academic stress in this study was higher than those reported in other studies conducted in Ethiopia, Saudi Arabia, Jordan, and Ireland, where academic stress was approximately reported in 50% to 64% of the respondents. The high prevalence of academic stress might be attributed to the fact that governmental universities including the University of Khartoum were closed for a few months prior to COVID-19 pandemic for political reasons, and students were fear of any further extended lockdown due to the COVID-19 pandemic. In addition, the poor infrastructure, lack of good training and preparation for online learning could negatively impact a student’s mental health.

In agreement with the results of studies conducted in Ireland, Saudi Arabia, and Jordan, and Ireland, the prevalence of academic stress was higher among females than males (P= 0.013). Concerning the duration of academic stress, approximately three-quarters of respondents exhibited academic stress all the exams duration. Out of socio-demographic characteristics (gender, year of study, living conditions, weekly budget), and in agreement with studies conducted in Ireland, Saudi Arabia, data analyses revealed significant associations between the prevalence and the level of academic stress and gender with P values; 0.013 and 0.042, respectively. Moreover, a significant association was also noted between participant living conditions and the level of academic stress (P-value: 0.001). However, changes in the academic year

### Table 1 Socio-Demographic Characteristics of Participants

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>215</td>
<td>85.7</td>
</tr>
<tr>
<td>Male</td>
<td>36</td>
<td>14.3</td>
</tr>
<tr>
<td><strong>Year of study</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-year</td>
<td>45</td>
<td>17.9</td>
</tr>
<tr>
<td>Second year</td>
<td>50</td>
<td>19.9</td>
</tr>
<tr>
<td>Third year</td>
<td>61</td>
<td>24.3</td>
</tr>
<tr>
<td>Fourth year</td>
<td>35</td>
<td>13.9</td>
</tr>
<tr>
<td>Fifth year</td>
<td>60</td>
<td>23.9</td>
</tr>
<tr>
<td><strong>Living condition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University dormitory</td>
<td>73</td>
<td>29.1</td>
</tr>
<tr>
<td>Home with relative</td>
<td>10</td>
<td>4.0</td>
</tr>
<tr>
<td>Home with family</td>
<td>159</td>
<td>63.3</td>
</tr>
<tr>
<td>Private dormitory</td>
<td>7</td>
<td>2.8</td>
</tr>
<tr>
<td>Apartment with friends</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Alone</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Weekly budget (SDG)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 3000</td>
<td>143</td>
<td>57.0</td>
</tr>
<tr>
<td>Between 1000 –2000</td>
<td>80</td>
<td>31.9</td>
</tr>
<tr>
<td>Less than 1000</td>
<td>14</td>
<td>5.6</td>
</tr>
<tr>
<td>Between 2000–3000</td>
<td>14</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Abbreviation: SDG, Sudanese pound.
were insignificantly associated with the level of academic stress, which contrasts to the Saudi study that indicated a significant difference between students with high-stress occurrence for the 3rd year medical students. This difference could be attributed to the difference in curriculum model, in the Saudi medical college curriculum, the 3rd year is a transition year from pre-clinical to clinical study level, while in our case, there is no “transition year”, the curriculum is based on the spiral model in many courses, where students re-visit material at increasing complexity as they progress.

Study habits inventory and mental health inventory were utilized to assess factors that cause stress. Factors causing academic stress are broadly arranged into four categories: study habits and exams, sleep and living conditions, factors related to attitude, and factors related to class and teaching. Among study habits and exam-related factors, difficulty remembering all that is studied was ranked as the most academic stress-causing factor, followed by worrying about the exams and lack of concentration during study hours. Moreover, physical and psychological disturbances are related to the development of serious psychological disorders such as stress and depression. In this study, physical factors such as not having good sleep hours before the exam and being tired sleepy to study efficiently were highly related to academic stress development in the participants. Regarding attitude-related factors, waiting for the mood to start reading and mood changes momentarily and affecting study were selected as the top inducers of academic stress. Boring teaching style was selected by about half of the participants as a most class and teaching-related academic stress-inducing factor. In agreement with our findings, an cross-sectional study conducted among undergraduate medical students at Taibah University reported that studying all night before the exam and extensive course load were the major confounding factors.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Stress Score Mean ± SD</th>
<th>Stress Level</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>25.12 ± 4.75</td>
<td>7</td>
<td>153</td>
</tr>
<tr>
<td>Male</td>
<td>24.03 ± 7.67</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Year of study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>23.32 ± 6.14</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td>Second</td>
<td>24.58 ± 6.14</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Third</td>
<td>25.55 ± 4.8</td>
<td>1</td>
<td>44</td>
</tr>
<tr>
<td>Fourth</td>
<td>26.15 ± 3.83</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Fifth</td>
<td>25.16 ± 5.65</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>Weekly budget (SDG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 3000</td>
<td>25.37 ± 5.38</td>
<td>6</td>
<td>88</td>
</tr>
<tr>
<td>2000 − 3000</td>
<td>24.71 ± 4.87</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>1000 − 2000</td>
<td>25 ± 3.96</td>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>Less than 1000</td>
<td>22.27 ± 5.05</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Living condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University dormitory</td>
<td>25.18 ± 5.27</td>
<td>5</td>
<td>47</td>
</tr>
<tr>
<td>Home with relative</td>
<td>25.3 ± 4.64</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Home with family</td>
<td>24.89 ± 4.85</td>
<td>3</td>
<td>112</td>
</tr>
<tr>
<td>Private dormitory</td>
<td>24.2 ± 10.04</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Apartment with friends</td>
<td>13</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Alone</td>
<td>39</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abbreviations:** SD, standard deviation; SDG, Sudanese pound.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Stress Score Mean ± SD</th>
<th>Stress Level</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factors related to study habits and exams</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty in remembering all that is studied</td>
<td>25.9 ± 5.09</td>
<td>5</td>
<td>105</td>
</tr>
<tr>
<td>Lack of concentration during study hours</td>
<td>25.07 ± 5.35</td>
<td>4</td>
<td>81</td>
</tr>
<tr>
<td>Worrying about the examinations</td>
<td>26.04 ± 4.74</td>
<td>1</td>
<td>92</td>
</tr>
<tr>
<td>Exam papers are tough and do not value well</td>
<td>27.84 ± 5.35</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>The exams are too difficult, regardless of my personal hard work</td>
<td>26.7 ± 5.68</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td><strong>Factors related to sleep and living conditions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No good sleep hours before the exam</td>
<td>26.06 ± 5.25</td>
<td>1</td>
<td>75</td>
</tr>
<tr>
<td>Tired, sleepy, and listless to study efficiently</td>
<td>26.11 ± 5.18</td>
<td>4</td>
<td>68</td>
</tr>
<tr>
<td>Inadequate space or room for study where I live</td>
<td>26.11 ± 5.06</td>
<td>3</td>
<td>31</td>
</tr>
<tr>
<td>Bad living conditions stress me out and affect my study</td>
<td>25.53 ± 5.49</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td><strong>Factors related to attitude</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of self-confidence</td>
<td>27.85 ± 4.47</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>Think to pass anyway</td>
<td>27.70 ± 4.18</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>Waiting for the mood to start reading</td>
<td>25.40 ± 5.32</td>
<td>3</td>
<td>81</td>
</tr>
<tr>
<td>Do not knowing how to prepare for the examinations</td>
<td>26.12 ± 5.51</td>
<td>1</td>
<td>52</td>
</tr>
<tr>
<td>Mood changes momentarily and that affect my study</td>
<td>25.31 ± 5.08</td>
<td>6</td>
<td>75</td>
</tr>
<tr>
<td>Tendency to “day-dream” when trying to study</td>
<td>25.48 ± 4.69</td>
<td>4</td>
<td>55</td>
</tr>
<tr>
<td>have not good time management</td>
<td>25.13 ± 5.42</td>
<td>4</td>
<td>89</td>
</tr>
<tr>
<td>Feeling that it’s the wrong place</td>
<td>25.89 ± 5.19</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>My parents have unrealistic expectations towards me and my results</td>
<td>27.96 ± 4.91</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td><strong>Factors related to class and teaching</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intense competition between students in our class affect my study</td>
<td>27.06 ± 4.92</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Teachers lacking interest in students</td>
<td>26.70 ± 5.07</td>
<td>0</td>
<td>43</td>
</tr>
<tr>
<td>Teachers make too many extra demands on us make us poring</td>
<td>26.36 ± 5.19</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>Boring teaching style</td>
<td>25.54 ± 5.1</td>
<td>3</td>
<td>78</td>
</tr>
<tr>
<td>Dislike of certain courses and that affect my desire to study it</td>
<td>26.72 ± 5.43</td>
<td>2</td>
<td>50</td>
</tr>
</tbody>
</table>

**Abbreviation:** SD, standard deviation.
Stress Coping Strategies are a collection of actions or a way of thinking used to cope with or adjust one’s response to a stressful event. Problem-oriented and emotion-oriented coping techniques are the two types of coping strategies. In the current study, participants used various stress coping strategies, including positive and negative strategies. The most frequently used positive strategy was religious practice “praying, trusting god”, then trying to maintain some control over the situation, and thinking in different ways to solve the situation. Similarly, religious activities were the most adopted coping strategy in a study conducted among King Saud University medical students. On the other hand, the most negative activities adopted by participants to cope with academic stress were crying and getting depressed. The current

**Table 4 The Relationship Between the Coping Strategies Used and the Mean Score and Level of Academic Stress**

<table>
<thead>
<tr>
<th>Coping Strategy</th>
<th>Stress Score Mean ± SD</th>
<th>Stress Level</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pray, Trust in God</td>
<td>24.73 ± 5.13</td>
<td></td>
<td>0.116</td>
</tr>
<tr>
<td>Try to maintain some control over the situation</td>
<td>24.51 ± 5.2</td>
<td></td>
<td>0.699</td>
</tr>
<tr>
<td>Think through different ways to handle the situation</td>
<td>25.15 ± 5.41</td>
<td></td>
<td>0.218</td>
</tr>
<tr>
<td>Draw on past experience to help you</td>
<td>25.81 ± 5.6</td>
<td></td>
<td>0.447</td>
</tr>
<tr>
<td>Look at the problem objectively</td>
<td>23.51 ± 5.43</td>
<td></td>
<td>0.385</td>
</tr>
<tr>
<td>Cry, get depressed</td>
<td>26.40 ± 4.56</td>
<td></td>
<td>0.107</td>
</tr>
<tr>
<td>Got nervous and keep worry</td>
<td>26.57 ± 4.48</td>
<td></td>
<td>0.152</td>
</tr>
<tr>
<td>Blame someone else for your problems</td>
<td>25.75 ± 3.88</td>
<td></td>
<td>0.825</td>
</tr>
<tr>
<td>Talk about the problem with someone who has been in the same type of situation to find a solution.</td>
<td>24.88 ± 4.65</td>
<td></td>
<td>0.352</td>
</tr>
<tr>
<td>Seek comfort or help from family or friends</td>
<td>25.62 ± 5.05</td>
<td></td>
<td>0.386</td>
</tr>
<tr>
<td>Go to sleep, figuring things will look better in the morning</td>
<td>25.92 ± 5.39</td>
<td></td>
<td>0.053</td>
</tr>
<tr>
<td>Do nothing in the hope that the problem will take care of itself</td>
<td>26.57 ± 5.16</td>
<td></td>
<td>0.394</td>
</tr>
<tr>
<td>Talk with a good friend</td>
<td>24.48 ± 4.82</td>
<td></td>
<td>0.106</td>
</tr>
<tr>
<td>Drink coffee or tea</td>
<td>25.71 ± 5.1</td>
<td></td>
<td>0.247</td>
</tr>
<tr>
<td>Listen to music</td>
<td>26.01 ± 5.58</td>
<td></td>
<td>0.122</td>
</tr>
<tr>
<td>Eat</td>
<td>25.97 ± 4.26</td>
<td></td>
<td>0.499</td>
</tr>
<tr>
<td>Watch motivation videos</td>
<td>24.52 ± 5.63</td>
<td></td>
<td>0.107</td>
</tr>
<tr>
<td>Go out for a walk</td>
<td>23.97 ± 6.08</td>
<td></td>
<td>0.091</td>
</tr>
<tr>
<td>Watch comedy</td>
<td>24.81 ± 5.73</td>
<td></td>
<td>0.825</td>
</tr>
<tr>
<td>Take along bath</td>
<td>23.37 ± 5.44</td>
<td></td>
<td>0.823</td>
</tr>
<tr>
<td>Chew gum</td>
<td>23.25 ± 3.15</td>
<td></td>
<td>0.219</td>
</tr>
<tr>
<td>Take drugs</td>
<td>25.14 ± 4.14</td>
<td></td>
<td>0.710</td>
</tr>
<tr>
<td>Meditation</td>
<td>27.33 ± 3.2</td>
<td></td>
<td>0.732</td>
</tr>
<tr>
<td>Smoke</td>
<td>28.00 ± 8.37</td>
<td></td>
<td>0.910</td>
</tr>
</tbody>
</table>

Abbreviation: SD, standard deviation.

Stress Coping Strategies are a collection of actions or a way of thinking used to cope with or adjust one’s response to a stressful event. Problem-oriented and emotion-oriented coping techniques are the two types of coping strategies. In the current study, participants used various stress coping strategies, including positive and negative strategies. The most frequently used positive strategy was religious practice “praying, trusting god”, then trying to maintain some control over the situation, and thinking in different ways to solve the situation. Similarly, religious activities were the most adopted coping strategy in a study conducted among King Saud University medical students. On the other hand, the most negative activities adopted by participants to cope with academic stress were crying and getting depressed. The current
study showed no significant relationship between coping strategies and the level of stress, which in contrast, previous literature showed a relationship between the stress coping strategies and developed anxiety or depression for undergraduate students. Moreover, some participant relaxation methods and to overcome academic stress, the most commonly used relaxation strategies were drinking coffee/tea, and listening to music. Coping strategies can divided into three main types: proactive strategies that used manage or solve the problem, emotional strategies that focus on regulating or reducing the emotional arousal associated with the stress, and avoidance strategies designed to avoid the stressful conditions. Although different types of coping strategies can be used, they may vary in their effectiveness. Some studies reported that personality variables, influence the coping strategies adopted as well as the outcomes. Further studies may be required to access the determinants of choice, and the effectiveness of coping strategies.

Limitations of this study are that it was conducted among pharmacy students in one university so, it cannot be generalized to students in other universities. Another limitation is that it’s a cross-sectional study, administered to the students at one point in time. However, students’ academic stress status may change daily during the pandemic; repeating the survey may enable evaluation of the consistency of findings. In addition, in the questionnaire, the duration of academic stress was reported only about the exam, not at other times.

Conclusion
The present study highlighted the impact of the COVID-19 crisis on pharmacy student mental health. The study showed a high prevalence of academic stress, the level of academic stress was significantly associated with participants’ gender and living conditions. The major factors associated with academic stress among participants were difficulty in remembering all that is studied, worrying about the exams, and lack of concentration during study hours. The study’s findings revealed an alarming increase in mental health morbidity among study participants, which strongly recommend immediate treatment through academic counseling, mental status monitoring, and stress reduction programs.

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References


