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**MENTAL HEALTH CHALLENGES IN PHARMACY SCHOOLS: TRIGGERS AND EFFECTS
ON ACADEMIC PERFORMANCE**

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Early view

ABSTRACT

Mental health is critical to academic and personal success, prompting an investigation into how mental health problems impact academic performance. This study aims to identify the triggers of mental health problems among pharmacy students in southwestern Nigeria, assess how students perceive the effect of these challenges on their academic engagement, and evaluate existing provisions to help pharmacy students address these challenges in the southwestern region of Nigeria. A cross-sectional survey was conducted among 200- to 500-level pharmacy students from public and private universities in the region, with a sample size of 577. Data were collected using pretested, semi-structured questionnaires and summarized using descriptive statistics (frequencies and percentages). Principal Component Analysis (PCA) was applied to group mental health triggers to thematic components. Spearman's rank-order correlation was used to explore the relationship between students' perceived effect of mental health and academic performance indicators. PCA identified five interpretable components that captured the structure of mental health triggers: academic pressure (25.44% variance), financial difficulties (11.88%), social and cultural adjustment (10.01%), psychological distress (7.92%), and lifestyle or health-related factors (7.08%). Students who reported that their mental health impacted their academic performance were more likely to struggle with task completion, focus, organization, and class participation ($p < 0.001$). Most students had not accessed mental health services; only 10.6% had seen a therapist, and 14.2% had engaged with a counselor since admission. Pharmacy students in southwestern Nigeria face a range of academic, financial, social, and psychological stressors that affect their mental well-being and academic engagement. Despite these challenges, the use of support services remains low. Strengthening mental health awareness, early intervention, and access to counseling may improve students' academic outcomes and emotional resilience.

Keywords: *Mental Health, Pharmacy Students, Academic Performance, Triggers, Amelioration Strategies*

INTRODUCTION

Mental health has always been a major public health care issue. Over the years, the deterioration of mental health among students has increased (1). Studies have shown that the student population experiences a higher prevalence of mental health issues compared with the general population, characterized by elevated rates of depression, distress, and other mental illnesses (2-6). Consequently, various measures have been developed to reduce health inadequacies and improve public health outcomes.

Mental health has become crucial to overall well-being for most individuals and has also extended to societies and countries. University students have specific concerns, burdens, and worries that differ from those of other age groups and occupational categories. While some experiences may be empowering, exciting, or thrilling, they may also trigger various forms of psychopathology, leading to stress (7). Mental health challenges can significantly impact university students' academic achievement and overall functioning. These challenges affect emotional, cognitive, physical, and interpersonal areas, leading to lower academic performance (8). Moreover, students with mental health issues are more likely to experience test anxiety and have lower self-efficacy, which further impedes their academic success (9). Poor mental health also negatively impacts those around the student, including friends, roommates, and staff members (9).

Studies have indicated that mental health problems influence students' personal experiences and professional activities (10). These issues range from poor academic performance and dishonesty to drug abuse and poor physical health. Mental health discrimination related to psychological problems creates barriers to mental health improvement. Ignorance of psychological problems and insufficient knowledge further affect the awareness and understanding of psychological conditions (11).

Academic stress, particularly among pharmacy students, creates a form of vulnerability to mental health problems. Therefore, understanding how mental health issues affect the educational achievements of

pharmacy students is becoming increasingly urgent, providing valuable insights into the mental health challenges they face.

While several studies have focused on psychological well-being among medical students in advanced countries, there is a lack of research on medical and pharmacy students in Nigeria, particularly in the southwestern region (2-6,8). Similarly, studies from other developing nations remain limited (3-4, 7, 9, 10) despite the abundance of research on mental health among undergraduates in developed countries.

This study seeks to bridge existing gaps by exploring the triggers of mental health challenges among pharmacy students, the relationship between mental health and academic performance, and the support systems available for pharmacy students dealing with mental health challenges. This study focuses on pharmacy students in the southwestern region of Nigeria to provide insights into their mental health experiences and the adequacy of current interventions.

Objectives

The objectives of this study are:

1. To identify the triggers of mental health challenges among pharmacy students in Southwest Nigeria.
2. To assess the relationship between the self-reported effect of mental health on academic engagement and selected indicators of academic performance among pharmacy students in Southwest Nigeria.
3. To evaluate existing provisions aiming to help pharmacy students in Southwest Nigeria address mental health challenges.

METHODS

Study design

This study was a cross-sectional survey of pharmacy students in southwestern Nigeria.

Ethical Clearance

Ethical approval was obtained from the Institute of Public Health, College of Health Sciences, Obafemi Awolowo University, Ile-Ife, with the certificate number IPH/OAU/12/1999.

Study Participants

The participants in this study were 200- to 500-level students in various pharmacy schools across the southwest zone of Nigeria. The selected institutions include Obafemi Awolowo University (OAU), University of Ibadan (UI), Olabisi Onabanjo University (OOU), University of Lagos (UNILAG), and Afe Babalola University (ABUAD). At ABUAD, only 200–400 level students were included, as there were no 500-level students at the time of the study. Pharmacy students who were unavailable during data collection or were unwilling to participate due to the sensitivity of some questions were excluded from the study. Additionally, first-year students were excluded as they had not yet begun pharmacy courses.

Sampling method and sample size

A stratified random sampling method was employed to select pharmacy students from various pharmacy schools. The sample size was determined from a population of 2,187 students using the Morgan and Krejcie formula (12) with a margin of error of 3.5% to be 577. After accounting for a 10% attrition rate, the final sample size was 634. Stratification ensured that representative samples were drawn from each level across all schools. This study relied on primary data sources for the analysis.

Variables and their measurement

The variables for the first objective include factors such as low mood, negative emotional states, substance use, parental pressure, culture shock, financial worries, and periods of starvation that impact students' mental health.

The variables for the second objective encompass factors that reflect the impact of mental health problems on academic performance. These include confidence in completing assignments on time, ability to focus on coursework, participation in class discussions, and organizational skills.

The variables for this objective are related to the availability and types of counseling services that are available in different pharmacy schools. These include the types of counseling, referrals to mental health programs or support groups, introduction to counseling services, and access to mental health therapists.

Questionnaire

This study used a pretested set of semi-structured questionnaires. The survey instrument was adapted from a tool developed by Fitch *et al.* (13). Participants rated the effects of mental health problems on their academic performance using a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree), with higher scores indicating a greater perceived impact of mental health stressors. This approach ensured consistency in measuring the perceptions of respondents across different domains. The survey consisted of 15 functions based on the five roles of school counselors as identified by Erford (14), with each role evaluated across three developmental categories: academic, career, and personal, following the National Standards for School Counseling Programs (15).

Questionnaire design

The questionnaires administered to the pharmacy students from the selected schools were divided into four sections. The first section gathered demographic information, including age, gender, study level, and program. The second section focused on identifying the triggers of mental health problems, as well as

practices contributing to these issues and their effects on the academic performance of pharmacy students, with students selecting the responses they found most accurate. The third section examined the relationship between mental health problems and academic performance. The final section assessed the support system available in pharmacy schools across southwestern Nigeria to help students manage mental health challenges.

Validation and reliability of the instrument

Senior faculty members conducted face and content validity to ensure that the questions were designed to answer the research objectives. Thirty questionnaires were administered to the respondents who were not included in this study to test for internal consistency and reliability. A Cronbach's alpha value of 0.84 was obtained for the instrument, indicating good reliability of the test items.

Questionnaire administration and data collection

Data were collected by administering questionnaires, created using Google Forms, to students from the 200 to 500 levels in the Faculties of Pharmacy across various pharmacy schools in Southwest Nigeria. Completing the questionnaire took approximately 5 min. The responses were downloaded from the Google form platform for further analysis.

Data Analysis

All data entered were securely stored to ensure confidentiality. The collected data were coded and loaded into a computer for analysis using the Statistical Package for the Social Sciences software version 26. The data were then cleaned, organized, and summarized using descriptive statistics, such as frequency counts and percentages. Each objective was analyzed using inferential statistics at a 5% significance level as outlined below:

A descriptive analysis was conducted to identify the triggers of mental health challenges among pharmacy students. Principal Component Analysis (PCA) was performed for each identified trigger. While

descriptive statistics identified common mental health triggers, PCA was employed to explore the underlying structure of these triggers, grouping them into meaningful components for better interpretation.

Spearman's rank-order correlation analysis was performed to examine the relationship between mental health challenges and academic performance. This study was conducted to assess the strength and direction of the relationships between mental health issues and academic performance.

Descriptive statistics, including frequencies and percentages, were used to summarize categorical responses regarding the availability and use of mental health support services for objective three.

RESULTS

Response Analysis

A total of 577 respondents were required during the study; however, a 10% overage was added, resulting in a total sample size of 634. The study was conducted using online survey forms, and the responses were retrieved. Of all the responses, only 578 were valid.

Respondents' demographic information

Table 1 indicates the demographic distribution of students. The variables used included name of institution, age, level of study, gender, religion, and marital status. Most of the students (170, 29.4%) were from OAU, which had the largest population among the schools. Furthermore, the majority of respondents were females (351, 60.7%), aged 20–22 years (285, 49.3%), and single (551, 95.3%).

Triggers of mental health challenges among pharmacy students in the southwestern region of Nigeria

Table 2 summarizes the triggers of mental health issues among pharmacy students in southwestern Nigeria. The principal component analysis grouped the underlying triggers into five interpretable components, which together explained 62.32% of the total variance. Academic pressure was the first and most influential

component, accounting for 25.44% of the variance. This component included emotional strain variables such as persistent low mood, feelings of gloom and anger, low energy, and self-rated poor mental health. For instance, 31.2% of the respondents reported feeling low for over two weeks, whereas 69.9% rated their mental health as poor or average.

Financial difficulties, which explained 11.88% of the variance, emerged as another major trigger. A significant proportion of students (78.5%) identified financial worries as likely or very likely to affect their mental health, and over half (50.3%) reported experiencing mental stress related to starvation.

Table 1: Demographic characteristics of the respondents (n = 578)

Variable	Category	n	%
Name of the institution	Afe Babalola University (ABUAD)	92	15.9
	Obafemi Awolowo University (OAU)	170	29.4
	Olabisi Onabanjo University (OOU)	103	17.8
	University of Ibadan (UI)	78	13.5
	University of Lagos (UNILAG)	135	23.4
Age	17–19	110	19.0
	20–22	285	49.3
	23–25	163	28.2
	26 and above	20	3.5
Level of study	200L	176	30.4
	300L	173	29.9
	400L	132	22.8

	500L	97	16.8
Gender	Female	351	60.7
	Male	227	39.3
Religion	Christianity	411	71.1
	Islam	155	26.8
	Others	12	2.1
Marital status	Single	551	95.3
	Married	16	2.8
	Others	11	1.9

Table 2: Triggers of mental health challenges among pharmacy students in southwestern Nigeria grouped by principal components (n = 578)

Trigger Variable	Response Category	n	%	Highest Loading	Communality	Extraction Total
Component 1: Academic pressure (25.44% Variance)						
Felt low for >2 weeks	Somewhat often	130	22.5	0.673	0.563	3.816
	Very often	50	8.7			
Gloomy	Half the time	113	19.6	0.574	0.641	
	Most of the time	48	8.3			
	Always	2	0.3			
Angry	Half the time	69	11.9	0.612	0.583	
	Most of the time	23	4			
	Always	4	0.7			

Rating of mental health	Poor	11	1.9	-0.703	0.686	
	Somewhat poor	55	9.5			
	Average	338	58.5			
Energetic	Never	6	1	-0.569	0.574	
	Occasionally	113	19.6			
Component 2: Financial difficulties (11.88% Variance)						
Financial worries	Likely	326	56.4	0.448	0.69	1.781
	Very likely	128	22.1			
Starvation	Likely	216	37.4	0.443	0.689	
	Very likely	75	13			
Component 3: Social and cultural adjustment (10.01% Variance)						
Parental pressure	Likely	246	42.6	0.459	0.707	1.501
	Very likely	51	8.8			
Culture shock	Likely	152	26.3	0.469	0.747	
	Very likely	19	3.3			
Component 4: Psychological Distress (7.92% Variance)						
Calm and peaceful	Never	6	1	-0.687	0.586	1.187
	Occasionally	68	11.8			
Physical rating of health	Poor	3	0.5	0.475	0.661	
	Somewhat Poor	22	3.8			
	Average	292	50.5			
Component 5: Lifestyle and health-related factors (variance, 7.08%)						

Smoking						
	Once every few weeks	62	10.7	0.566	0.723	1.061
	Once everyday	8	1.4			
	More than once everyday	4	0.7			
Alcohol						
	Once every few weeks	187	32.4	0.535	0.576	
	Once everyday	10	1.7			
	More than once everyday	2	0.3			
Substance abuse						
	Likely	47	8.1	0.536	0.612	
	Very likely	19	3.3			
Coffee consumption						
	Once every few weeks	296	51.2	0.388	0.312	
	Once everyday	28	4.8			
	More than once everyday	4	0.7			

The third component, social and cultural adjustment (10.01% variance), highlighted the impact of familial and environmental factors. More than half (51.4%) and nearly a third (29.6%) of the participants reported being affected by parental pressure and culture shock, respectively. Psychological distress was represented as the fourth component (7.92% variance), comprising reduced calmness and poor physical health. While most students reported feeling calm frequently, 12.8% indicated that they rarely or never felt calm. Similarly, 54.8% rated their physical health as poor or average.

Finally, lifestyle and health-related factors accounted for 7.08% of the variance. Although smoking and alcohol use were relatively uncommon (12.8% and 34.4%, respectively), more than half (56.7%) reported

regular coffee consumption, and 11.4% acknowledged that substance abuse was likely or very likely to impact their mental health.

The relationship between the self-reported effect of mental health on academic engagement and selected indicators of academic performance among pharmacy students in Southwest Nigeria

In Table 3, Spearman’s rank-order correlation was used to assess the relationship between the perceived impact of mental health on academic work and various indicators of academic performance. This non-parametric test was appropriate because of the ordinal nature of the Likert-scale responses. The analysis focused on students’ self-reported perceptions of how their mental health interfered with academic engagement, rather than specific psychiatric diagnoses. While the question “How often has your mental health affected work done?” may not apply equally to all students, especially those without noticeable mental health struggles, responses were retained as self-perceived reflections. “Not applicable” options were not provided, and the students interpreted and responded to the question based on their own understanding. This limitation has been acknowledged and included in the Discussion section. Significant negative correlations were found between mental health issues and key academic activities, such as completing assignments on time (−0.315), focusing on school courses (−0.362), and keeping academic work organized (−0.349). Furthermore, mental health problems affected class participation (−0.310).

Table 3: Spearman’s correlation between the effect of self-reported mental health on academic work and academic performance among pharmacy students

Academic performance indicator	Correlation coefficient	Sig (2-tailed)
Complete assignments within deadlines	−.315	< 0.001
Focus on the school courses	−.362	< 0.001
Participate in class decisions	−.310	< 0.001

Keep your academic work organized	-.349	< 0.001
So worried that I was unable to sleep	.234	< 0.001
Felt alone and lonely	.305	< 0.001
Considered attempting suicide	.287	< 0.001
Academic performance in previous years	-.360	< 0.001

The correlation coefficients indicate the strength and direction of the relationship between each mental health indicator and the impact on work done. The negative coefficients (-0.315 to -0.362) suggest that the impact on work done also increases negatively as the mental health factors increase. Higher levels of mental health problems are associated with a greater negative impact on academic performance. The statistical significance values (Sig) for each correlation coefficient are all <0.001 , indicating that these relationships are statistically significant and not due to chance.

Measures to address mental health issues among pharmacy students

Table 4 summarizes the support systems available for addressing mental health issues among pharmacy students in schools in southwestern Nigeria. The data indicate that engagement with mental health services is generally low. Few students have seen a therapist (10.6%) or encountered counseling services upon entering pharmacy school (14.2%). Furthermore, less than one-third (29.4%) of the students were introduced to counseling services upon entering the school.

Among those who had a counselor, most (57.8%) reported obtaining one through other means, whereas only 21.1% were assigned by the faculty. A vast majority (94.1%) had not been referred to any mental health program since they started their studies. Regarding counseling participation, 72.1% reported no participation at all, 14.6% engaged in individual counseling, and 7.2% in group sessions.

Table 4: Measures to address mental health issues among pharmacy students in schools in southwestern Nigeria (n = 578)

Variables	Options	n	%
Have you seen a mental health therapist in the past?	Yes	61	10.6
	No	517	89.4
Were you introduced to counseling services when you entered pharmacy school?	Yes	170	29.4
	No	408	70.6
Have you had any encounters with any counselors since your admission?	Yes	82	14.2
	No	496	85.8
If yes, how did you have a counselor?	Assigned by a religious leader	22	8.6
	Assigned by the faculty	54	21.1
	Others	148	57.8
	Your Choice	32	12.5
Have you been referred to a mental health program since you began your pharmacy school studies?	Yes	34	5.9
	No	544	94.1
What types of counseling did you participate in?	Individual	81	14.6
	Group	40	7.2
	None	400	72.1
	others	34	6.1

DISCUSSION

Triggers of mental health problems among pharmacy students in the southwestern region of Nigeria

The results of this study highlight the key underlying triggers of mental health issues among pharmacy students, which are rooted in emotional, environmental, and personal factors driven by their rigorous academic schedules. These triggers were grouped into five interpretable components through PCA. The demanding academic workload, continuous assessments, and high expectations contribute to mental health stress, consistent with Limone's (16) findings, which suggest that intense academic environments negatively impact students' mental well-being and performance.

Feelings of Low Mood:

A prominent trigger identified is the frequency of low mood that lasts for more than two weeks and affects a substantial portion of students. Persistent low mood is a significant predictor of mental health disorders among university students. A systematic review and meta-analysis reported that the overall prevalence of depression among Chinese university students was 28.4%, highlighting the substantial impact of depressive symptoms in this population (17). Additionally, a study conducted during the COVID-19 pandemic found a high prevalence of depressive symptoms among matriculated university students in Singapore, underscoring the importance of addressing mental health issues in academic settings (18). These findings align with our data suggesting that prolonged periods of low mood among pharmacy students may signal the onset of deeper mental health challenges necessitating early intervention and support.

Negative Emotional States:

The study revealed that many students experience gloominess and anger, both of which are harmful to mental health and academic productivity. These emotions hinder students' ability to cope with academic pressures, which aligns with Hersi's (19) study, indicating that compared with individuals in different

settings, emotional distress could increase the risk of developing mental illnesses among university students.

Financial Worries:

Financial stress was another significant trigger for mental health problems, with many students reporting that financial concerns impacted their mental well-being. This aligns with the findings of Asebedo and Wilmarth (20), Bradshaw and Ellison (21) and Marshall *et al.* (22) who demonstrated that financial instability exacerbates mental health issues, increasing stress levels among students.

Substance Use:

The study revealed a low prevalence of substance use among pharmacy students. This suggests that substance abuse may not be a primary driver of mental health problems among pharmacy students in southwestern Nigeria, unlike other populations. This contrasts with Hersi's (19) findings on the susceptibility of the broader student population to substance abuse.

Other Triggers:

Additional triggers, such as parental pressure, periods of starvation, and culture shock, were identified in the study. These factors further compound the students' mental health challenges. These findings highlight the complex nature of stressors and their impact on student well-being.

The relationship between the self-reported effect of mental health on academic engagement and selected indicators of academic performance among pharmacy students in Southwest Nigeria

Correlation analysis between mental health problems and academic performance revealed that mental health issues significantly affect the ability of students to complete academic tasks. Negative correlations were found between mental health problems and academic performance variables, such as completing

assignments on time, staying focused, and organizing academic work. These findings are consistent with those of Zada *et al.* (23) who found a robust link between mental disturbances and reduced academic performance.

Students who reported that their mental health affected their academic work also tended to perform poorly in several academic domains, such as timely submission of assignments, maintaining focus, and organizing academic tasks. This perceived interference was also associated with emotional difficulties, such as loneliness, sleeplessness, and suicidal thoughts.

Additionally, positive correlations were observed between mental health problems, such as loneliness, worry, and suicidal ideation, and their detrimental effect on academic performance. This is consistent with the findings of Isiogugu *et al.*, Zada *et al.*, and Larson *et al.* (11, 23, 24), which indicate a strong relationship between mental health disturbances and poor academic outcomes. For instance, students who felt worried were unable to sleep and those who felt lonely had a higher risk of poor academic outcomes, emphasizing the importance of these mental health issues on academic achievement. The emotional anguish and psychological burden associated with mental health issues can also lead to reduced motivation, decreased self-efficacy, and impaired ability to manage academic stressors. These combined factors hinder the capacity of students to fully engage in their coursework, meet deadlines, and perform well academically (25). Students grappling with mental health disturbances are at an increased risk of developing long-term mental illnesses, which further diminishes their abilities and hampers academic success. The findings showed the significant effect of mental health challenges on academic performance, reinforcing the need for proactive support mechanisms within pharmacy schools. The observed association suggests that mental health struggles can negatively influence students' ability to effectively engage with their academic responsibilities.

The implications of this study for the academic performance of pharmacy students are significant. Poor mental health, including symptoms such as low confidence, lack of focus, and disorganization, can severely

impede the ability of students to complete assignments on time, participate in class discussions, and maintain strong academic performance. Furthermore, Larson *et al.* (24) noted that college and university students represent the largest group in society dealing with mental health issues.

Measures to address mental health issues in pharmacy schools

The results reveal a low utilization of mental health provisions and support services among pharmacy students in the southwestern region of Nigeria. While some students have sought therapy, encountered counselors, and participated in counseling, the overall percentages indicate a need for increased access to mental health support.

The results reveal important aspects regarding the use of mental health services among pharmacy students in the southwestern region to gain insights into the use and effectiveness of these provisions. Notably, only a small percentage of students had seen a mental health therapist in the recent past. This suggests that pharmacy students do not commonly seek professional therapy, indicating a potential gap in accessing mental health services. Furthermore, many students were not introduced to counseling services upon entering pharmacy school, a finding that aligns with the findings of Awofolaju *et al.* (26), who reported inadequate sensitization to available counseling services in Nigerian pharmacy schools.

The results further indicate that no significant proportion of students have had no encounters with counselors since admission to the pharmacy school. This suggests a lack of engagement with counseling services, potentially resulting from various factors, such as stigma, lack of awareness, or limited availability of counseling resources. This result is indicated in the study by Corrigan *et al.* (27), who identified stigma as one of the barriers to receiving treatment for mental health problems, defined as the presence of negative attitudes held by individuals toward others.

While most students may not require specialized counseling services, routine encouragement, peer support, and general wellness programs could be sufficient interventions for many. However, professional mental health support should remain accessible for those facing severe challenges, ensuring that all students receive appropriate care based on their needs.

Referrals and Support Groups:

The assessment revealed a low frequency of referrals to mental health programs and support groups among pharmacy students. This may be due to the limited availability of counseling services, including support groups, as highlighted by Mowbray *et al.* (28), who identified the shortage of counselor appointments as a key barrier to accessing mental health support.

Types of Counseling Participants:

Most students had not participated in any form of counseling, as reflected by the low overall engagement with counseling services. This finding is consistent with that of Sun *et al.* (29), who found that mental health resources are often not located within pharmacy schools, reducing accessibility and limiting student participation.

The study's limitations include its cross-sectional design, which restricts causal inferences between mental health and academic performance, and the reliance on self-reported data, which may introduce response bias. Additionally, the study focused exclusively on pharmacy students in southwestern Nigeria, limiting the generalizability to other regions or disciplines. Exclusion of first-year students and underrepresentation of certain institutions may skew the findings. Moreover, the question assessing the impact of mental health on academic work was universally applied, including to students who may not have experienced any mental health problems. This may have led to variability in the interpretation and response accuracy. Finally, while principal component analysis (PCA) was used to identify the underlying trigger components, the

interpretation of these components is exploratory in nature and may not generalize across different student populations or regions.

CONCLUSION

In conclusion, this study sheds light on the key triggers of mental health problems among pharmacy students in southwestern Nigeria, pinpointing issues such as loneliness, worry, and academic pressures that take a toll on their well-being. The study also found a significant link between these mental health challenges and academic performance, showing how such struggles can affect engagement and success in school. Moreover, our assessment of the available support services highlights a worrying gap, with few referrals to counseling programs, suggesting that there is much room for improvement. To address these challenges, pharmacy schools should expand access to mental health professionals, integrate mental health education into the curriculum, and implement peer-led initiatives to reduce stigma. Institutions can create a more inclusive academic environment where students can thrive academically and emotionally by prioritizing mental health and strengthening support systems. Future research should investigate effective interventions and support systems that can make a real difference in pharmacy students' mental health in the region.

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