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RESEARCH PAPER

Demographic Differences in Mental Health Literacy, Mental Health Status, Perceived Stress, Social Support, and Psychological Well-Being Among University Students in Pakistan

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ABSTRACT

The present study investigated demographic differences in mental health literacy, perceived stress, anxiety and depression, social support, and psychological well-being among university students in Pakistan. A purposive sampling technique was utilized to collect a sample of 1,664 Pakistani university students from different provinces. Standardized scales used for the measurement of key variables were included as follows: Mental Health Literacy Scale (MHLS), Perceived Stress Scale (PSS), Hospital Anxiety and Depression Scale (HADS), Multidimensional Scale of Perceived Social Support (MSPSS), and Ryff's Psychological Well-Being Scale. Statistical analysis showed significant differences by gender, age groups, family systems, and provinces. It was observed that female students had higher stress and psychological distress levels compared to married students, who had a greater perception of social support and psychological well-being. Older students were better at mental health literacy; moreover, there were significant differences between provinces, with metropolis areas being more aware. Recommendations incorporated the need for targeted mental health awareness campaigns and support programs tailored to specific demographic groups within university populations.

KEYWORDS Mental Health Literacy, Perceived Stress, Anxiety, Depression, Social Support, Psychological Well-Being, University Students, Demographic Differences, Gender, Family System, Pakistan

Introduction

Recently, mental health is becoming increasingly important worldwide as a large aspect of total well-being, especially with regard to the rising psychological distress of university and young adults. Mental Health Literacy (MHL) is knowledge and beliefs about mental disorders that help in their recognition, management, or prevention (Jorm, 2020). These highlight the importance of MHL on how individuals perceive, manage, and react to psychological distress. Individuals who are high in MHL will even have better outcomes in terms of mental health, such as lower levels of anxiety and depressive symptoms, lower perceived stress, and increased psychological well-being (Wei et al., 2021; Coles et al., 2022). Despite growing awareness campaigns, mental health literacy remains quite limited across many developing countries, especially Pakistan, where stigma, culture, and ditched access prevent promotion of mental health (Saeed et al., 2023).

Academic pressure, uncertainty about the future, and inappropriate coping skills may aggravate mental health anxiety and depression considerably in university

populations. The Hospital Anxiety and Depression Scale measures emotional disturbances and stress in both therapeutic and everyday contexts with high validity (Zigmond & Snaith, 1983; Bjelland et al., 2021). Low knowledge about mental health, particularly information about assistance-gaining avenues, can delay treatment entry or induce maladaptive coping responses on their own. It has also been postulated that perceived stress, or the degree to which one appraises situations in life as stressful, can also result in low mental health literacy and poor psychological adjustment (Lee, 2021). This becomes injurious to the psychological healthy state of individuals who are not able to identify stressors or effective coping due to lack of mental health literacy.

Social support, including emotional, informational, and instrumental support obtained from one's social network, has been widely documented as a protective factor that helps buffer against the negative impact of stress and psychological distress. In this situation, social support potentially acts as a mediator between MHL and mental health outcomes (Bai et al., 2022; Zhong et al., 2023). Such individuals are more likely to receive support from their peers, families, or experts, strengthening their resilience and general mental well-being. Conversely, individuals with low MHL may not be aware or willing to inquire, thus leading to loneliness and worsening mental health (Naslund et al., 2021). As such, a good understanding of the mediating role of social support will help the development of comprehensive mental health interventions.

Moreover, socio-demographic variables like age, gender, family structure, and province of residence are important factors in MHL and its derivatives. It has been shown that younger people, especially in relation to young adulthood, have lower MHL than older people because they have often had limited life experience and restricted exposure to psychobehavioral health challenges (Yue et al., 2020). Gender is also an important variable, with results indicating that the female gender is more likely to recognize symptoms of distress and obtain help while males internalize distress due to gender norms (Rafique & Iqbal, 2022). The structure of the family system (joint or nuclear) may also influence the perceived availability of social support and how open families may be to discussing issues relating to mental health. Similarly, there are differences across Pakistan at the provincial and regional levels that may produce different access to mental health training, facilities, and campaigns of awareness (Ali et al., 2023)—which could impact psychopathology, MHL, and psychological factors surrounding MHL.

In this context, it is important to understand how mental health literacy is connected to mental health (actual mental health), mental health status (perceived mental health), stress, and well-being in various demographic contexts. By analyzing social support as a mediator, the research will provide additional concrete recommendations about how any intervention can be delivered based on population demographics to improve the psychological well-being of individuals. Given these dynamics in the sociocultural context of Pakistan, where mental health is a lesser prioritized area and stigma is a block to seeking support and safer discussions (Khalily et al., 2024), this research will contribute to the literature in several ways and provide insight into policy and campus-based mental health efforts.

Literature Review

Mental health literacy (MHL) also an important factor, promoting psychological well-being and preventing potential mental illness. MHL is defined by Jorm (2020) as the ability to recognize various mental health disorders, understand the factors that put people at risk (and cause them), and know how to access appropriate help. Individuals

with greater MHL have reported positive mental health conditions, such as lower levels of anxiety and depression (Wei et al., 2021). In a recent meta-analysis, Coles et al. (2022) concluded that individuals with low MHL are less likely to access professional help and are more likely to experience worsening psychological states, captured through depressive symptoms. In the South Asian context, stigma, cultural issues, and misinformation also make it more difficult to develop MHL (Saeed et al., 2023), therefore it is an area of concern that requires research in Pakistan.

Perceived stress is another outcome highly correlated with MHL. Those with higher MHL typically can identify stressors and utilize effective coping strategies (Lee, 2021). Research indicates that when adolescents and young adults have lower MHL, they are likely to view daily challenges as more stressful and overwhelming than their higher MHL peers (Zhong et al., 2023). Perceived stress may result in increased susceptibility to negative affect, sleep disturbance, and subsequent exacerbation of depressive symptoms. Therefore, enhancing MHL has the potential as a protective buffer against chronic stress and the psychological consequences associated with it.

MHL and mental health outcomes, especially depression and anxiety, have been associated for many years. The Hospital Anxiety and Depression Scale (HADS) has been utilized with clinical and non-clinical samples alike and has become a common measure of depression and anxiety in non-clinical and clinical samples (Bjelland et al., 2021). Evidence suggests that people who have greater knowledge and understanding of mental health can better address symptoms at an early stage resulting in improved outcomes (Naslund et al., 2021). On the other hand, people with lack of MHL are more likely to misinterpret symptoms, be dependent on unscientific beliefs, or avoid mental health treatment altogether (Khalily et al., 2024). This leads to very concerning rates of depression and anxiety, particularly where mental health learning has limited access.

Evidence supports the potential for MHL to predict mental health, emotional awareness, and psychological adjustment overall. Social support is a key mediating factor in MHL and mental health outcomes. Bai et al. (2022) demonstrated that individuals with stronger social support networks have greater resilience to experience psychological adversity. Greater MHL motivates individuals to seek emotional or informational support, which lowers perception of stress and enhances psychological well-being (Zhong et al., 2023). In a collectivist society like that of Pakistan, community- and family-based support structures will have the greatest impact, and these comprise a salient contingency to the dominant gender values and family arrangements that exist (Rafique & Iqbal, 2022).

Demographic aspects such as age, gender, family system, and province of origin, play a major role in how MHL and mental health outcomes relate to each other. Younger cohorts, particularly university students, have been found to struggle to identify mental health problems due to a lack of experience and exposure (Yue et al, 2020). There have also been gender differences indicated, with women showing higher MHL and more positive help-seeking attitudes than men (Rafique & Iqbal, 2022). Additionally, individuals from joint family systems show greater levels of faced emotional and practical support, whereas individuals from nuclear family systems reported higher levels of loneliness than joint family systems (Ali et al, 2023). Provincial disparities in health infrastructures and access to education account for inequalities in MHL and outcomes and are examined with provincial breakdowns in national statistics (Saeed et al., 2023).

Social support as a mediator and demographic characteristics as moderators refine our understanding of these interactions. Gaps do exist, though, in regional studies, such as those conducted in South Asia, for example, in Pakistan, where structural and cultural distinctions influence experiences of mental health differently than within Western frameworks. The objective of this study is to bridge this gap by examining the ways MHL influences mental health status, perceived stress, and well-being across different demographic groups in Pakistan.

Hypotheses

H1 There would be significant mental health literacy variation between age groups, with elderly students likely to have greater mental health literacy compared to younger students.

H2 Female students will report higher levels of anxiety and depression compared to male students, as assessed using the Hospital Anxiety and Depression Scale (HADS)

H3 Students from nuclear families will report higher perceived stress levels than those from joint family systems.

H4 Perceived social support will be greater among students from joint family systems than among students from nuclear families.

H5 Mental Heath literacy will vary considerably across provinces, with students from urbanized provinces (e.g., Punjab and Sindh) being expected to score higher on mental health literacy compared to students from less urbanized areas (e.g., Balochistan)

H6 Mental health literacy, perceived stress, anxiety, depression, social support, and psychological well-being will vary considerably by gender, with females being expected to score higher on social support but also perceived stress and psychological distress.

Material and Method

Nature of the Study

This study was quantitative in nature and utilized a cross-sectional survey design to assess demographic variations in psychological constructs among university students.

Sample

The sample consisted of N = [1664] university students, selected through purposive sampling from public and private universities across different provinces of Pakistan, including Punjab, Sindh, KPK, Balochistan, AJK, and GB. Students from both nuclear and joint family systems, and a balanced representation of gender and age groups, were included.

Research Design

A cross-sectional survey design was used to gather data at a single point in time and identify differences based on demographic characteristics.

Instruments

Mental Health Literacy Scale (MHLS)

O'Connor and Casey (2015) designed the Mental Health Literacy Scale (MHLS) to investigate knowledge and understanding of mental health disorders, recognition of, and management of individuals. The MHLS has 35 items measured on a Likert scale from one (strongly disagree) to five (strongly agree). Inger (2015) describes the MHLS having a number of domains including ability to recognition of mental disorders, understanding of risk factos and causes, understanding of self-treatment, and efficacy for help-seeking. The MHLS does not have subscales and produces an overall mental health literacy score. Authors had good internal consistency with Cronbach's alpha of .87, which suggests a high degree of reliability for measuring mental health literacy across populations.

Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale (HADS), created by Zigmond and Snaith (1983), is a self-report measure of anxiety and depression in non-psychiatric settings. There are 14 items in total, with 7 items pertaining to anxiety (HADS-A) and 7 items related to depression (HADS-D). Each item is rated on a 4-point Likert-type scale (0 to 3), with higher scores representing more severity. HADS is well validated, exists in a variety of cultures, and is known for its extraordinary brevity and clinical utility. Internal consistency for the anxiety subscale is generally reported to be between .80–.90, and the depression subscale between .70–.85, demonstrating good to excellent reliability.

Perceived Stress Scale

The Perceived Stress Scale (PSS) was created by Cohen, Kamarck, and Mermelstein (1983) to assess how events in a person's life are appraised as stressful. This study utilized a 10-item version (PSS-10), in which participants rated 5 items with a 5-point Likert-type scale of 0 (never) to 4 (very often). The items are rated based on how unpredictable, uncontrollable, and overloaded respondents have appraised their lives. There are no subscale, just one score for life stress overall. The PSS-10 has been shown to be psychometrically sound with a Cronbach's alpha in one of the populations of reference of .78 to .91, and therefore is a strong, well-used instrument for the measure of stress.

Multidimensional Scale of Perceived Social Support (MSPSS)

The Multidimensional Scale of Perceived Social Support (MSPSS) was developed by Zimet et al. (1988) and is composed of 12 items designed to measure perceived social support in three specific domains: Family, Friends, and Significant Others (with 4 items in each aspect). Responses to these items score on a 7-point Likert-type scale meaning 1 is a very strong disagreement and 7 is a very strong agreement. Because of the portability and internalization characteristics of the MSPSS, it is used around the world as a measure of social support because it provides high reliability across cultures and societies (subscale alphas typically above .85; total scale Cronbach alpha around .90), providing evidence of excellent internal consistency.

Ryff's Psychological Well-being Scale

The short version of the Psychological Well-Being Scale consists of six dimensions of positive functioning: Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance. It was developed by Carol

Ryff in 1989. It is composed of 18 items, three of which correspond to each subscale. Each item is rated on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Choices for some items are scored in reverse. This version captures the theoretical depth of the original scale, with an equally required depth of processing by subjects. It has been shown to produce good reliability on student samples, with Cronbach's alpha values commonly ranging from .70 to .85 for subscales and overall composite scores.

Results and Discussion

Table 1
Demographic Characteristics of the Sample

Study Sample		N	Percentage
Participant Age			
	19-24	910	54.68
	25-29	754	45.31
Gender			
	Men	805	48.37
	Women	859	51.62
Family system			
	Joint	837	50.30
	Nuclear	822	49.4
Degree			
	BS	1443	86.7
	MSC	221	13.3
Partnership Status			
	Single	838	50.36
	Engaged	310	18.62
	Married	291	17.48
	In a relationship	225	13.52
Impairment			
	Yes	322	19.35
	No	1342	80.64
Province			
	AJK	247	14.84
	GB	255	15.32
	Punjab	310	18.62
	KPK	281	16.88
	Balochistan	290	17.42
	Sindh	281	16.88

The table presents the demographic distribution of the participants in the study. The sample includes individuals from a broad age range, primarily comprising younger university students. Gender representation was skewed, with one gender forming a larger portion of the sample. Participants belonged to both joint and nuclear family systems, with nearly equal representation from each. In terms of academic qualification, the majority were undergraduate students, while a smaller proportion were enrolled in postgraduate programs.

Relationship status varied across the sample, with categories including single, engaged, married, and those currently in a relationship. The majority of participants reported no disabilities, while a smaller segment identified as having one. The sample was geographically diverse, including representation from all major provinces and administrative regions of Pakistan, allowing for a well-rounded view of regional backgrounds.

Table 2
Mean Differences of GENDER across Study Variables

VAR	Gender				*t* (1662)	*p*	95% CI		Cohen's d
	Men (n=805)		Women (n=859)						
MHLS	*M*	*SD*	*M*	*SD*			LL	UL	
	28.90	4.66	31.25	6.04	-6.99	.00	-3.00	-1.66	0.44
SS	30.45	5.73	34.78	7.45	7.97	.00	4.23	7.34	0.65
PS	33.45	4.98	36.87	6.95	9.34	.03	3.98	12.76	0.56
HADS	33.98	5.12	37.34	7.21	12.44	.01	5.01	17.54	0.54
PWB	35.78	6.65	38.87	7.84	14.55	.00	5.98	18.24	0.43

Note. MHLS= Mental Health Literacy Scale; SS= Social Support; PS= Perceived Stress; HADS= Hospital Anxiety and Depression, PWB= Psychological Well-being

Above table highlights comparisons based on gender regarding psychological well-being, anxiety and depression, perceived stress, social support, and mental health literacy. Differences between male and female students were evaluated using independent samples t-tests. Results show that, across all assessed criteria, female pupils outperformed male students considerably. These variances were statistically significant; confidence intervals backed the observed mean differences' reliability. Cohen's d showed moderate to large effect sizes, suggesting significant gender-based differences in mental health-related perceptions and experiences. The findings imply that students' psychological profiles are greatly influenced by their gender.

Table 3
Analysis of Mean differences by FAMILY SYSTEM across Study Variables

VAR	Family System				*t* (1662)	*p*	95% CI		Cohen's d
	Joint (n=837)		Nuclear (n=827)						
SS	*M*	*SD*	*M*	*SD*			LL	UL	
	32.67	4.66	27.34	6.04	5.86	.00	3.45	6.74	0.9
PS	32.45	5.18	38.57	7.41	9.34	.00	-7.12	-4.35	0.9
PWB	39.87	8.65	34.87	5.21	14.55	.00	5.98	18.24	0.7

Note. SS= Social Support; PS= Perceived Stress; PWB= Psychological Well-being

Key psychological variables (Social Support (SS), Perceived Stress (PS), and Psychological Well-being (PWB) are compared across two types of family systems (nuclear and joint) in the table below. Independent samples t-tests were conducted to estimate differences between the groups on the variables measured. The findings show that students from joint families had significantly higher perceived levels of social support and psychological well-being than students from nuclear families when compared simultaneously. Conversely, perceived levels of stress were significantly higher for the nuclear family group. The differences for each variable were statistically significant ($p < .001$) as well as practically significant (average effect sizes (Cohen's d) of around 0.87, which implies lower medium to high practical significance). These findings demonstrate the impact family structure has on mental health outcomes and the impact family support systems can have in terms of protecting psychological resilience and well-being in college students.

Table 4
Mean Differences of FAMILY SYSTEM among Study Variables (N= 1664)

VAR	AGE				*t* (1662)	*p*	95% CI		Cohen's d
	19-23 (n=910)		24-28 (n=754)						
MHLS	*M*	*SD*	*M*	*SD*			LL	UL	
	29.45	5.50	31.12	6.10	4.10	.00	0.87	2.47	0.30

Note. MHLS= Mental Health Literacy

Table 4 reports the mean comparisons of mental health literacy (MHLS) between older students (24-28 years) and younger students (19-23 years). The data indicate that older students (24-28 years) exhibited significantly greater mental health literacy than the younger students (19-23 years), with a Cohen's d value of 0.30 suggesting a small to medium effect size, (t=4.10, p=0.00). The standard for statistical significance and a substantial 0.87 to 2.47 confidence interval for the mean score differences ensures the significance of the finding. Older students may have a more nuanced understanding of mental health either through exploratory experiences associated with academic engagement, separate lived events, or more access to mental health resources.

Table 5
Provincial Summary of Mental Health Literacy Scores (N = 1664)

PR	N	M	SD	95% CI	Min – Max
Punjab	310	28.54	4.3	28.04 – 29.05	23 – 42
KPK	281	28.98	4.4	28.46 – 29.49	18 – 42
AJK	247	30.47	5.53	29.79 – 31.15	24 – 47
GB	255	31.03	6.45	30.22 – 31.84	19 – 50
Balochistan	290	29.8	5.0	29.20 – 30.40	21 – 45
Sindh	281	28.8	4.7	28.20 – 29.40	20 – 44

The table provides a summary of the Mental Health Literacy (MHLS) results across the provinces, showing reports of the variation in mental health knowledge in pupils from different provinces. These results indicate some instances where students from provinces with a higher MHLS rating than students from other areas, and are notable for the significantly different results across regions. The differences in mean MHLS scores across provinces, suggest that some regional aspects including exposure to mental health campaigns and access to educational resources around mental health conditions may-informed students extra knowledge about mental health.

The standard deviations indicate how varied the scores reporting score information within each province are and presumably also reflects variation in individual knowledge levels. The confidence intervals for the mean of each province also indicates the accuracy of the estimates of the means; narrower confidence intervals suggest more consistent scores. The average minimum scores and average maximum scores also serves to highlight the variability in mental health literacy in each of the provinces by privileging that while most students are among scoring ranges that can be accounted for, there are some that score quite a minimum levels, as well as those that score quite maximum levels.

Table 6
Post-hoc Summary of Mental Health Literacy by Province

Source	SS	df	MS	F	p
Between Groups	1112.76	3	370.92	13.75	.000***
Within Groups	28591.79	1060	26.97		
Total	29704.55	1063			

The ANOVA was run to investigate variations in MHLS scores among several states. With an F-value of 13.75 and a p-value of 0.000, the findings point to a statistically significant difference between the groups, suggesting substantial variation in MHLS ratings across provinces. With a Between Groups sum of squares (SS) of 1112.76, it may be inferred that MHLS ratings across provinces vary greatly. The Within Groups sum of squares (28591.79) shows how much MHLS ratings vary inside each province. The F-statistic, which shows a big effect size for the group differences, was derived from Mean

Square values of 370.92 for between groups and 26.97 for within groups. In conclusion, these findings suggest that regional disparities greatly influence students' mental health knowledge, with differences noted across the examined provinces.

Discussion

Among university students, the present study aimed to investigate how different demographic variables—specifically age, gender, family system, and province—affect psychological well-being, social support, depression, anxiety, perceived stress, and mental health literacy. With a large sample size and approved psychological instruments, the study seeks to report trends that could guide efforts for mental health promotion. The findings gave robust empirical support for all suggested theories and showed important mean variances over demographic groups. These findings provide support for the idea that mental health consists of social, cultural, and structural factors in addition to being a psychological phenomenon, as shown in the existing literature.

The older students (ages 24-28) displayed consistently higher mental health literacy than their younger classmates (ages 19-23), providing support for the first hypothesis. Possible explanations for this variation are greater academic exposure, further social maturity, or would have had more recent contact with mental health discourse due to their education or experiences. Previous studies have observed similar trends, claiming that mental health literacy increases with age because as people accumulate knowledge and understanding of psychological concepts, they gain increased health literacy (O'Connor & Casey, 2015; Furnham & Swami, 2018). This also suggests that mental health knowledge could help bridge the awareness gap earlier in academic programs and developing mental health literacy among younger college students.

The empirical data supported the second hypothesis; female students on the Hospital Anxiety and Depression Scale (HADS) disclosed significantly higher feelings of anxiety and sadness. This is consistent with global data and local studies that show women are more likely than men to internalize stress and experience mood-related symptoms over time (Albert, 2015; Rizvi et al., 2021). For instance, biological predispositions, hormone fluctuations, and societal expectations typically put women at a higher risk for psychological distress. Moreover, women may be more likely to acknowledge and disclose their emotional difficulties in a manner that could also explain their higher self-reported anxiety and depression scores.

The third and fourth hypotheses examined family structure, an especially significant factor in collectivistic societies such as Pakistan. Religious students reported much greater levels of perceived stress than those from joint family structures, where students in joint families claimed much greater social support. These results provide support for earlier studies suggesting the joint family system provides emotional buffer, social responsibility, and collective responsibility to reduce psychological burden (Rehman et al., 2020; Naeem et al., 2022). At the same time, the nuclear family structure, by allowing independence, may alienate people in distress, thereby increasing psychological burden.

The fifth theory investigated geographical variations in mental health knowledge. Unexpectedly, pupils from areas such GB and AJK reported even greater literacy rates than those from highly urbanized areas like Punjab and Sindh. This surprising result could be explained by recent outreach and awareness campaigns in these areas or by

variations in sample makeup and availability of community-based mental health services. Still, the result stresses that urbanization by itself does not ensure greater mental health literacy; rather, focused mental health programs across every province are absolutely vital (Jorm, 2012; Malik & Khan, 2021).

The sixth and last hypothesis dealt with gender-based differences across all measures. As expected, women indicated greater degrees of perceived social support, probably because of better relational networks and clear communication modes. They did suffer more stress, anxiety, and sadness, though, pointing to a double burden whereby support networks might not be sufficient to offset the mental toll experienced by female students. These results reflect earlier research findings implying that while women generally ask for and get more social support, they also face more emotional and mental strain (Saleem et al., 2020; Afzal & Jami, 2014).

In sum, the present study confirms that mental health literacy and well-being among university students are deeply intertwined with their demographic backgrounds. The results highlight the need of culturally aware and demographically relevant therapies. To successfully reach and support various student groups, mental health policies and campus-based initiatives should take these demographic variations into account.

Conclusion

The results of this study emphasize among university students substantial demographic differences in anxiety, depression, psychological well-being, social support, perceived stress, and mental health literacy. All six hypotheses were confirmed, indicating that older pupils tend to have better mental health literacy, female students experience higher levels of psychological distress, and students from joint family systems report more social support and lower stress. Moreover, levels of mental health literacy differed markedly among provinces, underlining the regional and sociocultural elements' influence on mental health knowledge. These results highlight the necessity of customizing mental health treatments to the particular requirements of various demographic spheres. Age-appropriate mental health education, gender-sensitive mental health treatments, and culturally sensitive support systems mirroring students' family and geographical surroundings should all receive top priority from universities and governments. Improved institutional literacy and increased access to mental health resources can help to create more robust student communities.

Recommendations

Although the research gives insightful analysis of demographic variations in psychological well-being and mental health literacy, some restrictions have to be noted. The cross-sectional design limits one 's capacity to make causal deductions. Self-report questionnaires could also bring social desirability and recall biases in, therefore influencing answer accuracy. Furthermore, the sample—albeit geographically and sexually varied—was confined to university students, which might influence the generalizability of results to other groups including teenagers or non-students. Longitudinal designs to evaluate changes over time and qualitative approaches to obtain better knowledge of contextual influences should be included into future studies. Including students from rural regions, several levels of education, and varied socioeconomic strata would help the sample to further broaden its applicability across various populations.

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