

Does Perceived Social Support Affect Anxiety Level Among University Students? Findings from a Cross-Sectional Study

Badr Alnasser, Rakesh Kumar*

Department of Health Management, College of Public Health and Health Informatics, University of Ha'il, Ha'il, Saudi Arabia.

*Correspondence to: Rakesh Kumar (E-mail: ra.kumar@uoh.edu.sa)

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Abstract

Objective: This research examines the role of perceived social support (PSS) in impacting the anxiety level of university students in Kingdom of Saudi Arabia (KSA).

Methods: 446 university students participated voluntarily from various institutions in KSA. A convenience sampling approach was used to finalize these participants. An online close-ended survey was shared with participants for data collection. This survey was conducted between March 10 and May 10, 2025. Both constructs (e.g., PSS, and anxiety) were measured using validated scales. Furthermore, the personal attributes of participants such as age, academic grade, and sleeping satisfaction were counted in as control variables. The collected analysis consists off sample attributes' summary, descriptive statistics, diagnostic test for basic assumptions, and hierarchical regression estimates. These analyses were performed using SPSS version 27.

Results: The findings revealed that age, academic grade, and sleeping satisfaction explained 3.8% of variation in anxiety. Age ($\beta = 0.110$ to 0.240 , and P -values < 0.10 to < 0.01) and sleeping satisfaction ($\beta = 0.237$, and P -value < 0.05 to < 0.01) were positive predictors, but academic grade ($\beta = -0.267$, P -values < 0.10 to < 0.05) was a negative predictor. However, when PSS was entered in hierarchal regression analysis, the explained variance significantly increased to 64.2%. Additionally, PSS significantly decreased anxiety level ($\beta = -0.570$, and P value < 0.01). It inferred that increasing the social support plays a robust role in decreasing the anxiety levels.

Conclusion: The study concludes that perceived support from friends and family play an important part in decreasing anxiety levels among university students. Additionally, it has a greater impact compared to lifestyle and demographic factors. This support network intervention may have applications in improving mental health among this subject population. Further research into some of these selected programs enhancing social support as a buffer against anxiety among university students in Saudi Arabia would be beneficial.

Keywords: Perceived social support, anxiety level, University students, mental health, Saudi Arabia

Introduction

University students encounter critical mental health problems because of academic demands, social pressures, and personal issues. Anxiety is a common concern among student community.^{1,2} Anxiety may have unfavorable impacts on students' academic success, interpersonal relationships, and mental health in general.³ For this reason, identifying potential sources, to relieve this burden, are important to consider. One potential source of relief is perceived social support (PSS), which has been proven to defend stress and lower anxiety levels.⁴ Furthermore, high-quality social support networks also offer information, emotional, and instrumental assistance, which are likely to reduce stress and feelings of loneliness.⁵

Past literature has repeatedly revealed that social support strongly reduces anxiety. For example, it opines that individuals who have more social support are less anxious.⁶ Moreover, social support serves as a buffer against anxiety.^{7,8} Similarly, social support occurs through the bolstering of coping mechanisms and the minimization of perceived stress.^{9,10} In spite of this vast literature, there has been an important gap in investigating the particular function of PSS in helping to reduce anxiety among university students in Saudi Arabia. Most of the past studies have involved Western populations, and the results might not generalize fully across the Saudi context. The Saudi context has an assortment of distinct cultural, social, and academic determinants.¹¹ In addition, primary literature wherein demographic variables like age, academic grade, and sleeping satisfaction are combined with PSS is sparse. Combining these demographic and lifestyle variables with PSS is relevant in aiding to make predictions regarding the level of

anxiety among university students in Saudi Arabia. This gap is important because demographic and lifestyle attributes are likely to mediate the impact of social support on anxiety among this particular population.

This research helps to address an important issue of student's mental health in academia. It examines the role of PSS in impacting the anxiety levels of university students in KSA. Furthermore, the personal attributes of participants (e.g., age, academic grade, and sleeping satisfaction) have been examined to inform their impacts on anxiety levels. This study offers a novel contribution to knowledge for KSA which is an underexamined context for this study. It offers an understanding of the relation between PSS and anxiety as per the unique context of KSA.¹² Likewise, the findings of this study enhance how health programs are customized for improving mental health. The results of this research are important for improving university-based services related to mental health in KSA. Moreover, the findings could provide the basis for future initiatives in response to the growing concern of mental health.

Material and Methods

Study Design and Setting

This research employed a cross-sectional design using a close-ended online questionnaire to capture data among university students in Saudi Arabia. The questionnaire was administered at University of Hail with students of varying academic and demographic backgrounds. The data collection was done within a two-month period, from March 10, 2025, to May 10, 2025. The design allowed for economical measurement

of variables at one point in time. It allowed statistical analysis of relationships among the study constructs and reduced the demands on resources and burden on participants.

Participants

Following item response theory, at least 130 had to be the sample size, that is 13 items \times 10. The invitations, however, were distributed to 500 individuals who provided complete responses totaling 446. Convenience sampling was used in getting participants' responses. The respondents were diverse in gender, age, academic grade, marital status, socioeconomic standing, and lifestyle determinants; even the pattern of internet use was varied. This ensured wide coverage in terms of the target students. Convenience sampling was adopted due to its practicality in accessing a diverse student population within time and resource constraints.¹³ This non-probability approach does not enable generalization and can result in sampling bias. However, as Creswell and Creswell (2017)¹⁴ note, heterogeneity was guaranteed as the participants differed according to gender, age, socio-economic status, and lifestyle; therefore, the study became representative and helped in exploratory research.

Inclusion and Exclusion Criteria

Inclusion Criteria

Participants were eligible if they were enrolled at University of Hail, Saudi Arabia during data collection and were at least 20 years old. Additionally, they needed to be able to read and understand either English or Arabic. Students who provided informed consent only were included. It confirmed respondents had adequate educational ability. It also confirmed their language ability to respond appropriately to the questionnaire.

Exclusion Criteria

Students were excluded if they gave incomplete questionnaire responses, were exchange students studying temporarily at University of Hail, Saudi Arabia, or had a medical or psychological condition. These types of conditions would have an impact on the study variables to a significant degree. These standards made data accurate and relevant.

Construct Measurements

Measurement of PSS

PSS was operationalized in the Saudi context through the standardized and validated 6-item questionnaire of Kliem et al. (2015).¹⁵ Each item/statement is measured using 5-point type of Likert scale ("strongly disagree - strongly agree").

Measurement of Anxiety

A Generalized Anxiety Disorder-7 (GAD-7) scale was adapted from Alghadir et al. (2020),¹⁶ to assess university students' symptoms of anxiety. The self-report questionnaire assigns a score to the occurrence of symptoms in the previous two weeks on a four-point Likert scale, and it provides an overall score of severity of anxiety. It has distinct cut-scores available defining minimal, mild, moderate, and severe levels of anxiety (from 1 to 4).

Measurement of Control Variables

Control variables were age, recorded in years and categorized into 20–25, 26–30, and older than 30 for analytical purposes. Academic grade was categorized into high and low grades. These grades represented students accumulated academic performance throughout college so far. Sleeping satisfaction was measured with two response alternatives: satisfied and not satisfied. These alternatives represented participants' own judgment of their recent sleep quality.

Statistical Analysis

The data were analyzed statistically using SPSS version 27. Descriptive statistics were employed to summarize the study variables and demographic characteristics. Hierarchical regression analysis was used to analyze associations of independent variables with scores of anxieties. Validated demographic and lifestyle factors were included as control variables based on prior literature establishing their influence on psychological outcomes.^{17,18} These control variables were entered sequentially in the first block to isolate their effects before adding the main predictors in subsequent steps.

Results

This study included 446 university students, consisting of 296 males and 150 females. The largest group of participants was aged 26–30 years (38.8%), followed by those over 30 years old (38.1%). High academic grades in classes were mentioned by 244 students (54.7%). The majority were lived with their family (85.4%) and strong friendship was mentioned by 77.1% of participants. Physical exercise was mentioned by 256 participants (57.4%), and 59 participants (13.2%) were smokers. Satisfaction with sleeping was mentioned by 366 students (82.1%). Additional descriptions are provided in Table 1.

Table 2 displays the descriptive statistics and correlation analysis outcomes for anxiety and PSS among 446 university students. The anxiety scale (7 items) revealed strong inner consistency ($\alpha = 0.858$), and with mean and standard deviation as 1.71, and 0.77 respectively. Values of skewness (1.682) and kurtosis (1.800) revealed a positively skewed distribution. The PSS scale (6 items) revealed good reliability ($\alpha = 0.871$), with a mean and standard deviation as 3.86, and 1.07 respectively. The scale showed negative skewness (-1.204) and moderate kurtosis (0.542). The correlation matrix indicates a strong negative association of PSS with anxiety ($r = -0.794$, and P -value 0.000). These results indicate that greater social support tends to be related to lower levels of anxiety. These results confirm theoretical anticipation about PSS acting as an anxiety buffer in university populations.

Table 3 reports the diagnostic test applied on the data of this study. All the assumptions are accepted by meeting their threshold values. The tests indicated that no assumption is violated.

Hierarchical regression analysis as reported in Table 4 investigated the impact of demographic and PSS scale on levels of anxiety among university students. In Model 1, anxiety was significantly predicted by age, ($\beta = 0.110$, $P < .05$), and explained 1.2% of variance, $R^2 = .012$, ($F(1, 444) = 5.31$, and P -value = .022). In Model 2, academic grade was added. It strongly reduces anxiety, ($\beta = -0.267$, and P -value $< .05$).

Age remained significant ($\beta = 0.240$, and P -value $< .01$). This added 1.3% to explained variance, $\Delta R^2 = .013$, ($\Delta F(1, 443) = 11.78$, and P -value = .017). In Model 3, satisfaction with sleeping was added. It strongly enhances anxiety, ($\beta = 0.237$,

and P -value $< .05$). Age and academic grade remained significant, accounting for 3.8% of explained variance, $\Delta R^2 = .014$, ($\Delta F(1, 442) = 6.30$, and P -value = .012). These results provide support for the proposition that demographic and lifestyle variables have a small but significant effect on levels of anxiety among university students.

Model 4 added PSS to measure its unique contribution after adjusting for demographic and lifestyle variables. PSS strongly reduces anxiety, ($\beta = -0.570$, and P -value $< .01$). It added explained variance significantly to 64.2%, $\Delta R^2 = .604$, ($\Delta F(1, 441) = 743.32$, and P -value $< .001$). In the final model, sleeping satisfaction was still significant ($\beta = 0.205$, and P -value $< .01$). Age ($\beta = 0.054$, and P -value $< .10$) and academic grade ($\beta = -0.070$, and P -value $< .10$) were only marginally significant. Multicollinearity diagnostics (Tolerance > 0.4 , VIF < 2.4) showed no cause for concern. These results provide empirical evidence of the significant role of PSS in decreasing levels of anxiety among university students at University of Hail. It dominates the comparatively small contributions of demographic and lifestyle variables. This highlights the need to develop support networks to enhance mental well-being among this student population.

Discussion

The research investigated how perceived social support helps to reduce the anxiety level of university students in KSA. Additionally, it examined what role the age, academic grades, and sleeping satisfaction play as the personal attributes for anxiety of university students. The results show that perceived social support play a strong role in decreasing the level of anxiety for sampled students. It projected the social support perception as an important shield against anxiety. Additionally, the results also found that some personal features of these students like their age, and academic grades also play an important role for affecting anxiety levels. For example, the results indicated that more senior and older students may have lessor anxiety as compared to junior and younger. A number of studies from existing literate supported the buffering role of social support against anxiety and stress.^{19,20} Social support encompasses emotional and instrumental assistance and enables students to handle academic and personal stress and anxiety.

Table 1. Demographic summary

Attributes	Categories	N	%
Gender	Male	296	66.4%
	Female	150	33.6%
Age (Years)	20–25	103	23.1%
	26–30	173	38.8%
	> 30	170	38.1%
Academic grades	High	244	54.7%
	Low	202	45.3%
Monthly household income (Riyals)	1000–5000	49	11.0%
	5001–10,000	118	26.5%
	>10,000	279	62.6%
Living with family	Yes	381	85.4%
	No	65	14.6%
Relation with friends	Strong	344	77.1%
	Weak	102	22.9%
Regular physical activity	Yes	256	57.4%
	No	190	42.6%
Sleeping satisfaction	Satisfied	366	82.1%
	Not Satisfied	80	17.9%
Sleeping status	Adequate sleep	206	46.2%
	Moderate sleep	197	44.2%
	Inadequate sleep	43	9.6%
Cigarette smoker	Yes	59	13.2%
	No	387	86.8%
Internet use	Yes	446	100.0%
	No	0	0.0%

Table 2. Descriptive statistics and correlation summary

	N	Items	α	Min	Max	Mean	STD	Skew	Kurt	ANX	PSS
ANX	446	7	0.858	1.00	4.00	1.7088	0.77428	1.682	1.800	1	-.794***
PSS	446	6	0.871	1.00	5.00	3.8625	1.06717	-1.204	0.542	-.794***	1

ANX: Anxiety; PSS: Perceived social support (* $P < 0.10$, ** $P < 0.05$, *** $P < 0.01$).

Table 3. Diagnostic test

Model assumptions	Test	Criteria	Test statistics	P-value	Decision
Normality of residuals	KS	P -value > 0.05	0.239	0.1321	Normal
	SW		0.75	0.1765	
Independence of residuals	DW	Test statistics close to 2.00	1.989	–	Independent
Homoscedasticity	BP	P -value > 0.05	10.97	0.0876	Homoscedasticity
Multicollinearity	VIF	VIF < 5	1.001–1.002	–	Absent

KS: Kolmogorov-smirnova; SW: Shapiro-wilk; DW: Durbin watson; BP: Breusch-pagan; VIF: Variance inflation factor.

Table 4. Analyzing hierarchical regression

Models	1	2	3	4	Tol	VIF
Age	0.110**	0.240***	0.228***	0.054*	0.420	2.384
Academic Grade		-0.267**	-0.259**	-0.070*	0.426	2.350
Sleeping Satisfaction			0.237**	0.205***	0.994	1.006
PSS				-0.570***	0.978	1.022
Constant	1.473***	1.580***	1.316***	3.655***		
R	0.109	0.157	0.196	0.801		
R ²	0.012	0.025	0.038	0.642		
Adj-R ²	0.010	0.020	0.032	0.639		
R ² Δ	0.012	0.013	0.014	0.604		
F	5.310**	5.572***	5.857***	197.60***		
F Δ	5.310**	11.776**	6.295**	7.43.32***		
P-value (F)	0.022	0.004	0.001	0.001		
P-value (F) Δ	0.022	0.017	0.012	0.001		

DV = ANX: Anxiety; IV, PSS: Perceived social support (* $P < 0.10$, ** $P < 0.05$, *** $P < 0.01$).

Nevertheless, there were studies that reported either a weak or non-significant association between perceived support and anxiety. Therefore, these studies showed that contextual or cultural factors might moderate this relationship. Examples of such studies include Chancy et al. (2022)²¹, and Chen (2025)²². Therefore, the study reflected a robust relationship with a communitarian orientation in KSA society. Furthermore, it also places a high value on social networking which is based on support from family and peers. The results advocate developing a supportive network that may serve as an effective intervention in reducing anxiety levels for university students. It is agreed with some similar findings of existing studies.^{23,24}

The existing literature has focused on Western, or East Asian educational settings. However, this research provides a novel contribution by examining the perceived social support within higher education of KSA context. This context includes a university life combines with cultural hopes, family participation, and religious values. All these things impact the coping strategies and support-seeking activities. Therefore, the results emphasize that social support as a psychological as well as culturally embedded construct is very important for KSA.

The findings of this research match with the findings of some existing studies. For example, robust negative effects of social support on levels of anxiety for other contexts found.^{25,26} This research further reveals that the perception of social support play an important role in safeguarding against anxiety levels. However, as per the results of this study sleep satisfaction was weakly related to anxiety. In fact, it was revealed as the strong predictor of anxiety as perceived social support. The result aligns with the buffering hypothesis. This hypothesis highlights the role of social support in dealing with anxiety under external pressure.²⁷ Moreover, the personal factors like age as well as academic grade were also found to have strong predictors of anxiety. It matches with similar results like students of older age and seniors have better coping skills against stress and anxiety.^{28,29} It may be because they have more life exposure or more familiar with academic expectations.

However, the failure to create gender differences in the present research opposes earlier studies. This earlier research

has indicated that female students may have higher anxiety level as compared to males.^{30,31} The inconsistency could be related to growing gender parity in academic engagement and equal access to social resources in Saudi universities, hence requiring further investigation.

Surprisingly, demographic indicators like gender and relation with friend, did not demonstrate significant relationships with levels of anxiety. Even though previous studies have suggested that gender is an important factor in anxiety, our findings indicate that social support gives a stronger prediction. This would suggest that mental health interventions focusing on networks of social support should have more priority than demographic indicators.³² Despite this, demonstrating such an evident linkage between smoking and anxiety calls for more research. Precisely, further research is needed to investigate the impacts of other personal attributes (e.g., smoking), and the student's mental health status in higher educational institutes. Moreover, the impact of sleep on anxiety is significant. However, it did not establish similar effect size as PSS. The environmental and social factors are considered to impact students' welfare in a more robust manner.³³ It inferred that some culturally tailored involvements may emphasize social relationships. This support collective well-being and consider it as more effective as compared to solely individual-focused tactics.

These outcomes provide vital practical implications of mental health programs for university students. The university's policymakers should integrate mental health programs into the academic agenda. Furthermore, universities should also work in partnership with relevant ministries (e.g., "Ministry of Education and the Ministry of Health") to implement nationwide awareness campaigns.

As an emotional need, providing a system of peer social support, improving relationships, and creating counselling services are needed. These efforts are required to decrease the anxiety among students. Moreover, it is also necessary to have a caring community within campus. Likewise, the educational institutes are also required to address concerns about sleep issues. These are important considerations in making positive changes to student mental health within a higher educational

institute. This culturally grounded perspective extends the international literature by showing that interventions leveraging family and communal networks can amplify the positive impact of PSS. The future studies may consider the longitudinal designs of research to examine the impact of PSS for extended timeframe on anxiety level. Moreover, further research needs to consider diverse samples (e.g., Universities from diverse region) to enhance the generalizability. Similarly, comparative studies between Saudi Arabia and other cultural contexts would also explain whether the effects observed are culture-specific or universal. The research outcomes to these questions will not only help in fine-tuning theoretical models of social support but will also inform targeted policy and practice for improving the mental health of students.

Conclusion

The study found an important role of perceived social support in decreasing the levels of anxiety among the students of a university. The findings show that the students who perceive a higher social support level may experience anxiety at low level. Additionally, the age, and academic grades as the demographic attributes of students can also have significant impact on the levels of anxiety. These results reveal that integrating a system of social support in any educational institutions including universities can have an important impact on mental health. Providing suitable resources and social networking opportunities to students may help the students community in a number of ways. It can facilitate them to manage their personal stress level and also ease their academic adaptation. Moreover, it is recommended to start some programs on peer support systems through interactions of faculty-student in universities. Similarly, in order to make the campus climate more supportive, it is further advised to enhance the counseling services available. Using these exertions could enhance the student's success along with mental health during the course of university academic life. Furthermore, it is also suggested that improving the sleeping level may also improve anxiety by decreasing it. In this way, we can observe a reality of mental health in the shape of multi-faceted students. However, future research could consider the impact of perceived social support on anxiety level for long-term. More research is required to examine the differences of culture for students having the use and perception of a network of social support. Likewise, more research is needed to understand the specific needs of students at different university across diverse region in different universities in order

to finalize some interventions. In this way, a healthier culture in campus can be created by increasing mental health.

Strength and Limitations

Several strengths are notable in this study: the cross-sectional design and the comprehensive sample of 446 participants make the findings more reliable. The study contributes to a better understanding of the role of PSS as a partial mediator of anxiety levels among university students in the under-investigated Saudi Arabian context. The limitations of the study are that, because of the cross-sectional design used, no causal links between social support and anxiety can be drawn. Also, the use of self-reporting instruments may pose biases, including social desirability bias. Finally, the single university sample of the study reduces the generalizability of the findings across the larger population of university students in a diverse region.

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Conflict of Interest

None.

Ethical Considerations

The Research Ethics Committee (REC) University of Ha'il, KSA has granted ethical approval (No.: H-2024-153) for this research.

Informed Consent

The participants of this study provided their consent.

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Data Availability

The data used in this research can be requested from corresponding author. ■

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