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RELATIONSHIP BETWEEN ANXIETY, DEPRESSION AND AGGRESSION AMONG FEMALE UNIVERSITY STUDENTS

Adeela Rehman[1*], Sajida Naz[2], Sarwet Rasul[3], Shahla Adnan[4], Komal Dur-e-Shehwar[5], Nadia Bakhtawar[6]

[1*]Assistant Professor, Department of Sociology, Fatima Jinnah Women University, Rawalpindi. Pakistan, Email: adeela.rehman@fjwu.edu.pk
[2]Associate Professor, Department of Behavioral Sciences, Fatima Jinnah Women University, Rawalpindi. Pakistan, Email: dr.sajida@fjwu.edu.pk
[3]Professor, Department of English, Fatima Jinnah Women University, Rawalpindi. Pakistan, Email: sarwet.rasul@fjwu.edu.pk
[4]Assistant Professor, Department of Communication and Media Students, Fatima Jinnah Women University, Rawalpindi. Pakistan,
Email: shahla.adnan@fjwu.edu.pk
[5]Visiting Faculty, Department of Sociology, Fatima Jinnah Women University, Rawalpindi. Pakistan,
[6]Lecturer, Department of Gender Studies, Fatima Jinnah Women University, Rawalpindi Pakistan

[*]**Corresponding Author:** Adeela Rehman
[*]Assistant Professor, Department of Sociology, Fatima Jinnah Women University, Rawalpindi. Pakistan, Email: adeela.rehman@fjwu.edu.pk

Abstract
The present study was carried out to examine levels of anxiety, depression and aggression among female university students in Pakistan. Additionally, it was hypothesized that anxiety and depression would significantly predict aggression among study participants. A total of 478 participants completed a cross sectional survey measuring anxiety, depression and aggression using standardized measures i.e., GAD 7, PHQ 9 and Buss & Perry Aggression Questionnaires respectively. Among the 478 female undergraduate students who took part in the current study, 33.5% were identified with clinically significant levels of depression, and 28.5% with clinically noteworthy levels of anxiety. Regarding aggression, the survey revealed that 38.3% reported high levels of physical aggression, 46.7% reported high levels of verbal aggression, 48.3% expressed high levels of anger, and 48.5% exhibited high levels of hostility. Significant variations were noted between groups categorized by a) presence or absence of depression and b) presence or absence of anxiety in terms of aggression. The groups displaying clinical symptoms demonstrated higher average scores across all aggression domains in the questionnaire. Moreover, there were evident positive correlations observed between anxiety, depression, and all categories of aggression. These findings highlight need for an early intervention to address mental health outcomes associated with aggression in educational and clinical settings.

Keywords: Anxiety, Depression, Aggression, female university students, Pakistan

Introduction

Educational institutions hold an important responsibility for the healthy development and

achievement of their student body. Once the students are enrolled into a higher education institute,

the responsibility lies with the university to envelope, develop and graduate students, who are psychologically and academically sound, and in so doing, provide an atmosphere of inclusion and acceptance. An institution therefore, must explore, refine and/or develop successful models of student development which are both cognitively and psychosocially adept and embrace such, in order to be productive and successful in its efforts to retain and graduate students minimizing and destroying barriers in the process.

Research has shown that an early detection of mental health issues gives a much better prognosis for recovery and that early intervention can sometimes be critical. Students need help in a variety of issues such as in clarifying values and priorities, increasing self-confidence, coping with anxiety and stress, and overcoming loneliness and depression. Counselors are not normally the first people students turn to when they have problems. Students are in almost daily contact with friends, resident assistants, advisors, and faculty members and they naturally confide in those closest to them when they are having difficulties. As a result, these individuals are in an excellent position to assist students in distress, and also to refer students to professional counseling when it may be helpful.

This research was conducted as part of a health project / intervention to follow up the health status of university students over a period of two years. Time one and time two assessments were undertaken and after comparing the profiles, specific tailored interventions were provided to those identified with several mental health issues. Among 651 registered students, 478 appeared for screening of mental health. According to the findings of the survey and screening, 24 students were identified for severe mental health problems which required counseling sessions. In the current project, mental health problems were assessed by using Patient Health Questionnaire and Generalized Anxiety Disorder Scale (GAD-7). A detailed case history of present and past psychological health was undertaken. Time one data was collected during September 2021 and a followup data was conducted at Time two. Results showed a significant level of anxiety and depression prevalence among university students. A definite need of psychosocial support focusing on tailored mental health interventions was emphasized.

Literature Review

Aggression among university students is a multifaceted and critical issue within academic settings. With the transition from adolescence to adulthood, students face numerous challenges that may contribute to heightened aggressive behaviors. Understanding the underlying factors and manifestations of aggression in this demographic is pivotal for fostering a safer and more conducive learning environment. Several factors intertwine to influence aggression among university students. Academic stress, coupled with social and peer pressures, can create a breeding ground for aggressive behaviors. Studies indicate that students struggling with anxiety, depression, or other mental health issues are more prone to exhibiting aggression as a coping mechanism (1). Moreover, environmental factors such as substance abuse (2.), exposure to violence (3), and lack of conflict resolution skills (4) can exacerbate aggressive tendencies.

Aggression can manifest in various forms, ranging from verbal altercations and physical confrontations to more subtle behaviors like passive-aggressiveness and cyberbullying (5). These aggressive tendencies not only disrupt the academic ambiance but also affect mental well-being and overall quality of life. Furthermore, unresolved aggression may lead to long-term repercussions, hindering academic performance and social integration (6,7).

Anxious Depressive Symptomology and Aggression

The relationship between anxiety and aggressive tendencies among university students is a nuanced and interconnected one. While anxiety and aggression might seem contradictory on the surface, they can coexist and even exacerbate each other within this demographic (8).

Anxiety, characterized by feelings of worry, apprehension, and physiological arousal, is prevalent among university students due to academic pressures, social expectations, and transitional stress (9). Concurrently, aggressive tendencies, whether verbal, physical, or relational, can surface as a response to stressors, perceived threats, or difficulties in coping with emotional turmoil (10). In some cases,

heightened anxiety can lead to increased aggressive behaviors (11, 12). As anxiety intensifies, individuals might resort to aggression as a means of alleviating their distress or regaining a sense of control. For university students, this might manifest as lashing out verbally, engaging in confrontations, or displaying irritable behaviors towards peers or academic challenges.
The relationship between anxiety and aggression can form a cyclical pattern. Anxiety may trigger aggressive responses, which, in turn, can perpetuate feelings of guilt, shame, or heightened anxiety, creating a self-reinforcing loop (12). For students experiencing this cycle, finding healthy coping mechanisms becomes crucial in breaking this pattern. Anxious depressive symptomatology refers to the coexistence of symptoms related to anxiety and depression. Individuals experiencing this may exhibit symptoms such as persistent worry, restlessness, feelings of sadness or hopelessness, changes in sleep patterns, and a lack of concentration. In university settings, these symptoms are often exacerbated by academic pressures, social dynamics, and transitional challenges.
Research has highlighted a complex relationship between anxious depressive symptomology and aggression. While these conditions might seem contradictory, they can be interlinked. For some individuals, the internal distress caused by anxiety and depression might manifest outwardly as aggressive behaviors. This aggression could be directed towards others, self-directed, or exhibited through passive-aggressive tendencies (13). Several underlying mechanisms contribute to the relationship between anxious depressive symptoms and aggression. Heightened emotional arousal, difficulty regulating emotions, cognitive biases towards perceiving threats, and maladaptive coping strategies can fuel aggressive responses in individuals experiencing anxiety and depression.
Various external factors and mediating variables can influence the relationship between anxiety and aggression among university students. These may include environmental stressors, social support systems, coping strategies, and individual differences in temperament or resilience. For instance, a lack of adequate coping mechanisms or support networks might intensify the link between anxiety and aggressive tendencies.

The Current Study

Based on the evidence from existing literature, the current study was designed to investigate prevalence of anxiety and depression among female university students and also aimed at examining the predictive role of anxious depressive symptomatology among university population. Specifically, following were the study objectives:

Objectives of the study:

1. To find out levels of anxiety and depression among university students
2. To identify levels of aggression among university students identified with and without anxious depressive symptomology
3. To examine correlation between anxious depressive symptomology and aggression among university students
4. To determine significant predictor of aggression among university students

Method

Present research aimed to identify the role of anxiety and depression as a potential predictor towards different forms of aggression. A total of 478 university going students were recruited to participate in this cross-sectional survey. Overall research designed used in the current study was cross sectional survey method

Participant Characteristics

Female students from a local woman university were asked to participate in a health intervention approved by the university research board in which a baseline assessment on various parameters of their health was undertaken. After an initial screening carried out of 659 female students, a total of 478 complete forms were assessed for the levels of mental health problems in terms of anxiety, depression and aggression. Furthermore, this assessment was followed by a series of educational

classes for awareness and counseling. An endline assessment with same participants was done to compare results for an improvement. This study reports baseline assessment findings.

Table 1 reports demographic characteristics of the study participants. Average age range of all participants was 19 years. Majority of the students were residing in Rawalpindi district whereas 22% of the sample reported to be living in the hostels. 10% of these students were working alongside their studies. 70% of the participants reported to have their fathers as main breadwinner and working for their family.

Measures
The demographic information sheet comprised of information related to participant’s age, language they speak at home, native area of residence, parental education status, monthly income, birth order and past history of psychological or physicall illness. Other than this, following standardized measures were used in english language.
1. **Patient Health Questionnaire PhQ 9** (14): It is a nine item clinical screening measure of depression. It has been widely utilized in Pakistani setting for assessment of depressive symptomology. The scale is publically accessible for use. Criteria for cutoff for depression is 10 (more than 10 is identified as clinically depressed/anxious) The alpha reliability of this scale was high in the current study.

2. **Generalised Anxiety Disorder Scale GAD 7** (15). This scale is used to screen individuals experiencing clinically significant symptoms of anxiety. It has 7 items. Scale is publically accessible and has been validated in Pakistani setting. A score of 10 or more is used as cuttoff. The present study has reported adequate alpha reliability.

3. **Buss and Perry Aggression Questionnaire.** Short form of Buss and Perry Aggression Questionnaire (16) was used. Permission to use was granted by its authors. There are four subscales of the questionnaire namely: Physical aggression, Verbal aggression, Anger and Hostility. The current study has reported adequate alpha reliability.

Procedure
Firstly, ethical approval was secured for the current investigation through relevant institutional ethics board. After permission, concerned departments were asked to circulate an online link containing the study protocols which were filled by the students under supervision of their class teachers. The data collection was conducted in specific labs having computers and access to technicians and research team members for their facilitation.

Ethical Considerations
Ethical standards as prescribed by the American Psychological Association were adhered with. Informed consent was taken prior to the study. Participants rights of participation and withdrawal were explained. Those identified with severe levels of anxiety or depression were immediately referred for counseling services. All participants received mandatory counseling sessions for awareness.

Data Analysis Plan
A combination of parametric tests to study the group differences and prediction were undertaken

Results
Participants Characteristics
As it can be observed from the Table 1 below, a total of 136 participants were identified to have clinically significant levels of anxiety. Furthermore, their demographic profile suggests that a majority

of them were living with their families, were studying and not married, had their parents working, and were middle form. Table 1b represents similar profile for individuals identified with depression.

Table 1a: Demographic Profile (n = 478) of sample with and without anxiety

				No (n=342)	Anxiety	Anxiety (n=136)	
Variable	**Subcategories**	**M**	**SD**	**f**	**%**	***f***	**%**
Age		19.56	1.22				
Currently Living in..	With Family			279	81.58	106	77.94
	Hostel			63	18.42	30	22.06
Marital Status	Unmarried			310	90.64	126	92.65
	Engaged			27	7.89	9	6.62
	Married			5	1.46	1	0.74
On job while studying?	Yes			35	10.23	10	7.35
	No			307	89.77	126	92.65
Are your parents working?	Yes, father only			239	69.88	91	66.91
	Yes, mother only			7	2.05	5	3.68
	Yes both			25	7.31	12	8.82
	No			71	20.76	28	20.59
Birth Order	Eldest			78	22.81	36	26.47
	Middle born			160	46.78	65	47.79
	Youngest			101	29.53	32	23.53

Table 1b: Demographic Profile (n = 478) of sample with and without Depression

				No Depression (n = 318)		Depression (n = 160)	
Variable	**Subcategories**	**M**	**SD**	**F**	**%**	**f**	**%**
Age		19.56	1.22				
Currently Living in..	With Family			260	81.76	125	78.13
	Hostel			58	18.24	35	21.88
Marital Status	Unmarried			288	90.57	148	92.50
	Engaged			26	8.18	10	6.25
	Married			4	1.26	2	1.25
On job while studying?	Yes			33	10.38	12	7.50
	No			285	89.62	148	92.50
Are your parents working?	Yes, father only			226	71.07	104	65.00
	Yes, mother only			8	2.52	4	2.50
	Yes both			24	7.55	13	8.13
	No			60	18.87	39	24.38
Birth Order	Eldest			74	23.27	40	25.00
	Middle born			156	49.06	69	43.13
	Youngest			85	26.73	48	30.00

According to findings from cross tabulations (see figures 1a, b and c), physical aggression, verbal aggression, scores on anger and hostility subdomains of aggression scale were evidently higher in those having moderate to severe levels of anxiety and depression.

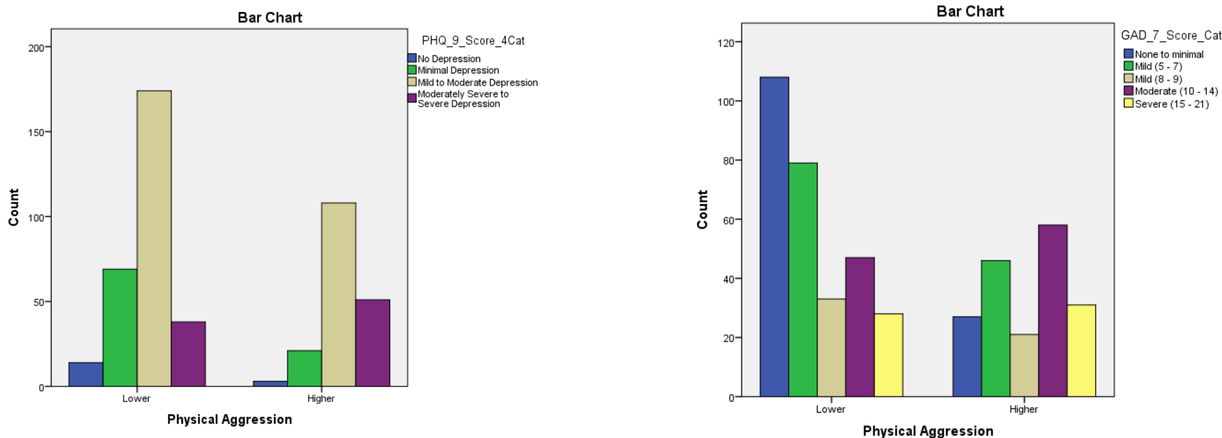

Fig 1a: Distribution of Cases and Non-Cases of Depression across scores on Verbal Aggression

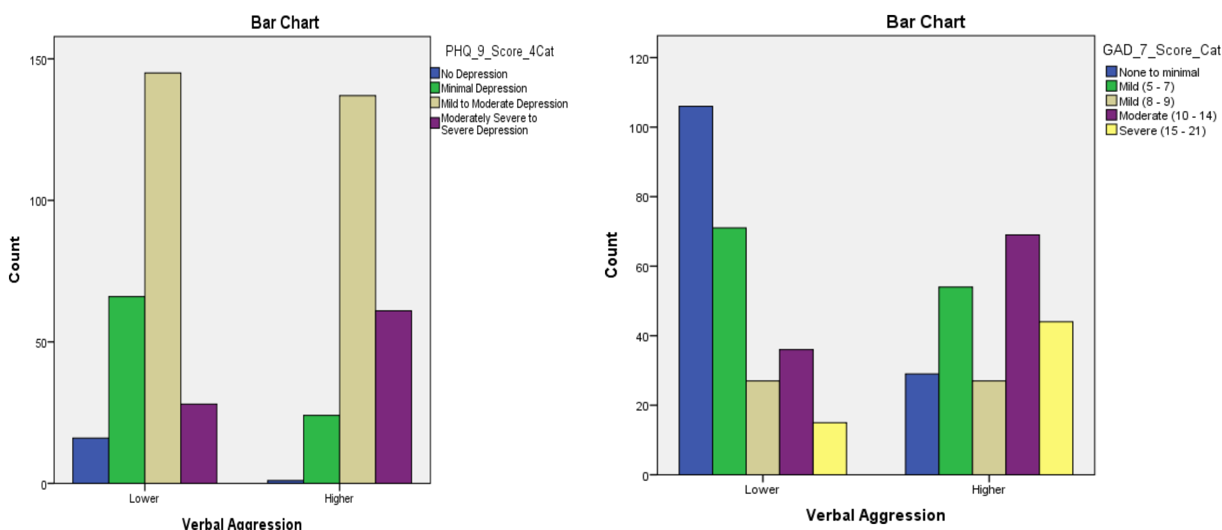

Fig 1b: Distribution of Cases and Non-Cases of Anxiety across scores on Verbal Aggression

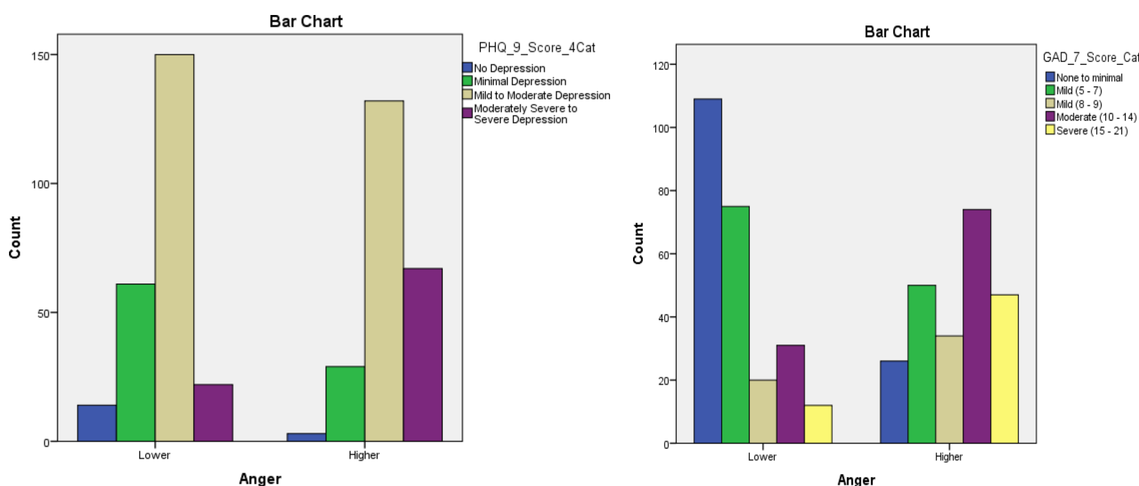

Fig 1c: Distribution of Cases and Non-Cases of Depression /Anxiety across scores on Anger

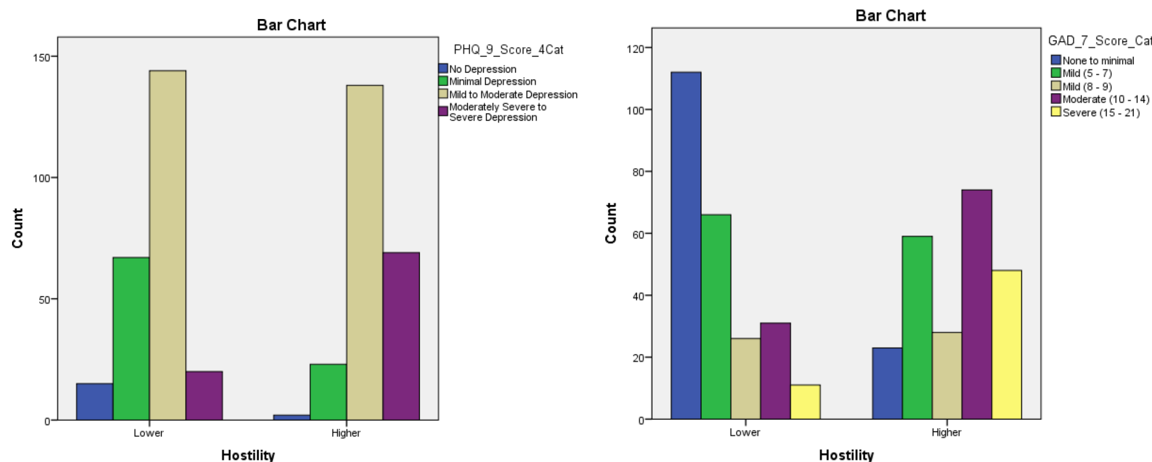

Fig 1d: Distribution of Cases and Non-Cases of Depression /Anxiety across scores on Hostility

The above-mentioned figures indicate that anxiety and depression is associated with different forms of aggression.

ASSOCIATION BETWEEN ANXIETY, DEPRESSION AND AGGRESSION AMONG UNIVERSITY STUDENTS

In terms of depression, t test analysis of difference between cases and non-cases of depression showed significant differences on all domains of aggression. Specifically, those with clinical depression scored significantly higher on physical aggression, verbal aggression, anger and hostility (see table 2a).

Table 2a: Results of differences across different domains of aggression among non cases and cases of depression

Parameters of Aggression	Non cases		Cases		$t(476)$	P	Cohen's d
	M	*SD*	*M*	*SD*			
Physical Aggression	*5.47*	2.41	*7.07*	2.99	6.314	.000	*0.73*
Verbal Aggression	6.77	2.49	8.64	*2.97*	7.261	.000	*0.68*
Anger	6.87	2.61	9.33	3.01	9.197	.000	0.87
Hostility	6.65	2.37	8.85	2.58	9.297	.000	0.88

Similarly, table 2b shows that those individuals with clinical levels of anxiety reported to have high tendencies of physical and verbal abuse, anger as well as hostility.

Table 2b: Results of differences across different domains of aggression among non-cases and cases of Anxiety

Parameters of Aggression	Non Cases (342)		Cases (136)		$t(476)$	P	Cohen's d
	M	*SD*	*M*	*SD*			
Physical Aggression	*5.62*	2.58	*6.97*	2.62	5.024	.000	*0.52*
Verbal Aggression	6.80	2.56	8.90	*2.83*	5.783	.000	*0.77*
Anger	6.67	2.38	9.18	2.42	9.728	.000	0.91
Hostility	6.65	2.37	8.85	2.58	9.333	.000	0.89

There were significant associations observed between anxiety, depression and different domains of aggression (i.e., Physical aggression, verbal aggression, anger and hostility).

Table 3: Correlations among main study variables

	Physical Aggression Score	Verbal Aggression Score	Anger Score	Hostility Score	Total Aggression Score	GAD_7_Score	PHQ_9_Score
Physical Aggression Score	1	.628**	.636**	.615**	.837**	.345**	.371**
Verbal Aggression Score	.628**	1	.698**	.630**	.863**	.473**	.435**
Anger Score	.636**	.698**	1	.674**	.883**	.537**	.489**
Hostility Score	.615**	.630**	.674**	1	.846**	.550**	.500**
Total Aggression Score	.837**	.863**	.883**	.846**	1	.556**	.523**
GAD_7_Score	.345**	.473**	.537**	.550**	.556**	1	.777**
PHQ_9_Score	.371**	.435**	.489**	.500**	.523**	.777**	1

Note: ** at p>.000

A simple linear regression analysis was performed to assess predictive ability of anxiety and depression on aggression. The table 4 provides the *R* and *R*2 values. The *R* value represents the simple correlation and is 0.575, which indicates a fairly high degree of correlation. The *R*2 value indicates that 33% of the variance in aggression can be explained by anxiety and depression scores.

Table 4: Simple Linear Regression Analysis for assessment of Anxiety and Depression as Predictors for Aggression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.575[a]	.330	.327	.6545	.330	117.098	2	475	.000
a. Predictors: (Constant), GAD_7_Score, PHQ_9_Score									

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.626	.058		28.206	.000
	PHQ_9_Score	.031	.008	.230	3.849	.000
	GAD_7_Score	.058	.009	.378	6.324	.000
a. Dependent Variable: Total Aggress mean subscale score						

Discussion

This research was carried out to study the anxious depressive symptomology and aggression among female university students. Accordingly, 478 female undergraduate students participated in the health survey out of which 33.5% have been identified with clinically significant levels of depression, and 28.5% with clinically significant levels of depression. In terms of aggression, high level of physical aggression was reported by 38.3% of the sample; verbal 46.7%, anger 48.3% and high hostility levels was found in 48.5% of the sample. There were significant differences between a) with and without depression b) with and without anxiety groups in terms of aggression, where the clinical groups showed high mean values in all domains of aggression questionnaire.

Overall Significant positive correlations were observed between anxiety, depression and all forms of aggression. Results of our study supported our assumption that aggression would be linked with mental health variables such as anxiety and depression. Previous literature also suggests a relationship between aggression and increased likelihood of victimization, poorer social skills, and childhood

maltreatment (17). These findings corroborate the existing findings on relationship between mental health problems and aggression. For example according to a large scale cross sectional survey based on 2432 students, 163 (8.4%) subjects were identified as having anxiety. Aggressive behavior was found to be significantly associated with higher anxiety scores (18). Another additional finding was that both anxiety and depression contributed significantly towards aggressive tendencies among participants. This finding is also supported by previous studies which show that anxiety and depression may act as pacemakers for aggression (19, 20)

Conclusion and Recommendations

In a university context, students dealing with anxious depressive symptomatology may struggle with managing their emotions and interactions. These struggles might lead to conflicts with peers, challenges in academic settings, or difficulties in forming meaningful relationships. Our findings suggest a need towards an early intervention to address psychopathology which can eventually decrease and enable individuals to work on their anger management skills.

Addressing aggression among university students requires a multifaceted approach. Establishing support systems such as counseling services and mental health resources can aid in identifying and assisting students struggling with aggressive behaviors stemming from underlying issues. Implementing conflict resolution programs and fostering a culture of empathy and respect can mitigate conflicts and promote positive interactions among students.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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