Academic Stress and Its Variations by School Sector and Gender in Secondary Schools of Quetta

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Abstract

This quantitative study was conducted to examine the level of academic stress among students of public and private secondary schools in Quetta, Balochistan, and to compare differences by school sector and gender. The study was based on a positivist philosophy and a cross-sectional, comparative survey design, adopting the theoretical models of stress interaction and gender role theory as its basis. For this, 1,000 students were selected through stratified and systematic random sampling from the total population (208,531 students) of public (112) and private (575) secondary schools in Quetta, 500 from each sector, and 991 valid responses were obtained after excluding 9 incomplete cases. The data were collected using a reliable and validated Academic Stress Scale, with acceptable reliability (.720). The results revealed that students experienced medium academic stress (M = 3.13) overall, with exam-related stress being the highest and infrastructure-related stress the lowest. Although there was no significant difference in overall stress between students in public and private schools, students in both sectors experienced different types of stress in seven of eight sub-domains. Furthermore, gender-based stress revealed that boys were exposed to significantly more stress than girls in almost all domains, except for infrastructure-related stress, where girls scored higher. Thus, the study concludes that the relationship between academic stress and the school sector and gender is deeply dependent on the local socio-cultural context; therefore, a single policy is not sufficient for both sectors and students of both genders. It is therefore strongly recommended that schools urgently develop gender-specific psychosocial support systems and targeted intervention strategies by school sector to effectively and sustainably improve the psychological well-being of Quetta students.

Keywords*: Academic Stress, School Sectors, Gender, Secondary schools, Students, Quetta.*

Introduction

Academic stress is generally understood as a response to the demands and expectations of the educational environment that have become integral to students' daily academic lives (Reddy et al., 2018). Similarly, the research literature reveals that there are multiple sources of academic stress, which not only affect students' academic performance but also their overall psychological well-being. Furthermore, the nature of the educational institution, i.e., the public or private sector, significantly influences students' experiences, as the resources available, teaching standards, and competitive environment differ between the two sectors. In the same context, gender is also an important factor that influences the experience of academic stress, as boys and girls adopt different ways of facing and coping with stress. Thus, although there is extensive international research on the relationship among the school sector, gender, and academic stress, the findings have often been contradictory, and research on this topic in Pakistan, especially Balochistan, remains very limited. That is why the current study examines the overall level of academic stress among secondary school students in Quetta, provides a comparative assessment by school sector, and assesses gender differences in a single integrated study.

Furthermore, the importance of this study lies in its findings, which, understood as a response to the demands and expectations of the educational environment that have become integral to students' lives, may help teachers, parents, and education policymakers understand which sectors and genders are more vulnerable to academic stress, thereby enabling them to formulate targeted intervention strategies. For this reason, this study may also help fill the research gap at the local and national levels, especially in areas where such integrated comparative studies are rarely available. Particularly in the local context of Pakistan, and in Balochistan in particular, research examining academic stress across both school sectors and genders is limited. Although Wali et al. (2026) examined academic stress by school sector among Pakistani students and Ullah et al. (2023) showed gender-based differences in academic performance, there has been no attempt to examine these two dimensions (sector and gender) in a single integrated study. Thus, the scope of this study covers students in public and private secondary schools in Quetta, the overall level of academic stress, and gender and sector comparisons, adopting a quantitative and comparative analytical methodology. Ultimately, this study may not only further clarify the determinants of academic stress at a theoretical level but also provide important guidance towards improving students' psychological well-being in practice.

Research Objectives

1. To explore the level of academic stress among students in public and private secondary schools in Quetta.
2. To compare academic stress levels between public- and private-school students.
3. To determine the differences in academic stress levels by gender among students in secondary schools in Quetta.

Statement of the Problem

Secondary school students in Quetta face academic stress arising from examinations, curricular demands, and future decisions, which may negatively impact their academic performance and psychological well-being. However, it is unclear whether students in public and private schools, and boys and girls, are equally affected by this stress; hence the question of the current study: 'Academic stress and its variations by school sector and gender in secondary schools in Quetta.'

Conceptual Framework

The conceptual framework of the current study was based on the relationship between academic stress (the central variable) and its two comparison/grouping variables, school sector (public/private) and gender (boy/girl). According to this framework, the level of academic stress was first determined overall, then divided into groups by school sector and gender, and analyzed comparatively. Ultimately, this simple and clear framework integrates the three objectives of this study, i.e., determining the level of stress and conducting sectoral and gender comparisons, into a systematic visual structure.

Review of Related Literature

Blindheim et al. (2025) define academic stress as the response that arises in students in response to the demands and expectations of the academic environment. Reddy et al. (2018) mentioned in their study that academic stress has become a part of students' lives, arising from external and internal expectations imposed on them. As students move through diverse stages of life, they face changes and transformations; stress becomes an integral part of this journey. On this basis, Scott and Howard's (2017) theoretical model clarifies that stress is actually the result of the interaction between the environment and the individual. So, when the available resources for students are fewer than their demands, their stress levels increase (Bakker & Mostert, 2024; Sartika, 2024); in this circumstance, this stress is not just a temporary phenomenon; it is continuously present across different stages of students' academic lives.

Similarly, the literature further shows that this academic stress has long-term effects on students' academic performance and mental health (Benítez-Agudelo et al., 2025; Deng et al., 2022). Chronic academic stress harms students' overall psychological and mental well-being (Pérez-Jorge et al., 2025). Thus, academic stress has been identified as a significant risk factor for students' mental health (Córdova Olivera et al., 2023; Mofatteh, 2020). Additionally, Högberg (2024) mentioned that the intensity of academic stress may vary across educational levels and structures. Thus, secondary-level students, who are at the crossroads of exams and important future decisions, often experience greater stress (Ghatol, 2017; Pascoe et al., 2020). Nevertheless, when this stress exceeds a certain threshold, it begins to affect students' abilities negatively (Bakker & Mostert, 2024); it is therefore clear that the effects of academic stress are not limited to students' academic performance but also extend to their personality development.

Academic Stress Among Students of Public and Private Secondary Schools

The literature includes numerous studies comparing public and private school environments with respect to academic stress (such as Akeela & Ashok, 2018; Deb et al., 2014; Thenmozhi & Poornima, 2020; Wali et al., 2026). A study by Akeela and Ashok (2018), involving 144 students from both sectors, found that the school sector (public/private) was a significant factor in students' experience of academic stress. i.e., students in public schools showed more academic stress than students in private schools. However, some studies have reported the opposite: stress levels in private schools were higher than in public schools, and rates of test anxiety and fear among students in private schools were much higher than those among students in public schools (Thenmozhi & Poornima, 2020). Similar findings were reported by Subramani and Kadhiravan (2017); however, they further revealed that although students from private schools were more exposed to academic stress, their overall mental health was better than that of students from public schools. Therefore, this discrepancy indicates that the relationship between academic stress and school type is not consistent across regional and sampling contexts. In the same context, a quantitative correlational study by Wali et al. (2026) involving 400 students from public and private secondary schools in Pakistan examined the relationship between generalized anxiety and academic stress; the findings revealed a weak positive association with no significant difference in stress between public and private secondary schools.

However, Deb et al. (2014) found that students from private schools, compared to those from public schools, face more stringent academic expectations from parents, as families expect better results in return for compensating higher fees. As a result, these extra expectations create stress among students, who are constantly under pressure to demonstrate their academic performance and success. Conversely, students from both sectors face different experiences due to differing educational systems and values. Furthermore, the breadth of the curriculum and fast-paced teaching style in private schools may also contribute to increased stress, as highlighted by Leek et al. (2026). In the same context, Hussain and Afzal (2023) reported that public school students experience other factors, such as a lack of resources, although they are in a less competitive environment. For this reason, it is important to consider the stress experiences of students in both sectors as separate contexts.

Academic Stress and Gender

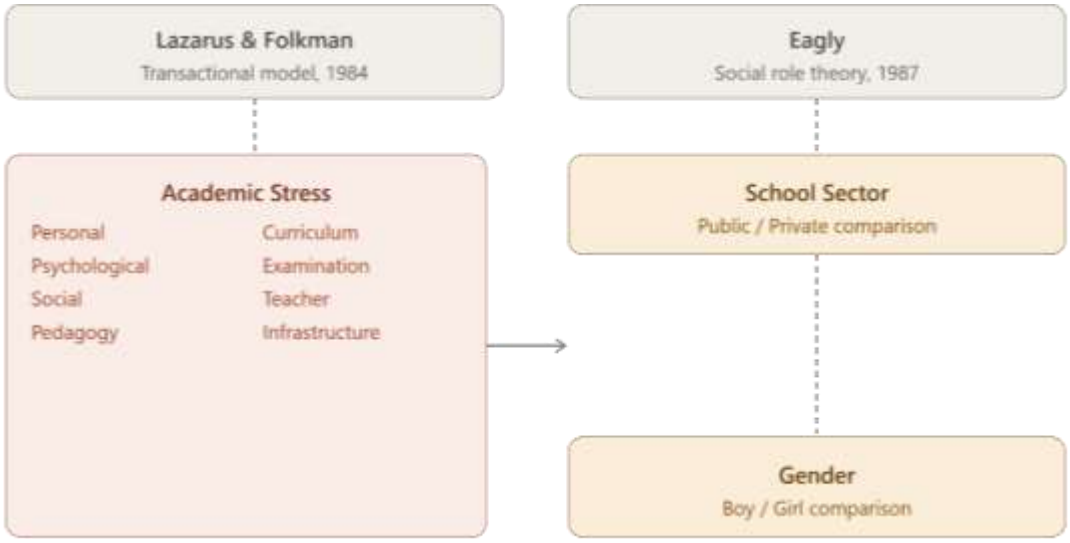
A study of 1,426 students in Belagavi district, India, found that boys reported significantly higher levels of academic stress, grade-related anxiety, and self-expectations than girls. However, girls were more likely to be affected by overall stress ratings (Haritay et al., 2025). Similarly, Ma et al. (2024) found significant differences between boys and girls in both stressful events and stress symptoms in a study of 4,995 Chinese secondary school students. Furthermore, García-Moya et al. (2025) showed in a mixed-methods study of 4,768 adolescent students that girls consistently reported higher levels of school-related stress, and that this difference was not explained by academic demands or homework time, but rather by gender expectations and different teacher attitudes. In the same context, del Pino and Matud (2024) found a slight difference in mental

symptoms between boys and girls. However, the difference was not statistically significant, suggesting that educational level may be a more important factor than gender. Similarly, a recent study of 600 students found that boys had a slightly higher, statistically significant mean academic stress score (63.27) than girls (61.32) (Yadav, 2025). Similarly, Wali et al. (2026) conducted a study of 400 students in Pakistan and found no significant gender differences in academic stress between public and private school students. This conflicting international and local evidence indicates that the relationship between gender-based academic stress may vary significantly across cultural and regional contexts, necessitating a detailed examination of this relationship in the local context of Quetta.

Theoretical Framework

The current research is primarily based on Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, which holds that academic stress is a mental, evaluative process shaped by the interaction between the individual and his or her environment (including school resources). Similarly, in light of this theory, it has been hypothesized that differences in the resources and environments available in public and private schools affect students' initial and secondary evaluation processes differently, thereby providing a theoretical explanation for sector-based differences in stress. Furthermore, Eagly's (1987) Social Role Theory has also been included as a theoretical basis for understanding gender differences, according to which socially assigned gender roles shape the experience and expression of stress differently in boys and girls. Figure 1 presents academic stress across its eight sub-dimensions (personal, psychological, social, pedagogical, curricular, examination, teacher-related, and school infrastructure), rather than a single variable, thereby accurately reflecting the original analytical structure of the current research. Finally, by combining these two theories, the current research posits that the level of academic stress and its eight sources may differ significantly by both school sector and gender, thereby providing a strong and detailed theoretical basis for the three objectives of the current study.

Figure 1
Theoretical Framework



Research Methodology

The current study is based on a quantitative, cross-sectional, comparative survey design, which is considered appropriate for examining academic stress across school sectors and genders. However, it is based solely on the positivist philosophy, in which academic stress is measured objectively and quantitatively. The population of the current study comprised all students from public and private secondary schools in Quetta, including both sexes (boys and girls) to enable gender comparisons. A sample of 500 students was selected in equal numbers from public and private schools through stratified and systematic random sampling, for a total of 1,000 students. However, the total number of students studying in these 112 public and 575 private schools was 208,531 (EMIS, Government of Balochistan. (2024), based on which the sample size was justified according to the criteria of Yamane (1967). Thus, the final sample size was 991 out of 1000, after 9 students were excluded for incomplete data, which was much higher than the minimum sample size recommended by Yamane (1967).

Since the sample was obtained from each school's available list through systematic random sampling, the unbalanced grade distribution reflects the actual enrollment of students in the selected schools rather than sampling bias. However, grade was included in the analysis as an additional covariate to control for this potential effect. Table 1 below presents the demographic characteristics of students, including gender, age, and grade level.

Table 1
Demographic Characteristics

Level		Public	Private
Gender	Female	250	300
	Male	250	191
Age	13 y (13y 1m – 13y 11m)	0	0
	14 y (14y 1m – 14y 11m)	8	7
	15 y (15y 1m – 15y 11m)	148	134
	16 y (16y 1m – 16y 11m)	280	276
	17 y (17y 1m – 17y 11m)	64	74
Grade Level	9^{th} Grade	381	108
	10^{th} Grade	119	383

(y = years, m = months)

The Academic Stress Scale, adopted from Rao's (2012) study, was used to measure academic stress and consists of 49 items across eight subdomains (personal, psychological, social, teaching, curricular, examination, teacher-related, and school infrastructure). However, the internal consistency of this scale was assessed using Cronbach's Alpha (.720), which was acceptable according to Taber (2018). However, the data were collected through a survey distributed in the classroom under the supervision of teachers and the researcher. After obtaining formal permission from the schools and informed consent from the students, the students completed the questionnaires in approximately 20 minutes. Thus, the data were analyzed using the statistical software, Statistical Package for the Social Sciences (SPSS).

Ethical Considerations

Formal permission and consent were obtained. Since the participants were secondary school students and often minors, assent from the students and written consent from their parents or guardians were mandatory. Similarly, the identity of the participants was kept completely confidential; students' names were not recorded on the questionnaire; participation was completely voluntary; and the right to withdraw without consequence was provided.

Findings

Research Objective 1: To explore the level of academic stress among students in public and private secondary schools in Quetta

Table 2 reports the descriptive statistics of different sources of academic stress among students of public and private secondary schools in Quetta. The overall academic stress among students was medium (M = 3.13, SD = 0.33), with examination stress being the highest (M = 3.59, SD = 0.90) and school infrastructure stress the lowest (M = 2.73, SD = 1.07). Similarly, among personal stress (M = 3.04, SD = 0.45), "mental fatigue" was the most prominent (M = 3.41, SD = 1.14), while "anxiety" was the least influential (M = 2.57, SD = 0.95). Furthermore, among psychological stress (M = 2.92, SD = 0.58), "exam–related stress" was the most prominent (M = 3.54, SD = 1.39), while "bitter argument" was the least influential (M = 2.40, SD = 1.36). In the same context, "desire for solitude" was found to be the highest (M = 3.69, SD = 1.47) and "racial humiliation" the lowest (M = 2.66, SD = 1.05) in social stress (M = 3.11, SD = 0.64). Thus, "more homework" was found to be the most prominent (M = 3.88, SD = 1.01) in pedagogy-related stress (M = 3.30, SD = 0.57), while "longer curriculum" was found to be the most influential (M = 3.91, SD = 1.28) in curriculum-related stress (M = 3.51, SD = 0.75). Also, among teacher-related stressors (M = 2.83, SD = 0.82), "humiliation of weak students" was the most prominent (M = 3.17, SD = 1.40), and "unrealistic expectations" was the least prominent (M = 2.44, SD = 1.19). Moreover, among school infrastructure-related stress (M = 2.73, SD = 1.07), "crowded classes" was reported the most (M = 2.95, SD = 1.60), while "lack of facilities such as fans" was found to be the least influential (M = 2.63, SD = 1.33).

Table 2
Descriptive Statistics of Academic Stress

	Personal	Never	Rarely	Sometimes	Often	Always	M	SD
1	I am mentally tired	69 (7%)	73 (7.4%)	483 (48.7%)	119 (12%)	247 (24.9%)	3.41	1.143
2	I am physically tired.	79 (8%)	52 (5.2%)	443 (44.7%)	404 (40.8%)	13 (1.3%)	3.22	.885
3	I am restless	136 (13.7%)	307 (31%)	421 (42.5%)	98 (9.9%)	29 (2.9%)	2.57	.945
4	I spent a sleepless night.	211 (21.3%)	257 (25.9%)	283 (28.6%)	199 (20.1%)	41 (4.1%)	2.60	1.148
5	I suffer from headaches.	118 (11.9%)	65 (6.6%)	459 (46.3%)	225 (22.7%)	124 (12.5%)	3.17	1.114
6	I have problems related to indigestion.	87 (8.8%)	128 (12.9%)	332 (33.5%)	261 (26.3%)	183 (18.5%)	3.33	1.173
7	My heartbeat increases when I am confronted with a problem.	48 (4.8%)	153 (15.4%)	320 (32.3%)	292 (29.5%)	178 (18%)	3.40	1.096
8	I feel I am not in good health.	107 (10.8%)	292 (29.5%)	421 (42.5%)	131 (13.2%)	40 (4.0%)	2.70	.966
9	Anxiety suppresses me when I am assigned any work.	78 (7.9%)	228 (23%)	297 (30%)	242 (24.4%)	146 (14.7%)	3.15	1.165
10	I am badly in need of a holiday.	194 (19.6%)	164 (16.5%)	341 (34.4%)	166 (16.8%)	126 (12.7%)	2.86	1.268
	Total	*1127 (11.37%)*	*1719 (17.34%)*	*3800 (38.34%)*	*2138 (21.57%)*	*1127 (11.37%)*	*3.042*	*.453*
	Psychological							
11	I lack self-confidence	216 (21.8%)	83 (8.4%)	389 (39.3%)	129 (13%)	174 (17.6%)	2.96	1.337
12	I lack self-efficacy	126 (12.7%)	109 (11%)	487 (49.1%)	144 (14.5%)	125 (12.6%)	3.03	1.126
13	I lack motivation	188 (19%)	235 (23.7%)	388 (39.2%)	104 (10.5%)	76 (7.7%)	2.64	1.132
14	I am worried when I have an examination.	118 (11.9%)	153 (15.4%)	124 (12.5%)	270 (27.2%)	326 (32.9%)	3.54	1.390
15	I had a heated argument with a teacher friend's sibling.	369 (37.2%)	183 (18.5%)	212 (21.4%)	129 (13%)	98 (9.9%)	2.40	1.356
	Total	*1017 (20.52%)*	*763 (15.4%)*	*1600 (32.29%)*	*776 (15.66%)*	*799 (16.13%)*	*2.916*	*.579*
	Social							
16	I like to stay alone.	168 (17%)	38 (3.8%)	154 (15.5%)	208 (21%)	423 (42.7%)	3.69	1.471

17	I am not comfortable in the group.	192 (19.4%)	47 (4.7%)	359 (36.2%)	64 (6.5%)	329 (33.2%)	3.29	1.460
18	I am often humiliated for my ethnicity	160 (16.1%)	238 (24%)	413 (41.7%)	135 (13.6%)	45 (4.5%)	2.66	1.045
19	My classmates make fun of my accent.	191 (19.3%)	232 (23.4%)	241 (24.3%)	199 (20.1%)	128 (12.9%)	2.84	1.303
20	I lack social contacts	214 (21.6%)	112 (11.3%)	291 (29.4%)	156 (15.7%)	218 (22%)	3.05	1.419
	Total	*925 (18.67%)*	*667 (13.46%)*	*1458 (29.42%)*	*762 (15.38%)*	*1143 (23.07%)*	*3.107*	*.644*
	Pedagogy							
21	I cannot understand the subjects because my teachers teach me through the traditional method (board and marker)	255 (25.7%)	23 (2.3%)	245 (24.7%)	305 (30.8%)	163 (16.4%)	3.10	1.418
22	I have a fear of punishment.	193 (19.5%)	196 (19.8%)	257 (25.9%)	258 (26%)	87 (8.8%)	2.85	1.252
23	I am given a lot of homework daily.	23 (2.3%)	94 (9.5%)	148 (14.9%)	438 (44.2%)	288 (29.1%)	3.88	1.008
24	I have difficulty with the medium of instruction.	312 (31.5%)	79 (8%)	357 (36%)	57 (5.8%)	186 (18.8%)	2.72	1.440
25	I have continuous classes.	132 (13.3%)	114 (11.5%)	103 (10.4%)	135 (13.6%)	507 (51.2%)	3.78	1.492
26	I have to memorize the units of all subjects daily.	156 (15.7%)	165 (16.6%)	79 (8%)	214 (21.6%)	377 (38%)	3.50	1.513
	Total	*1071 (18.01%)*	*671 (11.28%)*	*1189 (20%)*	*1407 (23.66%)*	*1608 (27.04%)*	*3.304*	*.568*
	Curriculum							
27	The course content are very lengthy	100 (10.1%)	33 (3.3%)	166 (16.8%)	254 (25.6%)	438 (44.2%)	3.91	1.282
28	The language used in the curriculum is very difficult.	36 (3.6%)	125 (12.6%)	158 (15.9%)	493 (49.7%)	179 (18.1%)	3.66	1.028
29	I am unable to catch up if I get behind at work.	34 (3.4%)	218 (22%)	387 (39.1%)	168 (17%)	184 (18.6%)	3.25	1.099
30	The curriculum is mostly not updated	37 (3.7%)	195 (19.7%)	388 (39.2%)	271 (27.3%)	100 (10.1%)	3.20	.991
	Total	*207 (5.22%)*	*571 (14.4%)*	*1099 (27.72%)*	*1186 (29.92%)*	*901 (22.73%)*	*3.505*	*.748*
	Examination							
31	The exam questions are usually very difficult.	128 (12.9%)	95 (9.6%)	274 (27.6%)	207 (20.9%)	287 (29%)	3.43	1.339

32	Papers are long, and the examination time is too short to complete the answers	99 (10%)	110 (11.1%)	241 (24.3%)	143 (14.4%)	398 (40.2%)	3.64	1.363
33	The examination duration is very stressful for me.	50 (5%)	172 (17.4%)	100 (10.1%)	286 (28.9%)	383 (38.6%)	3.79	1.262
34	I feel very sleepy during exam days.	203 (20.5%)	61 (6.2%)	157 (15.8%)	242 (24.4%)	328 (33.1%)	3.43	1.504
35	I remain awake during the exam period	124 (12.5%)	54 (5.4%)	286 (28.9%)	137 (13.8%)	390 (39.4%)	3.62	1.373
36	I fear failing in board exams.	108 (10.9%)	145 (14.6%)	192 (19.4%)	132 (13.3%)	414 (41.8%)	3.60	1.422
37	I am scared of terminal examinations.	84 (8.5%)	128 (12.9%)	188 (19%)	198 (20%)	393 (39.7%)	3.69	1.332
38	I am afraid of getting low grades	146 (14.7%)	55 (5.5%)	199 (20.1%)	129 (13%)	462 (46.6%)	3.71	1.461
39	The course is huge for the examination.	144 (14.5%)	55 (5.5%)	375 (37.8%)	109 (11%)	308 (31.1%)	3.39	1.358
	Total	*1086 (12.31%)*	*875 (9.92%)*	*2012 (22.81%)*	*1583 (17.95%)*	*3265 (37.01%)*	*3.590*	*.895*
	Teacher							
40	Teachers are not highly qualified.	325 (32.8%)	57 (5.8%)	310 (31.3%)	117 (11.8%)	182 (18.4%)	2.77	1.474
41	Teachers are not professionally qualified.	211 (21.3%)	207 (20.9%)	335 (33.8%)	123 (12.4%)	115 (11.6%)	2.72	1.254
42	Teachers do not do curricular counseling.	199 (20.1%)	114 (11.5%)	259 (26.1%)	265 (26.7%)	154 (15.5%)	3.06	1.344
43	Teachers humiliate the low-grade students.	182 (18.4%)	131 (13.2%)	231 (23.3%)	227 (22.9%)	220 (22.2%)	3.17	1.398
44	Teachers have unrealistic expectations about me.	255 (25.7%)	303 (30.6%)	249 (25.1%)	114 (11.5%)	70 (7.1%)	2.44	1.190
	Total	*1172 (23.69%)*	*812 (16.41%)*	*1376 (27.81%)*	*846 (17.1%)*	*741 (14.98%)*	*2.831*	*.822*
	School Infrastructure							
45	There is no playground in the school.	351 (35.4%)	207 (20.9%)	90 (9.1%)	111 (11.2%)	232 (23.4%)	2.66	1.601
46	The classrooms have no facilities, such as a fan.	295 (29.8%)	162 (16.3%)	236 (23.8%)	212 (21.4%)	86 (8.7%)	2.63	1.334
47	The class strength is huge, but the classroom is small.	265 (26.7%)	189 (19.1%)	180 (18.2%)	49 (4.9%)	308 (31.1%)	2.95	1.598
48	The canteen is not available.	411 (41.5%)	123 (12.4%)	60 (6.1%)	123 (12.4%)	274 (27.6%)	2.72	1.715

49	The labs are not fully equipped.	417 (42.1%)	52 (5.2%)	150 (15.1%)	175 (17.7%)	197 (19.9%)	2.68	1.615
	Total	*1739 (35.1%)*	*733 (14.79%)*	*716 (14.45%)*	*670 (13.52%)*	*1097 (22.14%)*	*2.728*	*1.070*
	Overall Academic Stress	8344 (17.22%)	6811 (14.06%)	13250 (27.35%)	9368 (19.33%)	10681 (22.04%)	3.128	.33179

Research Objective 2: To compare academic stress levels between public- and private-school students.

Research Hypothesis 1 (H_1): The level of academic stress among public school students differs significantly from that among private school students.

Null Hypothesis 1 (H_01): The level of academic stress among public school students does not differ significantly from that among private school students.

Table 3 reports the results of the independent-samples t-test for academic stress levels among public and private school students. Statistical analysis revealed that there were significant differences ($p < .05$) between students of public and private schools in terms of personal stress (t(989) = -3.607, d = -0.23), social stress (t(958.62) = 5.184, d = 0.33), pedagogy-related stress (t(978.68) = 6.050, d = 0.38), curriculum-related stress (t(989) = -3.794, d = -0.24), exam-related stress (t(901.81) = 3.864, $p < .001$, d = 0.25), teacher-related stress (t(977.11) = -7.173, d = -0.46), and infrastructure-related stress (t(909.45) = -6.391, d = -0.41). However, no significant difference was found between the two groups in psychological stress (t(989) = -1.417, $p = .157$). Thus, in terms of effect size (Cohen's d), medium effects were observed for teacher- and infrastructure-related stress, while small effects were observed in the remaining significant domains. As a final point, no significant difference was found between public and private schools in overall academic stress (t(928.155) = -1.563, $p = .118$).

Table 3
Independent Samples t-test: Academic Stress Among Public and Private School Students

						Std. Error	95% Conf. Interval	
		t	df	Sig. (2-tailed)	Mean Diff	Diff	Lower	Upper
Personal	Equal variances assumed	-3.607	989	.000	-1.03297	.28638	-1.59495	-.47100
Psychological	Equal variances not assumed	-1.419	982.471	.156	-.26083	.18387	-.62166	.10000
Social	Equal variances not assumed	5.184	958.618	.000	1.04585	.20174	.64994	1.44177

Pedagogy	Equal variances not assumed	6.050	978.679	.000	1.28681	.21269	.86942	1.70420
Curriculum	Equal variances assumed	-3.794	989	.000	-.71689	.18895	-1.08768	-.34610
Examination	Equal variances not assumed	3.864	901.813	.000	1.95821	.50677	.96362	2.95280
Teacher	Equal variances not assumed	-7.173	977.106	.000	-1.82554	.25449	-2.32495	-1.32613
Infrastructure	Equal variances not assumed	-6.391	909.449	.000	-2.12483	.33245	-2.77729	-1.47237
Overall Academic Stress	Equal variances not assumed	-1.563	928.155	.118	-1.67020	1.06840	-3.76696	.42657

Research Objective 3: To determine the differences in academic stress levels by gender among students in secondary schools in Quetta.

Research Hypothesis 2 (H_2): There are significant differences in academic stress levels by gender among students in secondary schools in Quetta.

Null Hypothesis 2 (H_02): There are no significant differences in academic stress levels by gender among students in secondary schools in Quetta.

In Table 4, gender-based analysis through an independent-samples t-test revealed that boys' mean psychological stress (M = 3.10) was significantly higher than girls' (M = 2.77) (t(979.09) = 9.71, $p < .001$, d = .60), indicating a medium effect. Similarly, boys also scored significantly higher on pedagogy-related stress (t(839.35) = 7.89, $p < .001$, d = .52) and teacher-related stress (t(949.56) = 9.06, $p < .001$, d = .55). Furthermore, boys' mean (M = 3.20) was also significantly higher than girls' (M = 3.07) in overall academic stress (t(988.999) = 6.19, $p < .001$, d = .39). At the same time, boys' scores were also higher in social (d = .13), curriculum-related (d = .18), and exam-related stress (d = .36) but with weak to small effects. In contrast, girls' mean (M = 2.99) was significantly higher than boys' (M = 2.40) in infrastructure-related stress (t(917.01) = -8.81, $p < .001$, d = -.57). However, no significant difference was found between the two groups in personal stress (t(969.72) = .26, $p = .792$).

Table 4
Independent Samples t-test: Gender and Academic Stress

	Gender	N (M, SD)		t	df	Sig.	M. Diff	Std. Err	95% Conf. Interval		Cohen's d	Lower	Upper
									Lower	Upper			
PS	Boys	(M = 3.05, SD = .359)	EVNA	.263	969.72	.792	.00735	.0279	-.0474	.0621	.016	-.109	.141
	Girls	(M = 3.04, SD = .517)											
Psy.S	Boys	(M = 3.10, SD = .453)	EVNA	9.707	979.09	.000	.33313	.0343	.2658	.4005	.599	.471	.727
	Girls	(M = 2.77, SD = .626)											
SS	Boys	(M = 3.15, SD = .567)	EVNA	2.087	988.84	.037	.08392	.0402	.0050	.1628	.130	.005	.256
	Girls	(M = 3.07, SD = .699)											
PS	Boys	(M = 3.46, SD = .612)	EVNA	7.893	839.34	.000	.28433	.0360	.2136	.3550	.516	.389	.643
	Girls	(M = 3.18, SD = .496)											
CRS	Boys	(M = 3.58, SD = .593)	EVNA	2.840	971.71	.005	.13039	.0459	.0403	.2205	.175	.049	.300
	Girls	(M = 3.45, SD = .849)											
ERS	Boys	(M = 3.76, SD = .883)	EVA	5.560	989	.000	.31342	.0564	.2028	.4240	.355	.229	.482
	Girls	(M = 3.45, SD = .881)											
TRS	Boys	(M = 3.08, SD = .597)	EVNA	9.063	949.55	.000	.43919	.0485	.3441	.5343	.554	.426	.681
	Girls	(M = 2.64, SD = .921)											
IRS	Boys	(M = 2.40, SD = 1.06)	EVNA	-8.805	917.01	.000	-.58392	.0663	-.7141	-.4538	-.567	-.694	-.439
	Girls	(M = 2.99, SD = 1.00)											
AS	Boys	(M = 3.20, SD = .285)	EVNA	6.193	988.99	.000	.12598	.0203	.0861	.1659	.386	.260	.513
	Girls	(M = 3.07, SD = .356)											

AS = Academic Stress: PS = Personal Stress: Psy.S = Psychological Stress: SS = Social Stress: Ped.S = Pedagogical Stress: CRS = Curriculum-related Stress: ERS = Exam-Related Stress" TRS = Teacher-Related Stress: IRS = Infrastructure-Related Stress: EVNA = Equal variances not assumed; EVA = Equal variances assumed

Discussion and Conclusion

Discussion

The results of the current study revealed that students in public and private secondary schools in Quetta experienced a medium level of overall academic stress, indicating that stress has not reached a severe crisis level but remains a significant part of students' daily academic lives. This

result is consistent with Reddy et al.'s (2018) study, which found that academic stress is an integral and continuous part of students' lives, manifesting at varying intensities across stages. Furthermore, the highest mean score of exam-related stress confirms that exams and their associated fear were the most prominent source of stress among students, which is also consistent with the findings of Bedewy and Gabriel (2015) and Reddy et al. (2018), who also stated that exam-related stress is the most severe source. In the same context, Xiang et al. (2019) showed that exam-related stress has profound, long-lasting effects on students' psychological well-being. Thus, the lowest mean score for school infrastructure stress indicated that the lack of physical facilities was a relatively less severe problem in the selected schools in Quetta, which is possibly contrary to the claim of Ghimire and Koirala (2020) that lack of resources, especially in public schools, is a major cause of stress.

By the same token, the relatively high mean score for curriculum-related stress (M = 3.51) is also consistent with the findings of Bedewy and Gabriel (2015), who identified heavy and complex curriculum as a major trigger of stress. Similarly, this result is also consistent with the meta-analysis by Kubicek et al. (2023), which showed that although academic demands can be helpful in learning, excessive curricular load significantly increases stress among students. Moreover, Eduwem and Ezeonwumelu (2020) identified a heavy and redundant curriculum in their study as a significant factor negatively affecting students' daily academic activities and learning effectiveness, further confirming the findings of the current study.

In addition, the finding that homework-related stress and anxiety are the most prevalent factors in academic stress confirms that teaching strategies may place an additional burden on students, which supports the existing literature on academic stress. A recent study by Gao (2023) showed that excessive homework, high expectations from teachers and parents, and poor academic performance combined to increase both academic stress and anxiety in adolescent students. Furthermore, the relatively low mean score for teacher-related stress suggests that Quetta students perceive their teachers' behavior as less stressful than other sources, which may reflect the positive nature of local teacher-student relationships. Overall, these results confirm that academic stress is a multifaceted phenomenon, with exams and curriculum having the greatest impact and infrastructure and teacher-related factors having relatively lesser impact, which also supports the claim of Deng et al. (2022) that different sources of stress affect students to different degrees. Ultimately, these findings reflect the local educational context of Quetta, where the examination system and the nature of the curriculum emerge as the biggest causes of students' academic stress.

Comparison of Academic Stress in Students of Public and Private Schools

The findings of the current study revealed that there was no significant difference in the level of overall academic stress between students of public and private schools, which is fully consistent with the findings of a study conducted in the Pakistani context by Wali et al. (2026), in which no significant difference in academic stress was found between students of public and private schools. However, interestingly, this result is contrary to the claim of Thenmozhi and Poornima (2020) and Deb et al. (2014) that the overall stress of private school students is higher than that of public

school students. Similarly, this result is contrary to the claim by Akeela and Ashok (2018) that students in public schools experience more stress than those in private schools. This discrepancy therefore indicates that the relationship between academic stress and the school sector is not uniform across regional and cultural contexts, and that local factors may modify its nature.

Furthermore, although no differences were found at the overall level, significant differences emerged in seven of the eight subdomains, indicating that overall academic stress scores may mask differences in different directions. In the same context, social, academic, and examination stress were significantly higher among students in private schools in the current study. This supports the claim of Kubicek et al. (2023) that competitive academic environments and heavy teaching demands increase stress, and such environments are generally more prevalent in private schools. In contrast, personal, curricular, teacher-related, and infrastructure stress were significantly higher among students in public schools, consistent with Ghimire and Koirala (2020)'s claim that a lack of resources and weak institutional standards in public schools are major causes of stress. In the same vein, a study conducted in Pakistan by Hussain and Afzal (2023) showed that the lack of physical facilities and educational resources in public schools directly and negatively affects the quality of students' education. This indicates an interconnected problem in which limited resources and weak institutional systems combine to affect students' educational lives on multiple fronts.

Additionally, the higher rate of teacher-related stress in public schools may be linked to inadequate training or insufficient resources. In contrast, Akeela and Ashok's (2018) findings differed, indicating that the nature of teacher-related stress may vary across local education systems. Moreover, the lack of significant differences in psychological stress between students in both sectors suggests that internal psychological states, such as low self-esteem or anxiety, may be influenced less by the nature of the school and more by individual and family factors. Similarly, this result is also consistent with Flores-Builes and Andrés-Roqueta's (2023) study, which showed that students' academic stress is largely determined by individual factors (such as self-esteem, social skills) and family supportive factors (such as parental support), and not simply by the nature of the educational institution. Thus, the findings from the current study and the literature confirm that the structural weaknesses of the public education system in Pakistan and its adjacent regions give rise to multiple sources of stress that are not limited to a single sector but shape the overall educational experience of students. Collectively, these findings confirm that while the overall academic stress among students in public and private schools is similar, there are significant differences in the sources and nature of this stress, indicating that students in both sectors face distinct challenges. However, their overall impact is of similar magnitude.

Gender Differences: Academic Stress

The current study's findings revealed that boys showed significantly greater academic stress than girls across almost all subdomains (except infrastructure-related stress). These findings are consistent with Haritay et al.'s (2025) study, which surveyed 1,426 students from the Belagavi district, India, and found that boys showed significantly higher levels of academic stress, grade-related anxiety, and self-expectations than girls. However, this result is at odds with the broader

international trend, in which girls generally report higher levels of school-related stress, as highlighted in García-Moya et al.'s (2025) study of 4,768 adolescent students. In this context, the discrepancy indicates that the nature of gender differences in academic stress may vary significantly across local socio-cultural contexts, and the Quetta context shows a different trend from Western studies. In addition, a study conducted in the Pakistani context by Ullah et al. (2023) showed that girls significantly outperformed boys in academic performance in the urban examination boards of Khyber Pakhtunkhwa and Punjab. This supports the current study's conclusion that, in the Pakistani socio-cultural context, girls achieve better academic outcomes, even when they experience less stress.

Similarly, boys' higher scores in psychological and teacher-related stress (Cohen's d = .599 and .554, respectively) indicate that gender significantly influences the intensity of academic stress experienced. Correspondingly, Ma et al.'s (2024) study demonstrated gender differences in both stressful events and symptoms among Chinese secondary school students, indicating that gender shapes academic stress in distinct ways. Furthermore, the higher score for girls only on infrastructure-related stress (M = 2.99 vs. M = 2.40) is an interesting exception that may indicate the relatively poor physical facilities faced by girls' schools in the local context of Quetta. Ultimately, these findings confirm that while boys in Quetta face greater academic stress across most mediums, girls are more affected in specific areas such as infrastructure, highlighting the need for gender-specific intervention strategies.

Conclusion

The present study found that students in public and private secondary schools in Quetta experience moderate levels of academic stress overall, with examination and curricular stress being the highest. In contrast, school infrastructure and teacher-related stress had relatively low impact. Similarly, no significant difference was found between students in public and private schools in overall academic stress; however, in seven of eight sub-domains, students from both sectors reported different experiences. Furthermore, on a gender basis, it was found that boys face significantly more academic stress than girls in almost all sub-domains, except for infrastructure stress, where girls scored higher. Thus, these discrepancies indicate that the relationship between academic stress and school sector and gender is not uniform but varies across sub-domains, requiring future research that directly examines cultural and contextual factors, rather than claiming a definitive cultural explanation based on the current findings. Ultimately, this research provides strong evidence that to improve students' psychological well-being, it is essential to understand academic stress in the context of its specific sources, school sector, and gender, rather than as a uniform concept, and to design targeted strategies accordingly.

Recommendations

Initially, the study recommends that since boys are more exposed to psychological and teacher-related stress, supporting programs, like gender-specific counseling and psychological support, should be introduced in all schools. Meanwhile, education policymakers should formulate separate, appropriate intervention strategies by school sector. However, future studies should

integrate qualitative or mixed methods and longitudinal designs to better understand the sources of academic stress and how they change over time.

Limitations

The current study was limited to secondary schools in Quetta, Balochistan. It uses a quantitative cross-sectional research design, which limits the study's generalizability and its ability to determine cause-and-effect relationships. Furthermore, the study has several important limitations: potential bias from the use of a self-report questionnaire, an unbalanced distribution of gender and grade (9th/10th), particularly across school sectors, and potential school-level clustering that could affect the independence of the results.

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