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Khafifatu Syahraini*✉, Nurhayati✉, and Khusnul Fatimah✉

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Research Article

How Do Assignment Workload and Time Management Relate to Academic Stress in Early Adolescence?

Khafifatu Syahraini*, Nurhayati, and Khusnul Fatimah

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Abstract

Academic stress can undermine adolescents' well-being during the transition to lower secondary education, particularly when assignment demands accumulate within limited completion windows. This cross-sectional correlational study examined the relationships of perceived assignment workload and time management with academic stress among 127 Grade VII students at a public lower secondary school in Kolaka, Indonesia. Data were collected using five-point Likert-scale questionnaires and analyzed through descriptive statistics, Pearson correlations, and multiple linear regression. Assignment workload was positively associated with academic stress ($r = 0.363$, $p < 0.001$, 95% CI [0.202, 0.505]). Time management was not significantly associated with stress ($r = 0.136$, $p = 0.127$, 95% CI [-0.039, 0.303]). Jointly, the predictors explained 13.2% of the variance in academic stress, $F(2,124) = 9.454$, $p < 0.001$. In the regression model, workload was a significant predictor ($B = 0.387$, $p < 0.001$), whereas time management was not ($B = -0.027$, $p = 0.758$). The findings position assessment coordination and manageable assignment design as human-centered educational priorities. Time-management support remains valuable, but it should complement rather than substitute institutional responsibility for preventing avoidable academic overload.

Keywords: Academic Stress; Assignment Workload; Cognitive Ergonomics; Early Adolescence; Lower Secondary Education; Time Management.

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INTRODUCTION

The transition into lower secondary education is a demanding developmental period. Students encounter a broader curriculum, multiple subject teachers, higher expectations for independent work, and new peer and school routines. When the perceived demands of this transition exceed students' available coping resources, academic stress may emerge as emotional strain, fatigue, concentration difficulty, or avoidance of schoolwork [1], [2], [3]. Academic stress is therefore not merely an individual concern; it is also a learning-environment and student-support issue with consequences for participation, well-being, and equitable educational opportunity.

Measurement research distinguishes academic stress from a simple count of school tasks. Stress is shaped by how learners appraise demands, available time, control, and their capacity to cope [4], [5], [6], [7]. This perspective is particularly relevant for early adolescents, who are still consolidating self-regulatory capabilities while adapting to the organizational complexity of public lower secondary schooling. A human-centered account of schoolwork consequently requires attention to both the design of assignment systems and the competencies students use to navigate them.

Assignments can reinforce practice, consolidate understanding, and cultivate responsibility when they are purposeful, differentiated, and feasible. Yet their educational value is sensitive to quantity, difficulty, timing, and coordination across subjects. Evidence on homework indicates that excessive volume and poorly synchronized deadlines may impair motivation and well-being, while appropriately designed and manageable work can support learning [8], [9], [10]. Workload is thus best understood as students' perceived cognitive and temporal burden, rather than as the mere presence of homework.

Time management is commonly proposed as a protective resource because planning, prioritization, and timely task completion can help students organize limited study time [11], [12], [13], [14]. Meta-analytic evidence nevertheless suggests that time-management effects are context dependent and often operate through perceived control, self-regulation, and the broader structure of demands [15], [16], [17]. Interventions can improve planning behavior and perceived control, but they cannot fully neutralize stress produced by uncoordinated or excessive task systems [18], [19].

Procrastination further complicates this relationship. Students who delay academic tasks may experience short-term relief but often face heightened deadline pressure, lower performance, and increased stress when work accumulates [20], [21], [22], [23]. At the same time, self-regulated learning research shows that planning is embedded in broader motivational, emotional, and contextual processes rather than functioning as a stand-alone skill [24], [25], [26], [27], [28]. A null association between time management and academic stress, therefore, may reveal an important contextual limit rather than the irrelevance of organizational skills.

Most studies on workload, time management, and stress have concentrated on university populations or have treated assignment management primarily as an individual student responsibility. Less is known about these relationships during the early-adolescent transition to public lower secondary school in Indonesia, where assignment practices, access to home learning resources, and support systems may vary substantially. This study addresses that gap by examining perceived assignment workload, time management, and academic stress among Grade VII students at SMP Negeri 2 Kolaka (hereafter, a public lower secondary

school). Its contribution is to frame assignment workload as a cognitive-ergonomic and psychosocial feature of the learning environment, not solely as a student-level deficit. The study asks: (1) Is perceived assignment workload associated with academic stress? (2) Is time management associated with academic stress? and (3) What are the unique and combined contributions of workload and time management to academic stress?

METHODS

Research Design and Setting

This study used a quantitative, cross-sectional correlational design. The design was selected to estimate associations among perceived assignment workload, time management, and academic stress at one point in time, without making causal claims. The study was conducted at SMP Negeri 2 Kolaka, an Indonesian public lower secondary school. In this manuscript, the term public lower secondary school is used as the internationally intelligible equivalent of Sekolah Menengah Pertama Negeri.

Participants and Sampling

The population comprised 223 Grade VII students distributed across four classes. Using the Slovin formula with a 6% margin of error, the study selected 127 students through proportional sampling across the four classes. The analytic sample therefore represents 56.95% of the target population. The supplied dataset contains summary-level outputs rather than demographic disaggregation; accordingly, gender, socioeconomic status, and home-learning-resource profiles are not inferred or reconstructed in this report.

Measures and Operational Definitions

Data were collected using structured self-report questionnaires with five response categories ranging from 1 (strongly disagree) to 5 (strongly agree). The original protocol reported checks of item validity and internal consistency using Cronbach's alpha [29]. Because the supplied research outputs did not include item-level statistics or coefficient values, this manuscript does not claim unreported reliability estimates. Table 1 states the operational domains retained from the original instrument.

Table 1. Operational Definitions of Study Variables

Variable	Operational Domains	Interpretive Focus	Illustrative Item
Assignment workload	Task quantity; task difficulty; time pressure	Perceived cognitive and temporal burden of assignments within an available completion window.	"I often feel rushed when completing school assignments."
Time management	Planning; task prioritization; study discipline	Students' organization of study activities, priorities, and deadlines.	"I prioritize assignments based on deadlines."

Variable	Operational Domains	Interpretive Focus	Illustrative Item
Academic stress	Emotional pressure; fatigue; task-delay symptoms	Emotional and physical strain experienced when academic demands are appraised as difficult to manage.	"I feel anxious when assignments accumulate."

Data Collection and Ethical Considerations

Questionnaires were administered to participating students after they received information about the study purpose. Participation was voluntary, the school authorized data collection, and respondents were informed that their responses would be treated confidentially and used for academic purposes only. Classroom observation was used to contextualize task-execution conditions; however, the reported inferential findings are based exclusively on questionnaire scores. No personally identifying information is reported in this manuscript.

Data Analysis

The original analysis used descriptive statistics, Pearson product-moment correlation, and multiple linear regression in SPSS, with a two-sided significance threshold of 0.05. This revision retains the original estimates and adds 95% confidence intervals calculated from the reported correlation and regression statistics to improve transparency. The Shapiro-Wilk procedure is a standard option for evaluating normality when raw data are available [30], and confidence intervals are preferable to a sole reliance on p-values for interpreting magnitude and precision [31]. Because item-level and case-level data were not supplied, this manuscript does not report new normality tests, residual diagnostics, or variance inflation factors.

RESULTS AND DISCUSSION

Results

Data Profile and Descriptive Statistics

The analysis retained 127 questionnaire records. The available outputs support a complete descriptive and inferential account at the scale-score level. The original manuscript used category boundaries that overlapped across adjacent labels; such boundaries can create contradictory classifications. To avoid this problem, the revised report emphasizes continuous score distributions, observed ranges, and inferential estimates rather than unstable categorical claims. Across the three constructs, standard deviations were substantial, indicating meaningful heterogeneity in students' perceived learning conditions and stress experiences.

Table 2. Descriptive Statistics for Assignment Workload, Time Management, and Academic Stress (N = 127)

Construct	Mean	SD	Median	Mode	Minimum	Maximum
Assignment workload	26.30	8.27	26	21	10	50
Time management	31.97	8.90	33	40	12	50
Academic stress	26.96	8.84	27	30	10	50

Bivariate Associations with Academic Stress

Perceived assignment workload showed a statistically significant, positive, small-to-moderate association with academic stress, $r = 0.363$, $p < 0.001$. The 95% confidence interval did not include zero, indicating that the observed association is unlikely to be attributable to sampling fluctuation alone. Students who perceived a heavier, more difficult, or more time-pressured assignment load tended to report greater academic stress. In contrast, time management showed a small positive, non-significant correlation with academic stress, $r = 0.136$, $p = 0.127$. The corresponding confidence interval crossed zero, so the data do not support a reliable bivariate relationship in this sample.

Table 3. Pearson Correlations Between Study Variables and Academic Stress

Predictor	r	95% CI for r	p-value	Interpretation
Assignment workload	0.363	[0.202, 0.505]	< 0.001	Positive, statistically significant
Time management	0.136	[-0.039, 0.303]	0.127	Not statistically significant

Combined and Unique Contributions to Academic Stress

The multiple regression model including assignment workload and time management was statistically significant, $F(2, 124) = 9.454$, $p < 0.001$, and explained 13.2% of the variance in academic stress ($R2 = 0.132$; adjusted $R2 = 0.118$). This result indicates that the two variables together have meaningful, though limited, explanatory value. Assignment workload retained a significant unique association with academic stress after time management was included in the model. By contrast, time management did not make a statistically significant unique contribution. The standardised coefficient for workload (beta approximately 0.36) also shows that its adjusted association was substantively larger than that of time management (beta approximately -0.03).

Table 4. Multiple Linear Regression Predicting Academic Stress (N = 127)

Predictor	B	SE	Standardised beta	t	p-value	95% CI for B
Assignment workload	0.387	0.096	0.362	4.033	< 0.001	[0.197, 0.577]
Time management	-0.027	0.088	-0.027	-0.308	0.758	[-0.201, 0.147]

Discussion

Assignment Workload as a Psychosocial and Cognitive-Ergonomic Stressor

The central finding is that perceived assignment workload was positively associated with academic stress and remained the only significant predictor when workload and time management were considered simultaneously. This pattern is consistent with stress-transactional accounts in which demands become stressful when they are appraised as exceeding coping resources [4], [5], [6], [7]. It also complements research showing that homework effectiveness depends on quality, perceived usefulness, difficulty, and workload coordination rather than volume alone [8], [9], [10], [11]. For early adolescents, overlapping

deadlines and compressed completion windows can elevate cognitive load, reduce recovery time, and transform otherwise meaningful assignments into a source of strain.

The present effect is small-to-moderate rather than deterministic. Assignment workload accounted for part, but not all, of the variance in academic stress. This is theoretically expected: stress also depends on family support, teacher feedback, peer relations, prior achievement, emotional regulation, health, and access to study resources. The R2 of 0.132 should therefore not be read as a weakness of the study. Rather, it identifies assignment design as one actionable component of a broader student-well-being system. The result cautions against interpreting academic stress solely as a problem of personal resilience or effort.

Why Time Management Was Not a Significant Independent Predictor

Contrary to a simple skills-deficit narrative, time management was not significantly related to academic stress in either the bivariate or adjusted model. This does not mean planning and prioritization are unimportant. Existing work links time-management practices to perceived control, well-being, and academic functioning [15], [16], [17], [18], [19]. However, the present data suggest that those skills did not independently offset stress under the assignment conditions experienced by this Grade VII cohort. A student may plan carefully and still experience pressure when several teachers assign demanding work at the same time, deadlines converge, or the home environment does not provide sufficient time and support for completion.

This interpretation is compatible with self-regulated learning theory. Planning is most effective when learners can exercise meaningful control over goals, strategies, time, and available resources [24], [25], [26], [27], [28]. It is also compatible with procrastination research, which shows that task delay, stress, and performance are intertwined but contextually shaped [20], [21], [22], [23]. In a transition-year cohort, the skill of managing time may still be developing and may not have enough leverage to compensate for externally generated workload peaks. The positive, although non-significant, zero-order correlation in this study further shows that time management cannot automatically be assumed to be protective without examining the surrounding demand structure.

Novelty and Contribution

The novelty of this study lies in its framing of assignment workload as a human-centered educational-design issue in early adolescence. Previous discussions often frame stress reduction as a matter of teaching students to work faster, avoid procrastination, or become more resilient. The evidence here shifts part of the responsibility to the organization of schoolwork: workload coordination, deadline visibility, assessment pacing, and support mechanisms are features of the learning environment. This framing is relevant to cognitive ergonomics because it concerns the fit between task demands, time resources, attention, fatigue, and students' developmental capacity.

The study also contributes context-specific evidence from a public lower secondary school in Indonesia, a setting underrepresented in the predominantly tertiary-level workload literature. Its findings indicate that the association between workload and stress is visible before students enter higher education, at a stage when habits of self-regulation and academic identity are still being formed. Importantly, the study does not infer gendered differences because no

gender-disaggregated analysis was available. Future work should explicitly examine whether workload, care obligations, digital access, and psychosocial support operate differently for girls and boys, and for students from different socioeconomic contexts.

Implications for Practice, Student Support, and Policy

At the practice level, subject teachers should coordinate assignment calendars, avoid predictable deadline clustering, communicate estimated completion time, and distinguish essential practice from low-value repetition. A shared digital or classroom-based assignment tracker can make upcoming demands visible to students and teachers. Teachers can also use low-stakes formative checks to identify students who are accumulating unfinished work before stress intensifies. These recommendations focus on prevention by redesigning demand patterns rather than responding only after students report distress.

Time-management instruction remains worthwhile, but it should be implemented as a support layer within a proportionate workload system. Short routines for breaking tasks into steps, estimating required time, prioritizing deadlines, and seeking help early may strengthen perceived control. School-wide social-emotional learning and mindfulness-oriented programs have demonstrated beneficial effects on emotional competencies and stress-related outcomes when embedded in supportive environments [3], [32], [33], [34], [35], [36], [37], [38], [39], [40]. For counseling and student-welfare services, the practical implication is to monitor both individual coping and structural stressors. A student experiencing overload should not be assumed to have poor self-management before the task system itself is examined.

CONCLUSION

This study shows that perceived assignment workload is positively and significantly associated with academic stress among Grade VII students in a public lower secondary school, whereas time management does not independently predict stress in the same model. The joint model explains 13.2% of stress variance, confirming that workload is important but not exhaustive as an explanation. The findings support a human-centered approach to assessment: schools should coordinate assignments, protect students from avoidable deadline congestion, and integrate time-management guidance with psychosocial support. The contribution is to show that early-adolescent academic stress should be understood as an interaction between students' developing self-regulation and the design of the learning environment. Future longitudinal and multi-school studies should include item-level psychometrics, teacher-level assignment data, gender-disaggregated analyses, and contextual measures of family support and access to learning resources.

LIMITATIONS

Several limitations delimit the interpretation of this study. First, the cross-sectional design estimates association and cannot establish causality or directionality. Second, the sample was drawn from one public lower secondary school, limiting external generalizability. Third, self-report scores may be influenced by recall, response style, and students' momentary affect. Fourth, the revised manuscript relied on available summary outputs; item-level data, demographic characteristics, normality diagnostics, item validity coefficients, and exact reliability coefficients were not available for reanalysis. Fifth, the study did not measure

potentially influential variables such as family support, teacher practices, socioeconomic conditions, academic achievement, sleep, and peer relations. These limitations reinforce the need for longitudinal, multi-informant, and multi-school research rather than weakening the practical relevance of the observed workload-stress association.

AUTHOR INFORMATION

Corresponding Author

Khafifatu Syahraini – Universitas Sains Islam Al-Mawaddah Warrahmah Kolaka (Indonesia);
orcid.org/0009-0002-2406-3930
Email: thekhasmin@gmail.com

Authors

Khafifatu Syahraini – Universitas Sains Islam Al-Mawaddah Warrahmah Kolaka (Indonesia);
orcid.org/0009-0002-2406-3930
Nurhayati – Universitas Sains Islam Al-Mawaddah Warrahmah Kolaka (Indonesia);
orcid.org/0000-0001-8351-1831
Khusnul Fatimah – Universitas Sains Islam Al-Mawaddah Warrahmah Kolaka (Indonesia);
orcid.org/0009-0007-9548-3349

AUTHOR CONTRIBUTION

K.S. contributed to study conceptualization, research design, data collection, data analysis, interpretation of findings, manuscript drafting, and coordination of the manuscript submission process. N. contributed to instrument development, data collection, interpretation of findings, critical revision of the manuscript, and approval of the final version. K.F. contributed to data management, literature review, manuscript drafting, critical revision, and approval of the final version. All authors contributed substantially to the study, approved the final manuscript, and agree to be accountable for the integrity and accuracy of the work.

CONFLICT OF INTEREST

"The authors declare no conflict of interest."

DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

The authors used ChatGPT to assist with language refinement and manuscript organization during preparation of this work. After using the tool, the authors reviewed and edited the content and assume full responsibility for the accuracy, integrity, and originality of the manuscript.

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