



Research article

Psychosocial determinants of academic achievement in Ethiopian higher education students, 2024. Systematic review and meta-analysis

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ABSTRACT

Introduction: Ethiopian students' academic achievement goes beyond just cognitive ability. It is interwoven with psychological and social factors. This analysis examines how these interconnected dimensions, including behaviour, emotions, and mental well-being, influence academic attainment. By revealing the multifaceted factors that shape student well-being and success, this review highlights their critical role in the higher education landscape.

Methods: This systematic review and meta-analysis study aimed to contribute to the academic literature by exploring the psychosocial factors affecting the academic achievement of Ethiopian higher education students. It leveraged a diverse array of scholarly databases, and adherence to recommended reporting guidelines ensured methodological rigor and transparency throughout the investigation.

Result: This systematic review synthesizes findings from 14 high-quality Ethiopian cross-sectional studies assessed using the Newcastle-Ottawa Scale. The overall pooled mean grade point average of respondents was 3.04, [(95 % CI: 2.75, 3.32), $I^2 = 0.00$ %, $P < 0.001$]. The pooled odds ratio psychosocial predictors of academic achievement was 0.47, [(95 % CI: 0.46, 0.48), $I^2 = 0.00$ %, $P = 0.001$]. The study explored factors affecting academic achievement, including psychological (sleep, stress, self-esteem) and sociological factors (social media, financial hardship, social support). The review found that these factors emerged as significant influences, highlighting the multifaceted nature of academic success.

Conclusion: This synthesized study champions a holistic approach to education, urging the integration of academic progress and student well-being. It emphasizes interventions in mental health, social support, and resource access, and acknowledge their multifaceted impact on learning. In addition, it would be better to build inclusive environments with the involvement of educators and policymakers to optimize the academic success of higher education students.

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Acronym/Abbreviation

CI	Confidence interval
GPA	Grade point Average
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
WHO	World Health Organization

1. Introduction

Today's higher education student is in the thick of an academic journey, actively enrolled in a college or university program working towards a degree or diploma [1]. Their days are a whirlwind of classes, exams, and assignments, often balanced with the additional demands of extracurricular activities, part-time jobs, and maintaining a social life [2]. Higher education plays a pivotal role in shaping individual trajectories and societal progress, with academic achievement serving as a cornerstone for success in various domains [3]. However, diverse challenges encountered by learners can hinder their academic progress, affecting graduation rates – a key institutional metric – and individual student success, often measured through grade point averages [4,5]. To ensure effective assessment and guide student learning, subject-specific frameworks establish knowledge and skill benchmarks. These benchmarks serve as a foundation for students' academic journeys and future contributions [6]. Ethiopia's recent enrolment surge in higher education demonstrates its commitment to educational attainment [7]. However, this expansion necessitates investigating the factors behind potentially low academic achievement, especially considering quality concerns alongside access [8]. While existing research prioritizes academic factors like course difficulty and study habits, it often neglects the broader influence of psychological factors on student success [9,10]. A complex interplay of personal characteristics significantly affects student achievement. These characteristics include socioeconomic background, social support networks, mental well-being, self-motivation, self-worth, and self-regulation [11]. Educational interventions and policies designed to enhance academic success must acknowledge and understand these factors [12]. Unravelling the intricate links between academic achievement and external influences is crucial [13]. By leveraging this knowledge, educators can develop evidence-based intervention strategies with the potential to optimize student-learning outcomes [14].

Ethiopia is booming higher education system, boasting over 100 universities, has opened its doors wider for millions [15]. Concerns about quality in rural education persist due to limitations in resources, under-trained faculty, traditional teaching methods, and resulting equity gaps that disadvantage students from underprivileged backgrounds [16]. Even with current hurdles, Ethiopia's potential for national development through education is significant, fuelled by ongoing reforms in quality assurance, curriculum diversification, and technology integration. The targeted research on specific challenges and solutions remains essential to guarantee equitable access for all and maximize the impact of higher education on the country's future [17,18]. The expansion of Ethiopia's higher education system offers a unique chance to investigate how psychosocial factors like motivation, anxiety, and social support impact students' academic performance [19]. Studies across many higher education institutions have identified several psychosocial factors that can predict academic achievement. These factors include sleep quality, sexual health, and social media use [20–22]. This systematic review and meta-analysis investigates the psychological and social barriers hindering academic success among Ethiopian higher education students. By shedding light on the multifaceted dynamics affecting student success, the research offers valuable insights for optimizing educational interventions and supporting the development of Ethiopia's future workforce. The study's findings not only contribute to a deeper understanding of psychosocial factors affecting academic underachievement in Ethiopia, but also hold wider implications for similar situations globally. By elucidating these factors, the review paves the way for the development of targeted interventions and policies that can enhance student performance and foster a supportive learning environment within the national education system, ultimately informing policymakers, educators, and stakeholders in addressing these challenges.

2. Methods

2.1. Eligibility criteria

For our eligibility criteria, we used PICOT (P: Population, I: Intervention, C: Comparison, O: Outcome, T: Timeframe/Study Design).

The authors precisely adhered to pre-established inclusion/exclusion criteria in conducting an unbiased eligibility assessment of the candidate studies. Any discrepancies or uncertainties arising during this process were addressed through open discussion and consensus building amongst the research team, ensuring the objectivity and transparency of the selection process.

2.2. Inclusion criteria

Study area: Ethiopian higher education studies.

Population: Participants aged ≥ 18 years old and regularly attending in higher education institution/university.

Exposure: Psychological and social factors associated with academic achievement.

Publication condition: only published studies.

Study design: all observational studies (cross-sectional and observational) reported the association between academic achievement

and psychosocial determinants.

Language: only articles reported in English language.

Outcome: Academic achievement among higher education student.

In addition, those studies reported the sensitivity and specificity of the assessment tool were included.

2.3. Exclusion criteria

Those published studies with methodological problem were excluded from the current review. Studies were omitted if they did not employ basic statistical analyses to elucidate the relationship between academic performance and its potential influencing factors. This methodological decision ensured that only studies providing robust, data-driven evidence regarding these associations were incorporated into the review, thus strengthening the overall credibility and generalizability of the synthesized findings. Published articles with inaccessible full text were excluded from the current review.

3. Exposure and outcome measurement

In this study review, student achievement, the outcome variable, was assessed through a multi-pronged approach encompassing grade point average (GPA), calculated by multiplying course unit values by corresponding grade points and dividing by total units, as well as skill checklists, written tests, interviews, and gap analyses conducted in the skill lab. To gain a holistic understanding of potential influencing factors, both psychological and social aspects were evaluated. Psychological factors included mental distress, sleep patterns, self-esteem, anxiety, sadness, and suicidal ideation. Social factors encompassed social support, monthly income, marital status, loss experiences, and prosocial behaviour. This comprehensive assessment framework aimed to elucidate the interplay between academic performance and various psychological and social influences.

3.1. Searching strategy

Electronic databases such as HINARI, Scopus, Google Scholar, PubMed, African Index, Google Science Direct, Web of Science, World Health Organization and Cochrane electronics were employed to point out eligible articles for the current systematic review. This systematic review and meta-analysis included papers published from 2013 to 2022. The literature search was carried out from Jun–July 2023. Endnote X7 was used to manage citations and duplication. Search terms such as “Academic achievement OR Academic performance OR Average cumulative grade point OR Academic competency AND Higher Education institution OR university OR college student AND Ethiopia were used alone and in conjunction with Boolean operators including ‘AND’ or ‘OR’. Moreover, terms such as Psychological factors OR Social determinants OR psychosocial associated factors were utilized by mixing with the above mesh terms ([Supplementary 1](#)). This study review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to select each characteristics of a study participant ([Supplementary 2](#)).

3.2. Data extraction

All of the authors using a Microsoft Excel format did the data charting process independently. Discordance between authors was fixed through discussion. The data extraction form for the academic achievement included the following information: name of the authors, year of publication, university where the study was conducted, sample size, response rate, study design, mean, and standard deviation with 95 % confidence intervals. For factors associated with academic achievement adjusted odds ratio, beta and correlation coefficient with a 95 % confidence interval were extracted for systematic review and meta-analysis.

3.3. Assessment of bias

The authors assessed all articles for bias using Joanna Briggs Institute (JBI) critical appraisal checklists (14 cross-sectional studies) [23]. Cross-sectional studies were evaluated for clearly defined inclusion criteria, detailed description of subjects and setting, valid and reliable exposure measurement, objective criteria for measuring the condition, identification of confounding factors, strategies to address confounding factors (if applicable), valid and reliable outcome measurement, and appropriate statistical analysis. All articles met the criteria for inclusion.

3.4. Data analysis

The extracted data using Microsoft excel was exported to STATA version 14 for data analysis. The pooled grade point average and its associated factors were analysed using random effect model. Heterogeneity was evaluated using I^2 and Cochrane Q-test. For psychosocial determinants of academic achievement, pooled adjusted odds ratios with 95 % confidence interval from original studies were employed. Data normalization and variance stabilization were applied. STATA version 16 software was used for all analysis.

3.5. Publication bias

Egger’s test, Begg’s test and funnel plots were used to assess publication bias, with asymmetric distribution and a p-value less than

0.05 indicating potential bias.

3.6. Quality assessment

This review ensured the statistical rigor of included studies by adhering to the Newcastle-Ottawa scale. Key data (e.g., average GPA, associated variables) were extracted from relevant tables. Due to the limited number of studies per predictor, only factors with substantial links to academic success were analysed. To ensure accurate data extraction, each included article underwent meticulous examination, involving multiple readings. This methodological approach underscores the review’s strengths in quality, comprehensiveness, and accurate data synthesis (Supplementary 3).

3.6.1. Ethical consideration

The published articles included in this systematic review and meta-analysis were available in public google database; therefore, there is no concern about ethical considerations.

4. Results

4.1. Study search and selection

A systematic review was conducted to investigate the determinants of poor academic achievement, focusing on English-language publications. To ensure comprehensive coverage, five databases (PubMed, Hinari, PsycINFO, AJOL, and Science Direct) were searched. Following a rigorous screening process, 31 studies were excluded (11 duplicates and 20 irrelevant topics). An additional four lacked a clear link between the determinants and poor academic outcomes. Finally, 14 high-quality publications were included in this study review. This meticulous selection process yielded robust findings, paving the way for further research on academic achievement and the factors that influence it (Fig. 1).

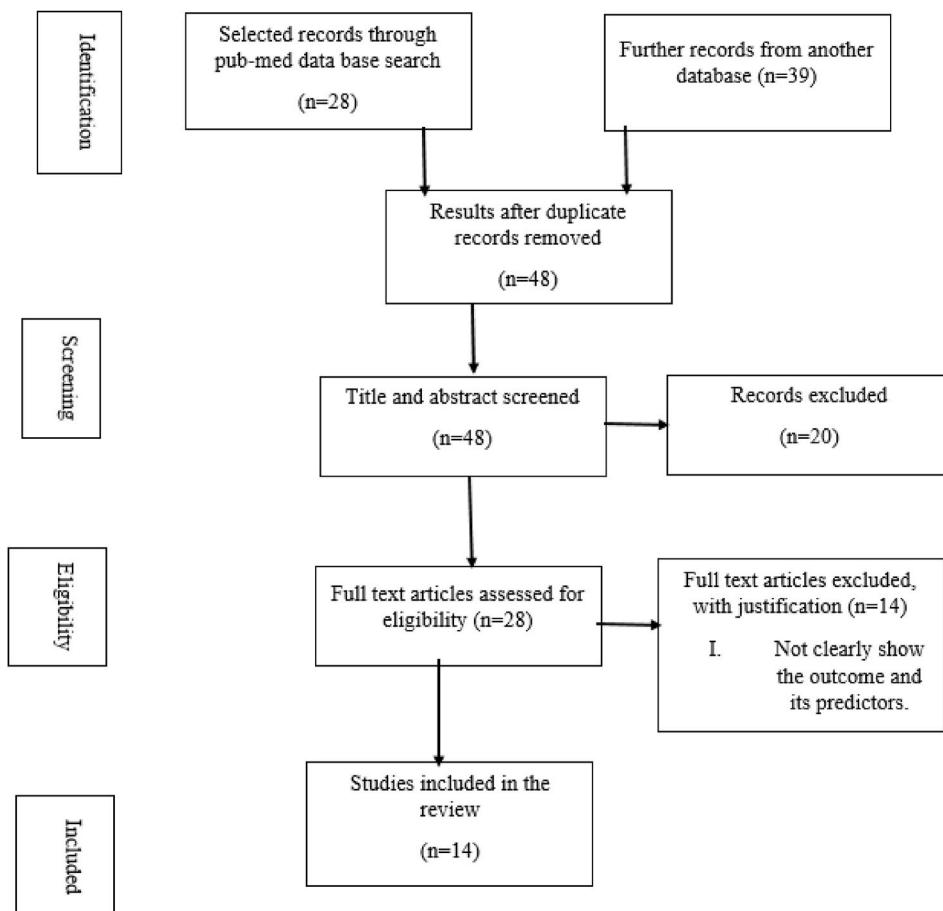


Fig. 1. The flow chart that showed the selection process of papers for systematic review and meta-analysis in Ethiopia, 2024.

4.2. Summary of psychosocial factors of academic achievement

This systematic review tackles the under-researched topic of academic performance among Ethiopian higher education students, exploring the variables that influence it. By evaluating performance through both tailored grade point averages and context-specific indicators, the review synthesizes findings from 14 Ethiopian studies. These studies focused on psychological and social factors associated with underachievement. Cross-sectional studies encompassing a diverse range of participants (aged 18–35, all genders, and from four regions) revealed a link between poor academic performance and various psychological factors. These factors included sleep quality, stress perception, mental distress, suicidal ideation, low self-esteem, social media usage, academic self-perception, substance use history, and depression. Furthermore, the review pinpoints a multifaceted interplay of social factors affecting student success. Notably, financial strain, having a close friend who uses substances and restricted pro-social behaviours were identified as significant predictors of low academic achievement (Table 1).

4.3. Trends of academic achievement over the last 10 years

The mean grade point average of respondents did not show a linear distribution. In addition, there is a variability of publication across studies from year to year; however, there is overall increasing trend (Fig. 2).

Table 1

Summary of studies included in a systematic review focused on academic achievement and psychosocial factors in Ethiopian higher education, January 2024.

Author	Sample	Study area	Population sampling	Outcome Measure	Main finding/Result
Lemma S et al. [20]	2143	Haramaya and Gondar University	21.9 % female, Mean(SD) age = 21.6 (\pm 2.1)	Low academic achievement and poor sleep quality	(Sleep quality = β = -0.012, Std. Err = 0.004, t-test = -3.03, P-value <0.002).
Lake Y et al. [22]	204	Dire-Dawa Polytechnic college	38.2 %,female)	Low academic achievement and high social media usage	Social media usage (telegram (r = -0.25), Facebook (r = -0.29), and What's-app (r = -0.38), P-value <0.002).
Tesfahunegn T et al. [24]	919	Aksum University	35 % female), Mean(SD)age = 21.5 (\pm 2.7)	Low Academic achievement and mental distress	Mental distress (AOR = 1.51, 95 % CI: 1.03, 1.61, P-value <0.003)
Asfaw H et al. [25]	710	Haramaya university	31.1 % female, Mean(SD) age=(22.7 \pm 3.2)	Low academic achievement and suicidal ideation	Suicidal ideation (AOR = 0.30, 95 % CI: 0.18–0.49, P-value <0.001).
Gedefaw A et al. [26]	592	Hawassa University	20.1 % female Mean(SD) age = 22.1 \pm 2.5	Low academic achievement and substance use	Tobacco, alcohol, or khat use (AOR = 1.95, 95 % CI: 1.25–3.02, P-value <0.003).
Gidi N et al. [27]	422	Jimma university	33.8 % female, Mean (SD) age = (22 \pm 3).	Low academic achievement and low self esteem	low self-esteem (LSE) AOR = 3.7 (95 % CI, 1.3–10.0, P-value <0.002)
Amhare A et al. [28]	402	Salale University	43.2 % female), Mean(SD) age=(22 \pm 1.9)	Low academic achievement and perceived stress	Perceived stress [r = -0.25 (-0.334, -0.153, P-value <0.003)].
Ahmed G et al. [29]	556	Jimma university	35.2 % female), Mean(SD)age = (21.2 \pm 2.7)	Low academic achievement and depression	Depression (AOR = 2.912, 95 % CI; 1.063–7.975, P-value <0.003).
Gelibo T et al. [30]	750	Wolaita Sodo University	22.1 % female Mean(SD)age = (20 \pm 2),	Good academic achievement and abstain from sexual intercourse	Abstain from sexual intercourse AOR = 2.9 (1.9, 4.6), P < 0.04).
Tsegay L et al. [31]	390	Addis Ababa university	40.5 % female, Mean(SD)age = 21.8 (21.8 \pm 3.1)	Low academic achievement and test anxiety	Test anxiety [AOR = 0.11, 95 % CI: (0.044, 0.288, P-value <0.003)].
Negash T et al. [32]	123	Gondar and Debre Tabor University	26%female), Mean (SD) age = 22, (22 \pm 1.9)	Good academic achievement and Students perception of teachers, students' academic self -perception and students' social self-perception	Students perception of teachers, students' academic self -perception and students' social self-perception (β = 0.06 & P = 0.39, β = 0.14 & P = 0.015 and β = 0.13 & P-value = 0.023), respectively.
Mesele T et al. [33]	356	Haramaya university	100 % female, Mean(SD) age =(22 \pm 2.1)	Low academic achievement and low student monthly income	Monthly pocket money <150ETB [AOR = 3.91:95%CI (1.48, 10.29, P-value <0.001)
Mekonen T et al. [34]	725	Wolaita Sodo University	33.5 % female), Mean age=(21.1 \pm 2)	Low academic achievement and Intimate substance user	Intimate friend who uses substance (β = -0.17, 95 % CI: -0.31, -0.03, P-value <0.003).
Getahun A et al. [35]	111	Wollo University	54.9 % female, age not specified	Low academic achievement and prosocial behaviour	Prosocial behaviour (r = -0.219, p < 0.04).

(Score: Newcastle-Ottawa scale quality assessment score, Min: Minimum, Max: Maximum, AOR: Adjusted odds ratio, CI: Confidence interval, SD: Standard deviation, Std. Err: Standard error, β : Beta coefficient, P-value: Probability value).

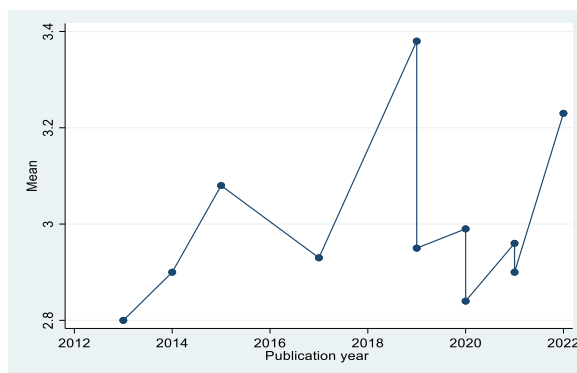


Fig. 2. The trend of academic achievement over 10 years of period (2012–2022) in Ethiopia, 2024.

4.4. Pooled mean grade point average

In this meta-analysis, eleven studies were included to estimate the pooled mean grade point average score of respondents. According to the analysis report, the pooled mean grade point average was 3.04, [(95 % CI: 2.75, 3.32), $I^2 = 0.00\%$, $P < 0.001$] (Fig. 3).

4.5. Subgroup analysis by period of publication (before pandemic, <2019 and after pandemic, >2019)

In this meta-analysis, the pooled grade point average was stratified using a publication year before pandemic (2019) and after pandemic (>2019). The pooled grade point average before the pandemic was 2.97, [(95 % CI: 2.55, 3.39), $I^2 = 0.00\%$, $P < 0.001$] and after pandemic 3.10 [(95 % CI: 2.70, 3.49), $I^2 = 0.00\%$, $P < 0.001$] (Fig. 4).

4.6. Subgroup analysis by country geography

According the current meta-analysis finding the pooled grade point average in central part of the country was 3.23 [95 % CI: 2.48, 3.98], $I^2 = 0.00\%$, $P < 0.001$], Northern, 3.05, [95 % CI: 2.58, 3.52], $I^2 = 0.00\%$, $P < 0.001$], Southern, 3.01, [95 % CI: 2.43, 3.58], $I^2 = 0.00\%$, $P < 0.001$] and Western, 2.94, [95 % CI: 2.35, 3.52], $I^2 = 0.00\%$, $P < 0.001$] (Fig. 5).

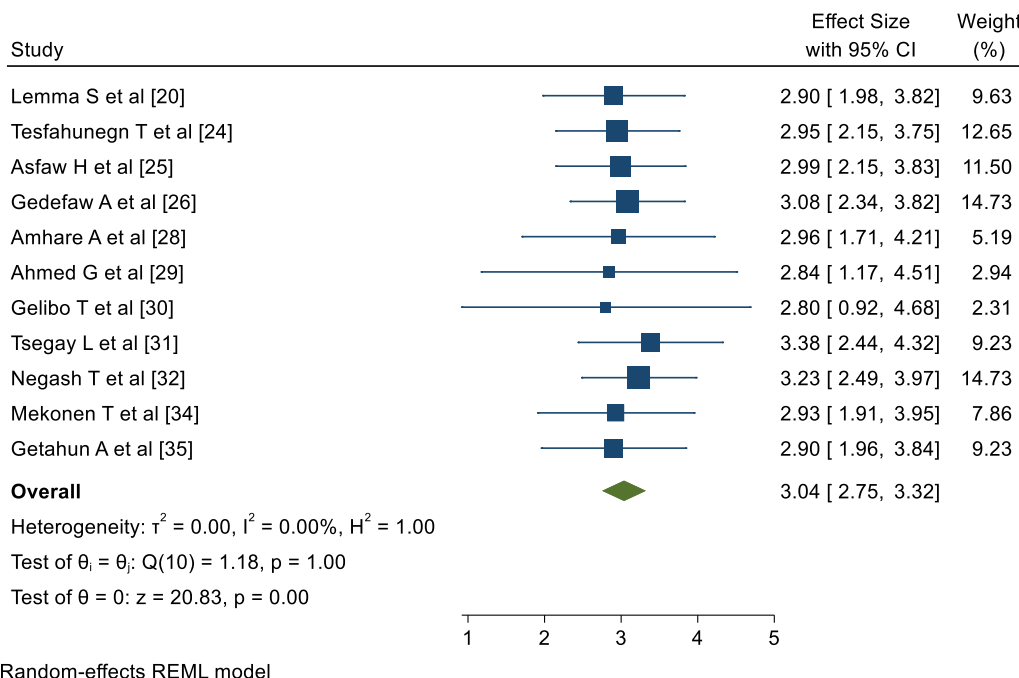
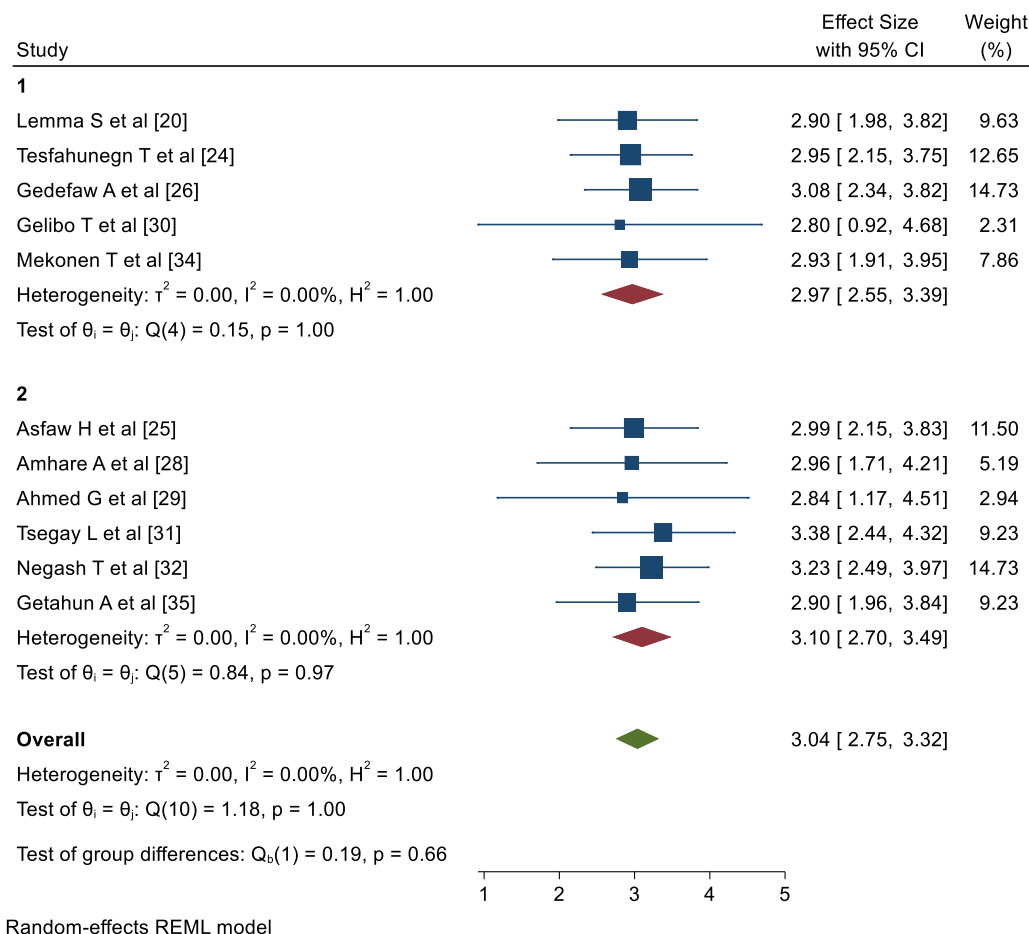


Fig. 3. The forest plot of pooled grade point average respondents in Ethiopia, 2024.



[1: Papers published before pandemic (<2019); 2: Papers published after pandemic (>2019)].

Fig. 4. The forest plot of pooled grade point average of respondents in Ethiopia stratified by the period of publication.

4.7. Publication bias test for the main outcome variable

Eggers test, Begg’s test and funnel plot were used to determine a publication bias across included studies. There was symmetrical distribution and no bias as evidenced by the funnel plot (Fig. 6). In addition, the Eggers and Begg’s test value was at $P = 0.46, P = 0.54$, respectively.

4.8. Factors associated with academic achievement

The psychosocial predictors of academic achievement across eleven studies was analysed and pooled odds ratio was $AOR = 0.47, [(95\% \text{ CI}: 0.46, 0.48), I^2 = 0.00\%, P = 0.001]$. There is no heterogeneity across studies. According to the analysis output, respondents with psychosocial predictors were 47 % less likely to have good academic achievement (Fig. 7).

4.9. Publication bias for factors associated with academic achievement

Funnel plot, Eggers and Begg’s test was employed to determine the publication bias of psychosocial predictors of academic achievement. The Eggers and Begg’s test value was at $P = 0.66, P = 0.45$, respectively. The funnel plot showed symmetrical distribution across studies (Fig. 8). From all tests result, there is no statistically significant publication bias across studies.

4.10. Quality assessment

Despite having clear research objectives, most studies suffered from methodological weaknesses. The design itself predisposed

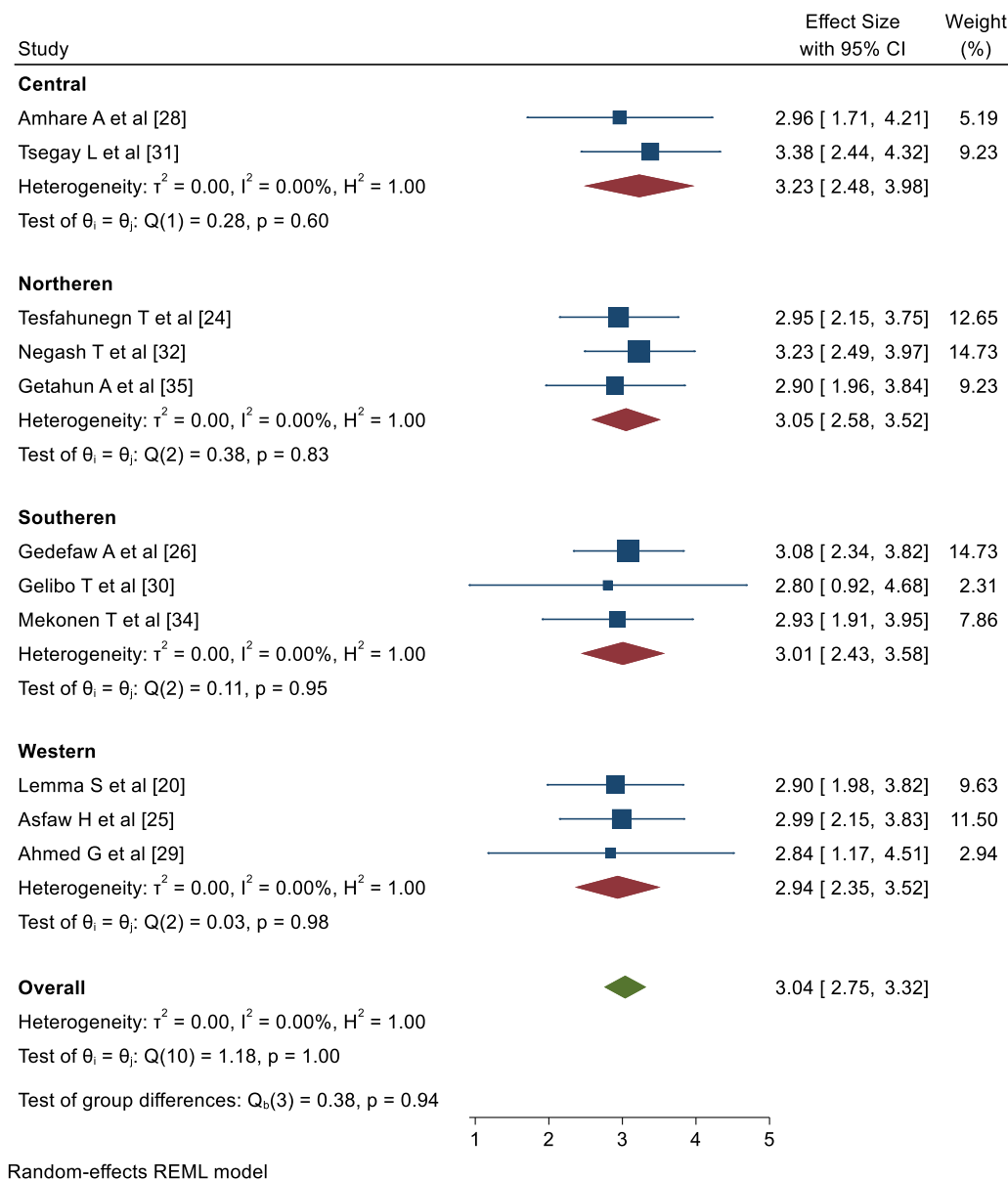


Fig. 5. The pooled grade point average of respondents stratified by the country geography in Ethiopia, 2024.

them to bias, and the sampling methods employed raised concerns about representativeness. This lack of rigor, exemplified by unclear sample size calculations and low response rates, ultimately limits the trustworthiness and applicability of their findings to broader populations (Table 2).

5. Discussion

This systematic review and meta-analysis identified a compelling association between psychosocial determinants of health and academic achievement. Specifically, the analysis found that financial hardship, having an intimate friend who uses substances, and restricted opportunities for prosocial behaviours were associated with lower academic achievement among students. This review finding was in line with the study done in German [36], Italy [37], Belgium [38], and Turkey [39].

The negative influence of limited financial resources, often manifested as inadequate stipends, is likely multifaceted. Economic hardship can lead to stress, anxiety, and diminished access to necessary resources like study materials and technology, thereby impeding academic focus and performance [40].

Pro-social behaviours, however, present a more nuanced picture. While excessive emphasis on social engagements can undoubtedly

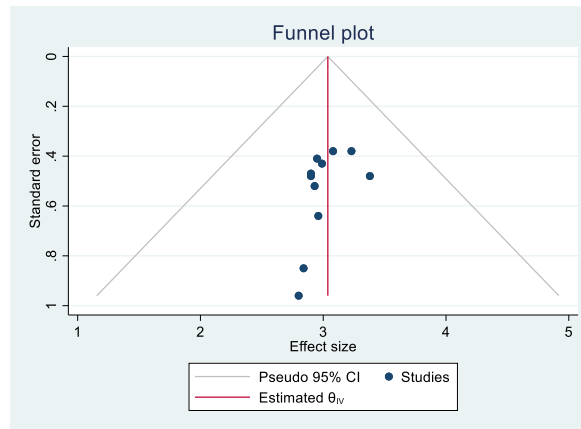


Fig. 6. Funnel plot graph on the pooled grade point average of respondents in Ethiopia, 2024.

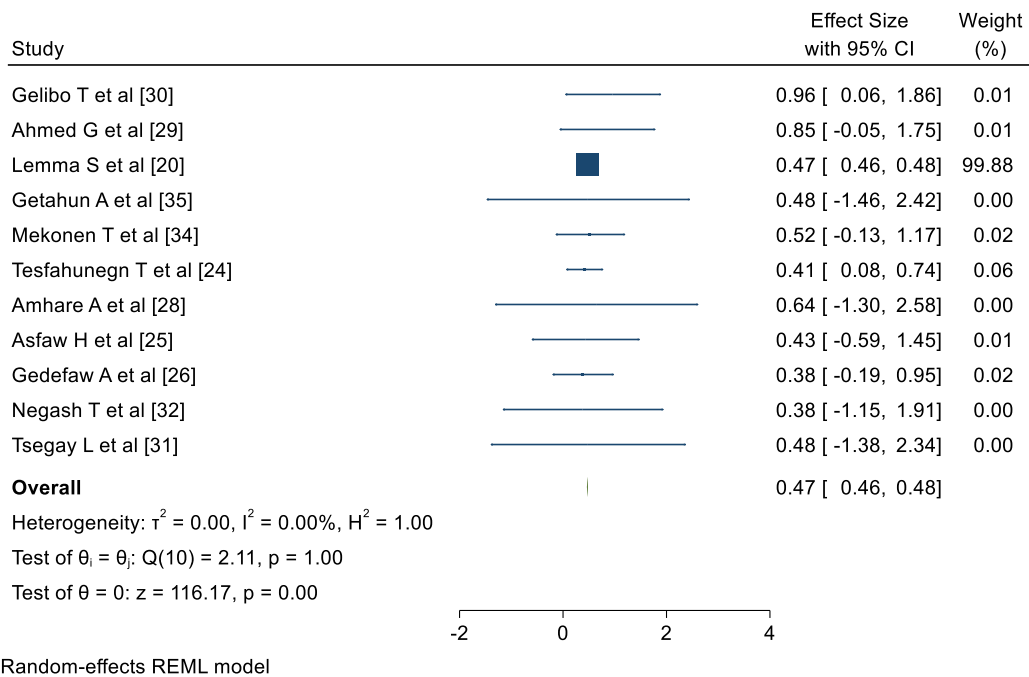


Fig. 7. The pooled odds ratio forest pot of psychosocial factors associated with academic achievement among respondents in Ethiopia, 2024.

distract from studies, moderate levels of pro-social behaviour can foster important support networks, collaboration skills, and a sense of belonging, potentially aiding academic success [41]. Understanding the specific types of pro-social behaviours and their influence on different student populations would be crucial. Exposure to friends’ substance use might negatively impact academic achievement through various pathways, including peer pressure, witnessing negative consequences, and potential substance use by the affected student themselves. Further research investigating the nature and extent of this exposure, as well as potential mediating factors, is needed to paint a more complete picture [36,42].

This review of studies found that student’s perceptions of their teachers and their academic self-perceptions were predictors of poor academic achievement. This finding is supported by studies conducted in the United States [43], Spain [44], Bangladesh [45] and Ethiopia [46].

Students’ perceptions of teachers are related to the concept of self-efficacy, which is a student’s belief in their ability to succeed. Positive teacher perceptions, characterized by support, encouragement, and effective instruction, can foster a student’s self-efficacy. This motivates them to engage in learning and persevere through challenges [47]. Conversely, negative perceptions, marked by a lack of support, discouragement, or ineffective teaching, can erode self-efficacy, leading to decreased motivation, engagement, and ultimately, poorer academic outcomes [48].

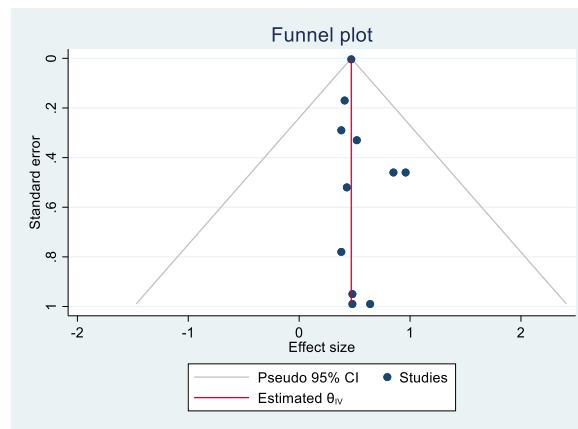


Fig. 8. The funnel plot for factors associated with grade point average of respondents in Ethiopia, 2024.

Table 2

The quality assessment summary of included papers in this systematic review, Ethiopia, 2024.

Study	Quality rating	Quality appraisal finding
Lemma S et al. (11)	Good	Cross-sectional design Demographic information's were clearly described Exposure measure validity and reliability were reported
Lake Y et al. (13)	Poor	Cross-sectional design Small sample size = 204, high risk of bias Selectivity in reporting findings
Tesfahunegn T et al. (16)	Good	Cross-sectional design Adequate sample size Exposure measure were described
Afaw H et al. (17)	Fair	Cross-sectional design Demographic information was not clearly defined Exposure measure (grade point average) poorly defined, and no details about its validity and reliability reported
Gedefaw A et al. (18)	Good	Cross-sectional design Demographic information were clearly defined Exposure measure clearly defined and detail report about its validity and reliability reported
Gidi N et al. (19)	Poor	Cross-sectional design Validity of outcome measure was not reported Use of a convenience sample: all participants were recruited from medical student; the representativeness of the sample is limited
Amhare A et al. (20)	Poor	Cross-sectional design Lower sample size and single correlation analysis Self-selection bias
Ahmed G et al. (21)	Fair	Cross-sectional design Standardized instrument but not validity report to measure exposure and predictor variable
Gelibo T et al. (22)	Good	Cross sectional Standardized instrument, random sampling technique and validity report
Tsegay L et al. (23)	Fair	Cross sectional study, clear explanation of outcome measure and adequate independent variable
Negash T et al. (24)	Poor	Small sample size = 123, Single department and No validity report
Mesele T et al. (25)	Fair	Random sampling, only female student and no validity report
Mekonen T et al. (26)	Poor	Cross sectional study, small independent variable and Selectivity in reporting findings
Getahun A et al. (27)	Poor	Small sample size (n = 111), poor statistical analysis, and no clearly explicit outcome measurement

Similarly, a student's academic self-perception, encompassing their beliefs about their own intelligence, competence, and ability to learn, significantly affects their academic trajectory. Students with positive self-perceptions tend to approach challenges with confidence and effort, while those with negative self-perceptions may exhibit learned helplessness, avoidance behaviours, and decreased academic performance [49].

This review of studies found that perceived stress, mental distress, low self-esteem, and suicidal ideation were associated with low academic achievement. This study finding was similar with United states Canada [50], Australia [51], and Saudi Arabia [52].

Elevated stress and mental distress can significantly impair cognitive function, hindering concentration, information processing, and problem-solving abilities essential for academic performance [53]. Low self-esteem might contribute to academic challenges by undermining motivation, fostering negative self-perceptions about academic competence, and leading to reduced engagement in learning activities.

Additionally, suicidal ideation may be indicative of severe psychological distress and emotional dysregulation, which can significantly disrupt focus, academic engagement, and classroom participation [54].

This review of studies reflected that poor sleep quality, psychoactive substance use, premarital sex, and excessive social media use (including Facebook, Telegram, WhatsApp, and Instagram) were linked with poor academic achievement. This finding was in Parallel with a study done Nepal [55], Jordan [56], Malawi [57], Ghana [58] and Spain [59]. Insufficient sleep affects a student's ability to pay attention, disrupts the consolidation of memories, and weakens overall cognitive prowess [60]. Premarital sex can potentially lead to stress, anxiety, or relationship issues, depending on individual contexts and cultural norms. These issues could then affect academic focus and motivation [61]. Both psychoactive drugs and excessive social media use can significantly hinder academic achievement. Drugs disrupt cognitive processing and induce emotional instability, impeding learning. Excessive social media use, characterized by constant distractions and disrupted sleep patterns, can contribute to decreased academic engagement and performance [62].

5.1. 4.1 limitation of the study

Two key limitations were reviewed that could potentially affect the overall strength of the conclusions. The first limitation is that different research studies applied diverse analysis techniques. This may allow for multi-angled perspectives on data, but it also brings about inconsistencies in findings. When different methods are used, they may yield slightly different results thereby making it difficult to have a comprehensive understanding. Additionally, the research was however limited to 14 higher education institutions. This means that there are issues regarding generalization. In fact, these findings might only be applicable to those particular institutions and this cannot conclusively show what is happening in all other higher education institutions across the nation.

6. Conclusion

This systematic review pinpointed a variety of significant factors contributing to low academic achievement among Ethiopian higher education students. Financial strain, exposure to substance-using friends, and limited pro-social behaviour emerged as crucial demographic and social predictors. Furthermore, the review identified a strong link between poor academic performance and several psychological factors, including sleep quality, perceived stress, mental distress, suicidal ideation, low self-esteem, social media use, academic self-perception, substance use history, and depression. These findings emphasize the complex nature of academic underachievement and necessitate multi-faceted interventions that address both individual and environmental influences. Future research should investigate the causal relationships between these factors and academic performance, while also evaluating the effectiveness of targeted interventions designed to improve student well-being and academic success.

Ethics approval and consent to participate

Not applicable.

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Data availability statement

All the data set used in this review was submitted as a supporting information file.

CRediT authorship contribution statement

Chalachew Kassaw: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Valeriia Demareva:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Misrak Negash:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Yohanes Sime:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

There are no apparent conflicts of interest with this publication.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2024.e36465>.

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