

## GENDER AND SOCIOECONOMIC DIFFERENCES IN BURNOUT AMONG EFL LEARNERS

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### ABSTRACT

This study examined burnout differences by gender and socioeconomic status among EFL university students in Indonesia (n=231, 53.3%), Laos (n=85, 19.5%), and Angola (n=117, 27%). Data from 433 students (females, n= 268, 61.89%, males, n=165, 38.11%) were collected using a cross-sectional survey, with participants recruited via WhatsApp groups shared by English lecturers. Burnout levels were measured using the Maslach Burnout Inventory-Student Survey (Schaufeli et al., 2002). The Mann-Whitney U Test showed that females (78.0%, median = 23.0) reported significantly higher burnout than males (67.3%, median = 22.0) (U = 18448, p = 0.004). This indicated that female students experienced more burnout than male students during their EFL learning. Regarding SES, similar percentages of students experienced moderate level of burnout: 75.6% from middle-to-upper and 72.1% from lower socioeconomic backgrounds. The Mann-Whitney U Test revealed no significant difference between these groups (U = 23389, p = 0.993, median for both groups= 22.0), indicating that burnout is common across socioeconomic statuses. To reduce burnout in EFL students, universities should offer engaging programs, like interactive games and stress-relief activities, focusing on the gender group with higher burnout, while incorporating fun English practice and time management tips.

**Key Words:** burnout; EFL learners; gender differences; socioeconomic status

### ABSTRAK

Studi ini meneliti perbedaan tingkat burnout dalam pembelajaran Bahasa Inggris berdasarkan gender dan status sosial ekonomi di kalangan mahasiswa di Indonesia (n=231, 53,3%), Laos (n=85, 19,5%), dan Angola (n=117, 27%). Data dari 433 mahasiswa (perempuan, n=268, 61,89%; laki-laki, n=165, 38,11%) dikumpulkan menggunakan survei cross-sectional, dimana peserta direkrut melalui grup WhatsApp yang dibagikan oleh dosen Bahasa Inggris. Tingkat burnout diukur menggunakan Maslach Burnout Inventory-Student Survey (Schaufeli et al., 2002). Hasil Uji Mann-Whitney menunjukkan bahwa mahasiswa perempuan (78,0%, median = 23,0) mengalami burnout secara signifikan lebih tinggi dibandingkan mahasiswa laki-laki (67,3%, median = 22,0) (U = 18448, p = 0,004). Hal ini mengindikasikan bahwa mahasiswa perempuan mengalami lebih banyak burnout dibandingkan mahasiswa laki-laki selama pembelajaran Bahasa Inggris. Berdasarkan status sosial ekonomi, persentase mahasiswa yang mengalami burnout tingkat menengah relatif serupa: 75,6% dari kelompok ekonomi menengah-atas dan 72,1% dari kelompok ekonomi bawah. Uji Mann-Whitney tidak menemukan perbedaan signifikan antara kedua kelompok ini (U = 23389, p = 0,993, median kedua kelompok = 22,0), yang menunjukkan bahwa burnout merupakan masalah umum di semua status sosial ekonomi. Untuk mengurangi burnout pada mahasiswa dalam pembelajaran Bahasa Inggris, universitas perlu menawarkan program pembelajaran Bahasa Inggris yang menarik seperti permainan interaktif dan kegiatan menghilangkan stres, dengan fokus pada kelompok gender yang mengalami burnout lebih tinggi. Program ini juga dapat menggabungkan latihan Bahasa Inggris yang menyenangkan serta tips manajemen waktu.

**Kata Kunci:** kelelahan; pembelajar EFL; perbedaan gender; status sosial ekonomi

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### INTRODUCTION

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Burnout is a psychological condition marked by emotional exhaustion, depersonalization, and less personal accomplishment (Abraham et al., 2024), often triggered by prolonged stress in work or educational settings (Nurfaidah & Kusdiyati, 2024). Emotional exhaustion arises from overwhelming academic or work demands, leading to feelings of fatigue and helplessness (Lee et al., 2020). Depersonalization refers to emotional detachment from tasks, where individuals become cynical and distant (Wahyuni et al., 2023), while less personal accomplishment is the perception of failing to meet expectations, diminishing motivation and self-confidence (Nascimento & Costa, 2024). Burnout affects both workers and students, with academic environments particularly prone to it due to heavy workloads and high expectations (Rawis et al., 2024). Burnout in academic environments is significantly correlated with rigorous academic demands, elevated expectations, and inadequate time management (Madigan & Curran, 2021). Low self-efficacy and a lack of social support further exacerbate the risk of burnout, as students struggle to cope with academic challenges (Yoo & Marshall, 2024; Vansoeterstede et al., 2024). In the context of academic, burnout often experienced by EFL learner in certain conditions.

EFL learners are particularly susceptible to burnout due to the unique pressures associated with learning a new language and adapting to different cultural contexts (Cong et al., 2024). For example, a study by Valieva et al., (2019) investigated the sociolinguistic adaption difficulties faced by oralman (repatriated ethnic Kazakh) students enrolled in English courses at Kazakhstani universities. The study showed that these students faced major social-psychological, linguistic, and cultural obstacles. Low English proficiency, difficulty pronouncing words accurately, and limited access to resources like dictionaries or specialized software were among the linguistic challenges faced by the study participants. Different customs and traditions from their home nations make it difficult for them to adapt culturally. Their problems are made worse by social-psychological problems including uncertainty and fear of criticism. It shows that adaptation to a new culture can hinder the process of understanding English due to cultural barriers, especially for foreign students (Murugova et al., 2022).

The process of acquiring proficiency in a foreign language is inherently challenging, requiring intense cognitive effort, sustained concentration, and frequent practice (Chen et al., 2024). For many EFL students, these demands are exacerbated by the need to simultaneously adjust to a new cultural environment, which can include navigating different social norms, educational expectations, and communication styles (Miao, 2022). This dual burden can lead to heightened levels of stress and anxiety, which are significant contributors to burnout (Li et al., 2024). Heightened levels of stress and anxiety can drain their enthusiasm for learning and lead to a noticeable drop in academic performance (Liu et al., 2023). The intersection of language acquisition challenges and the broader demands of academic life can create a stressful environment that exacerbates feelings of burnout (Madigan & Curran, 2021). However, EFL learners' stress levels can vary depending on their circumstances and characteristics. Gender differences and socio-economic status are some of the factors that contribute to learners' stress levels in learning English.

Based on the research findings, it is evident that gender differences among EFL learners play a significant role in shaping their academic experiences. The study indicates that female learners tend to be more active and perform better than their male counterparts in the school learning environment (Liu et al., 2022). Factors such as academic pressure, workload, stress, and emotional exhaustion play crucial roles. While high performance, being active in the school environment and moderate stress can be positive indicators (Lin et al., 2022), they can also be associated with increased stress and pressure, which are risk factors for burnout (Gao, 2023). In many cases, women tend to report higher levels of emotional exhaustion, while men are more likely to experience depersonalization, suggesting that gender plays a significant role in how burnout manifests (Fiorilli et al., 2022). Studies show that women are more prone to emotional exhaustion, the core of burnout, especially in emotionally demanding roles like teaching or caregiving, where they are overrepresented (Dyrbye et al., 2021). Women tend to internalize stress and face societal expectations for multitasking, which increases their burnout risk (Artz et al., 2022). Female students report higher levels of emotional exhaustion due to greater emotional involvement in their studies, perfectionism, and societal pressures (Pan & Ricamora, 2023). They are also more likely to experience anxiety and self-doubt, further heightening stress and burnout (Fiorilli et al., 2022). While women often use emotion-focused coping strategies, these can prolong

emotional stress if the root issues aren't addressed (Pathak, 2024). Coping strategies such as prioritizing self-care, setting achievable goals, practicing time management, adopting a positive mindset and building support networks can mitigate burnout in EFL learners or teacher to reduce anxiety and stress during their study (Reima, 2023). Due to norms and cultural expectations which can affect burnout, social supports from surrounding such as collaborating with colleagues, discussing challenges with administrators can provide emotional support and share coping strategies to deal with stress and burnouts (Ramin et al., 2017).

Because norms and cultural expectations can place different pressures on male and female learners, gender plays a crucial influence in determining burnout experiences. These stresses may be exacerbated when combined with socioeconomic difficulties, leading in particular stressors that disproportionately impact particular groups according to their gender.

Access to educational resources and assistance is greatly impacted by socioeconomic status, which also contributes to different levels of stress and burnout. When combined with gender, these differences might lead to more difficult obstacles since students may have to deal with both monetary limitations and established cultural norms that limit their capacity to cope. SES can significantly shape an individual's access to resources, social support, and coping mechanisms, all of which play key roles in either mitigating or exacerbating burnout (Ghorbani & Golparvar, 2020). Research has shown that individuals from lower socioeconomic backgrounds are more vulnerable to burnout due to financial stress, limited access to educational and psychological resources, and a range of environmental stressors (Rifat & Bithi, 2023). Financial instability, limited resources, and environmental stress heighten the risk of emotional exhaustion and burnout (Ye et al., 2021). In academics, students from low-income families often struggle to balance studies, work, and financial stress, creating a cycle of burnout (Rifat & Bithi, 2023). Many are forced to take part-time jobs, adding to their workload and reducing time for academic pursuits and self-care, which are vital for preventing burnout (Oteir & Al-Otaibi, 2022). While individuals from higher SES backgrounds often face stressors related to perfectionism and the fear of failure, which can contribute to burnout. For these individuals, burnout is not always driven by financial insecurity but by the societal and self-imposed pressures to meet high expectations (Ma, 2024).

Despite extensive research on burnout among English as a Foreign Language (EFL) learners, there is a significant gap in understanding how gender and socioeconomic status (SES) interact to influence burnout. Most studies focus solely on either gender differences or SES, without examining their combined effects. This study aims to fill this gap by exploring how both gender and SES impact burnout among EFL learners and to suggest more effective prevention and intervention strategies. This study aims to explore the impact of gender and socioeconomic status (SES) on burnout among English as a Foreign Language (EFL) learners. It seeks to address two key issues; firstly, how gender differences influence the levels of burnout experienced by EFL learners, and secondly, how SES affects burnout, with particular emphasis on learners from lower SES backgrounds. By examining these aspects, the study aims to provide insights into the varying levels of burnout related to gender and economic conditions, ultimately contributing to a better understanding of how these factors shape the experiences of EFL learners.

## METHODS

This study employed a quantitative, cross-sectional survey design to investigate the impact of gender and socioeconomic status (SES) on burnout among 433 (females,  $n=268$ , 61.89%, males,  $n=165$ , 38.11%) university students from Indonesia ( $n=231$ , 53.3%), Laos ( $n=85$ , 19.5%), and Angola ( $n=117$ , 27%). The participants were recruited through voluntary sampling via WhatsApp groups shared by English lecturers. Participants, who were predominantly female (61.89%) and categorized into lower SES (48.04%) and middle-to-upper SES (51.96%) groups, provided self-reported data through an online questionnaire. Respondents' perceptions of learning English, particularly regarding burnout, were measured using the Maslach Burnout Inventory-Student Survey (Schaufeli et al., 2002). This questionnaire comprises 15 items across three dimensions: emotional exhaustion (5 items), cynicism (4 items), and reduced personal accomplishment (6 items, all reverse-scored). It was adapted to evaluate burnout among EFL learners based on the recommendations of Li, Zhang, and Jiang (2024). The

responses were coded as: Strongly Disagree = 1, Disagree = 2, Agree = 3, and Strongly Agree = 4. The data were analyzed using numerical coding for gender and SES, with burnout categorized into low, middle, and high levels (Azwar, 2012). Researchers categorized the research data to determine the high, medium and low scale scores on the overall burnout score. Score-based categorization is a commonly used method for dividing respondents or raw data into several groups or categories based on the scores obtained from the measurement scale (Azwar, 2012). The calculation of data categorization is shown in Table 1.

**Table 1** Data Categorization

Data categorization process	
Xmin	40
Xmax	10
Range	$X_{max} - X_{min}$ $= 40 - 10 = 30$
Mean	$(X_{max} + X_{min}) / 2$ $= (40 + 10) / 2 = 25$
SD	$Range / 6$ $= 30 / 6 = 5$
Categorization Criteria for Burnout Level	
Low	$X < M - 1SD$ $X < 25 - 5$ $X < 20$ Low = 10 - 19
Middle	$M - 1SD < X < M + 1SD$ $25 - 5 < X < 25 + 5$ $20 < X < 30$ Middle = 20 - 30
High	$M + 1SD < X$ $25 + 5 < X$ $30 < X$ High = 31 - 40

The data categorization process for burnout levels involves defining ranges based on statistical measures. With a minimum value ( $X_{min}$ ) of 10 and a maximum value ( $X_{max}$ ) of 40, the range is calculated as 30. The mean ( $M$ ) is determined to be 25, with a standard deviation ( $SD$ ) of 5. Based on these calculations, burnout levels are categorized as follows: low (scores from 10 to 19), middle (scores from 20 to 30), and high (scores from 31 to 40). This classification helps in assessing and addressing varying levels of burnout among individuals. The non-parametric Mann-Whitney U test and cross-tabulation analysis were used due to the non-normal data distribution, enabling a detailed examination of burnout across gender and socioeconomic groups.

## FINDINGS AND DISCUSSION

### Findings

This section presents the data collected through a survey designed to evaluate students' perceptions of their ability to understand and use English. The objective of the survey was to identify gender and socio-economic status differences in the level of English comprehension among students from various study programs. Data were collected using an online questionnaire distributed to students at universities in three countries: Indonesia, Laos, and Angola. The questionnaire consisted of a series of questions covering various aspects, including gender, economic background, educational experience, and perceived difficulty in learning English. Respondents answered the questions by selecting the option that best suited their situation. The questionnaire was designed to assess several key variables, including gender, the economic category of students' parents, prior experience with English language learning, students' self-perceived ability to comprehend spoken English, the extent of emotional challenges associated with learning English, and students' perceptions of the difficulties encountered in learning and using English. Inquiries pertaining to students' perceptions of challenges of learning English. The responses are then coded according to their order from 1 to 4. The demographic characteristics respondents were shown in Table 2.

**Table 2** Socio-demographic characteristics of Respondents

Student's Gender	Socio Economic Status				
	n	%		n	%
Female	268	61.89 %	Lower socioeconomic status	208	48.04 %
Male	165	38.11 %	Middle to upper socioeconomic status	225	51.96 %
Total	433	100 %	Total	433	100 %

The data set comprises a profile of 433 students, with a gender distribution of 268 females (61.89%) and 165 males (38.11%). This indicates a significant majority of female students. In terms of socioeconomic status, 208 students (48.04%) originate from lower socioeconomic backgrounds, while 225 students (51.96%) hail from middle to upper socioeconomic statuses, indicating a slightly higher representation from the latter group. The specific respondent's socio-demographic characteristics by gender and country of origin can be seen in Table 3.

**Table 3** Respondents Socio-demographic characteristics by gender and country of origin

Country of origin		Gender			Total
		Male	Female		
Angola	Count	66	51	117	
	%within Gender	40.0%	19.0%	27.0%	
Indonesia	Count	70	161	231	
	%within Gender	42.4%	60.1%	53.3%	
Laos	Count	29	56	85	
	%within Gender	17.6%	20.9%	19.6%	
Total	Count	165	268	433	
	%within Gender	100.0%	100.0%	100.0%	

The table presents data on the respondent from three countries: Angola, Indonesia, and Laos. In Angola, there are a total of 117 learners, with 66 males (40.0%) and 51 females (30.4%). Indonesia has a total of 231 learners, consisting of 70 males (42.4%) and 161 females (60.1%). In Laos, the total number of learners is 85, with 29 males (17.6%) and 56 females (66.7%). Overall, across all three countries, there are 433 EFL learners, comprising 165 males (38.1%) and 268 females (61.9%).

In general, the findings indicate a greater proportion of female students, along with a relatively balanced distribution of socioeconomic status. The total number of respondents who experienced burnout by country of origin is presented in the following table.

**Table 4** Cross-tabulation between respondent's country of origin and burnout category

Country of origin		Burnout Category			Total
		Low	Middle	High	
Angola	Count	42	69	6	117
	%within Burnout Category	43.3%	21.6%	37.5%	27.0%
Indonesia	Count	44	180	7	231
	%within Burnout Category	45.4%	56.3%	43.8%	53.3%
Laos	Count	11	71	3	85
	%within Burnout Category	11.3%	22.2%	18.8%	19.6%
Total	Count	97	320	16	433
	%within Burnout Category	100.0%	100.0%	100.0%	100.0%

The burnout data shows distinct patterns across countries. Angola has 43.3% of respondents in Low Burnout and a notable 37.5% in High Burnout. In Indonesia, 56.3% fall into the Middle Burnout category, with significant levels of both Low (45.4%) and High (43.8%) Burnout. Laos has the lowest Low Burnout (11.3%), with most respondents in Middle Burnout (22.2%) and a smaller proportion

(18.8%) in High Burnout. These results indicate varying burnout experiences, with Indonesia having the highest middle burnout and Angola showing significant high burnout.

#### Gender and Socioeconomic in Burnout

Upon examination of the affect of gender and socioeconomic in burnout among EFL students, it becomes evident that notable distinctions exist, indicating that gender and socioeconomic status play a pivotal role in how students experience burnout. These differences may originate from a multitude of social, psychological, and cultural factors that shape how male and female from different socioeconomic conditions cope with academic stress. The cross-tabulation can be seen in Table

**Table 5** Cross-tabulation of Gender and Socioeconomic in Burnout

Socioeconomic				Burnout Category			Total
				Low	Middle	High	
Lower socioeconomic status	Gender	(1) Male	Count	24	63	2	89
			% of Total	11.5%	30.3%	1.0%	42.8%
	(2) Female	Count	26	87	6	119	
		% of Total	12.5%	41.8%	2.9%	57.2%	
	Total	Count	50	150	8	208	
		% of Total	24.0%	72.1%	3.8%	100.0%	
Middle to upper socioeconomic status	Gender	(1) Male	Count	25	48	3	76
			% of Total	11.1%	21.3%	1.3%	33.8%
	(2) Female	Count	22	122	5	149	
		% of Total	9.8%	54.2%	2.2%	66.2%	
	Total	Count	47	170	8	225	
		% of Total	20.9%	75.6%	3.6%	100.0%	
Total	Gender	(1) Male	Count	49	111	5	165
			% of Total	11.3%	25.6%	1.2%	38.1%
	(2) Female	Count	48	209	11	268	
		% of Total	11.1%	48.3%	2.5%	61.9%	
	Total	Count	97	320	16	433	
		% of Total	22.4%	73.9%	3.7%	100.0%	

The data reveals that both male and female students predominantly experience moderate burnout, with a higher percentage of women (48.3%) compared to men (25.6%) reporting moderate burnout. This suggests that women may face more sustained academic pressure, possibly due to societal expectations and additional responsibilities. Although high burnout is relatively rare, women exhibit a slightly higher rate (2.5%) than men (1.2%), indicating a greater susceptibility to severe burnout. Men, on the other hand, report higher levels of low burnout (11.3%) compared to women (11.1%), potentially due to better coping mechanisms or differences in emotional processing. Female students' higher burnout levels can be linked to issues like self-efficacy, confidence deficits, and societal pressure, with many expressing doubts about their effectiveness and experiencing motivational deficits. This combination of factors contributes to increased emotional exhaustion and burnout among women in EFL contexts.

Meanwhile, the cross-tabulation data highlights the relationship between socioeconomic status and burnout among EFL students. Among those from lower socioeconomic backgrounds, 24.0% experience low burnout, 72.1% face moderate burnout, and 3.8% report high burnout. In contrast, students from middle to upper socioeconomic backgrounds show 20.9% with low burnout, 75.6% with moderate burnout, and 3.6% with high burnout. Despite slightly lower percentages of low burnout in more affluent students, the overall pattern of moderate burnout is prevalent in both groups, indicating that burnout is a common issue across socioeconomic statuses. The higher proportion of moderate burnout in lower socioeconomic students suggests that financial stress may compound academic challenges, leading to increased burnout.

When examining the intersection of gender and socioeconomic status, some interesting patterns emerge. Among males from lower SES, 63 individuals (30.3%) are in the middle burnout category, followed by 24 individuals (11.5%) in the low burnout category and only 2 individuals (1.0%) in the high burnout category. For females in lower SES, the numbers are slightly higher, with 87 individuals (41.8%) in the middle burnout category, 26 individuals (12.5%) in the low burnout

category, and 6 individuals (2.9%) in the high burnout category. In the middle to upper SES group, 48 males (21.3%) fall into the middle burnout category, 25 males (11.1%) are in the low burnout category, and 3 males (1.3%) are in the high burnout category. For females in the same SES group, the distribution shifts significantly, with 122 individuals (54.2%) in the middle burnout category, 22 individuals (9.8%) in the low burnout category, and 5 individuals (2.2%) in the high burnout category. These patterns suggest that females, regardless of SES, are more likely than males to report burnout, particularly in the middle and high categories. This indicates a potential compounding effect of gender on burnout experiences, with females being more susceptible across all socioeconomic levels.

## **Discussion**

### *Gender Differences among Burnout in EFL Learners*

Burnout is a significant issue among EFL (English as a Foreign Language) learners, and gender plays a crucial role in how this phenomenon manifests. The study reveals that female students tend to experience higher levels of burnout compared to male students, particularly in the moderate and high categories. Female students often exhibit higher levels of emotional exhaustion, a core component of burnout (Dyrbye et al., 2021). This can be partly explained by the emotional intensity that women are socialized to experience and express, particularly in academic settings (Pan & Ricamora, 2023). Research by Khairani & Sano (2020) suggests that women are more prone to internalize stress and anxiety, which can lead to higher emotional exhaustion. In the context of EFL learning, the pressure to excel in a non-native language, coupled with the fear of failure, exacerbates this emotional burden for female students (Wu & Halim, 2024). Moreover, women are often more susceptible to perfectionism, which can increase the risk of burnout (Raspopovic, 2015). Studies such as those by Visvalingam et al., (2024) have demonstrated that women are more likely to set excessively high standards for themselves, leading to greater frustration and exhaustion when they feel they are not meeting these standards.

Cultural norms also contribute to the gender disparity in burnout. In many societies, women are expected to juggle multiple roles, including academic responsibilities, familial obligations, and, in some cases, caregiving duties (Artz et al., 2022). This can lead to chronic stress, as women may feel pressured to meet both personal and societal expectations. Research by Hijazi et al., (2023) highlights how women often face greater societal pressure to succeed academically, which can result in overwork and burnout. In the context of EFL learning, this pressure may be even more pronounced. Women might feel compelled to excel in English due to its status as a global language, which is often linked to career success. The added weight of societal expectations can thus increase burnout levels, particularly among female students who internalize these pressures.

Self-efficacy, or the belief in one's ability to succeed, plays a vital role in academic achievement (Basileo et al., 2024). Female students often report lower levels of self-efficacy in language learning compared to their male peers, as seen in studies by Aprianto et al., (2024). This lack of confidence can increase feelings of inadequacy and stress, leading to burnout. For example, female students may doubt their ability to perform well in English classes, which in turn triggers emotional exhaustion and depersonalization—a common symptom of burnout (Pham Thi & Duong, 2024). A lack of self-confidence might also contribute to a heightened sense of academic pressure, as female students may perceive even routine tasks as overwhelming. The cyclical nature of low self-efficacy, where poor performance results in diminished confidence and further hinders performance, can create a reinforcing loop that deepens burnout (An & Tao, 2024). Research has shown that men and women often employ different coping strategies in response to academic stress (Vacchi et al., 2024). For instance, male students may be more likely to adopt problem-focused coping mechanisms, such as seeking practical solutions to academic challenges, when female students, on the other hand, tend to rely more on emotion-focused coping strategies, which involve managing their feelings rather than directly addressing the problem (Pathak, 2024). While emotion-focused coping can be effective in some situations, it can also contribute to prolonged stress and burnout if the underlying issues remain unresolved (Conte et al., 2024).

These findings suggest that female students may have lower confidence compared to their male peers, even though their academic performance was equal to or better than that of the males (Cotner

et al., 2020);(Nissen & Shemwell, 2016)). In contrast, male undergraduate students reported a high level of confidence, despite the studies being conducted in various cultural contexts. Some previous studies have suggested that the confidence gap between males and females could be related to hormonal differences between genders. Booth et al., (1999) found that men produce seven times more testosterone than women. Medical research indicates that higher testosterone levels can positively affect mood and reduce depression (Booth et al., 1999), which may contribute to men's higher self-confidence compared to women (Cotner et al., 2020).

Additionally, women are generally more likely to express their emotions openly, which can lead to a higher reported incidence of burnout symptoms (Reeves et al., 2024). In contrast, male students may underreport their emotional exhaustion due to cultural norms that discourage men from expressing vulnerability (Biswajit, 2024). Men are often socially portrayed as strong, making it difficult for them to cry or show sadness, as this might be seen as a threat to their masculinity. This societal expectation may lead men to conceal their true emotions, fearing that expressing negative feelings could make them appear weak. A narrative study by McKenzie et al., (2018) supports this, highlighting that men often feel uncomfortable sharing their negative emotions. Consequently, male students in this study may have reported higher protective factor scores, despite lower academic performance compared to female students, due to not being fully open about their emotions. On the other hand, women are often seen as more sensitive, making it more socially acceptable for them to express negative (Sharman et al., 2019). The higher level of burnout among female students in this study might reflect their perceived freedom to openly express negative emotions.

Motivation plays a critical role in language learning, and female students are more likely to experience motivational deficits in challenging academic environments (Znanetska, 2020). Research by Horrocks & Hall, (2024) indicates that women often face greater motivational challenges, particularly when they feel overwhelmed by academic demands. This lack of motivation can exacerbate burnout, as students may struggle to maintain the necessary energy and enthusiasm for their studies. In EFL learning, where progress can be slow and challenging, a lack of motivation can lead to disengagement and emotional exhaustion (Khudhur Omar, 2023). Female students may experience a greater sense of failure when they do not meet their own or others' expectations, further deepening their burnout (Fiorilli et al., 2022).

### Socioeconomic status among burnout in EFL Learners

Building on the findings section, previous research has consistently highlighted a significant correlation between socioeconomic status (SES) and burnout levels, particularly in educational contexts. While the data from this study indicates a slight discrepancy in burnout levels between students from lower and middle-to-upper socioeconomic backgrounds, a review of the broader literature suggests that SES can play a pivotal role in influencing stress responses and academic exhaustion among students. Burnout, as defined by Weiss, (2023), is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. In educational settings, burnout manifests as feelings of chronic stress, mental fatigue, and detachment from academic work, which can severely impair a student's ability to succeed (Nazri et al., 2023). Socioeconomic status is often considered a key factor in shaping these experiences, as it influences access to resources, social support, and overall life stress, all of which can contribute to the development of burnout(Super et al., 2024). Previous studies, such as those by Eames et al., (2024), have indicated that students from lower socioeconomic backgrounds are more vulnerable to academic stress and burnout due to a combination of factors such as limited access to resources, additional responsibilities at home, and financial uncertainty. These students often experience more persistent stressors outside of the academic environment, which can compound their feelings of exhaustion and overwhelm (Kaggwa et al., 2021). These stressors can include financial instability, lack of access to academic resources (such as private tutoring or educational materials), and responsibilities outside of school, such as part-time work or caregiving duties, which create double burden for lower SES students and leading to higher levels of stress (Buffel et al., 2024). This aligns with the current study's finding that 72.1% of students from lower socioeconomic backgrounds experience moderate burnout, compared to 75.6% of students from middle-to-upper socioeconomic backgrounds.

However, research also suggests that economic disadvantage does not always equate to higher



burnout levels across the board. As seen in this study, 24.0% of lower socioeconomic students report low burnout levels—slightly higher than their wealthier peers (20.9%). This finding may seem counterintuitive, but it can be explained by the concept of "resilience" in educational psychology. Resilience studies have shown that students from lower socioeconomic backgrounds can develop coping mechanisms that help them manage stress more effectively despite facing greater challenges (Cheng & Chen, 2024). These students may have stronger support networks, or they may have developed adaptive strategies to manage their academic stress, regardless of their socioeconomic status, which may account for the relatively high percentage of low burnout in this group (Abdillah & Marleni, 2023).

While economic hardship can contribute to stress, other studies have suggested that financial stability alone does not completely insulate students from burnout (Walker, 2018). For example, research by (Xia, 2023) indicates that students from wealthier backgrounds often face pressure to meet high academic expectations, both self-imposed and externally driven. This may explain why 75.6% of students from middle-to-upper socioeconomic backgrounds report moderate burnout levels, which is slightly higher than the 72.1% reported by their lower socioeconomic peers. Although wealthier students may have access to better academic resources, the pressure to excel can also drive them toward exhaustion, especially in highly competitive academic environments like EFL learning (Ma, 2024). Moreover, the finding that 3.8% of lower socioeconomic students and 3.6% of middle-to-upper socioeconomic students experience high burnout suggests that extreme burnout can affect students regardless of their financial standing. Previous research by Z. Liu et al., (2023) supports this, indicating that severe academic burnout often stems from a combination of factors—intense workload, emotional exhaustion, and perceived inadequacy—rather than socioeconomic status alone. In this sense, both groups may be equally susceptible to high burnout when these factors are present, irrespective of their economic conditions.

## CONCLUSIONS AND SUGGESTION

This study illuminates the impact of gender and socioeconomic status (SES) on burnout among English as a Foreign Language (EFL) learners. The findings indicate that female students and those from lower SES backgrounds experience elevated levels of burnout. Female learners are more likely to experience emotional exhaustion, which may be attributed to societal expectations and heightened emotional investment in their studies. Students from lower socioeconomic status (SES) backgrounds report slightly elevated levels of moderate and high burnout, though the differences observed in comparison to their wealthier counterparts are not pronounced. Both groups, regardless of socioeconomic status, encounter significant burnout, underscoring the necessity for targeted interventions.

Practical implications of this research suggest that educators and policymakers should develop gender-sensitive support systems that recognize the unique pressures faced by female students, such as emotional exhaustion driven by perfectionism and societal expectations. Programs could include mentorship initiatives that provide female students with role models and guidance, helping them navigate academic pressures while fostering resilience and self-efficacy. Additionally, creating inclusive learning environments that promote open discussions about burnout can reduce stigma and encourage students to seek help without fear of judgment. Resources should also be allocated to support lower SES students, such as providing financial assistance for educational materials and opportunities for part-time work that accommodates their academic schedules.

It is recommended that future research investigate the impact of specific societal expectations and academic pressures on female students' burnout and examine the role of resilience and coping mechanisms among lower SES students. Further studies could also examine the effectiveness of gender-sensitive and socioeconomic-targeted interventions and explore how these approaches can be integrated into educational practices to better support diverse student populations. Understanding these dynamics can help formulate comprehensive strategies that bolster academic success and emotional health for diverse EFL student populations. Overall, addressing the multifaceted nature of burnout through practical interventions can lead to improved academic outcomes and a healthier

learning environment for all EFL learners.

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## REFERENCES

- Abdillah, H. Z., & Marleni. (2023). Cultivating Resilience: A Key to Managing Academic Stress among Health Students in Online Learning. *Psyche 165 Journal*, 16(4), 304–309. <https://doi.org/10.35134/jpsy165.v16i4.294>
- Abraham, A., Chaabna, K., Sheikh, J. I., Mamtani, R., Jithesh, A., Khawaja, S., & Cheema, S. (2024). Burnout increased among university students during the COVID-19 pandemic: a systematic review and meta-analysis. *Scientific Reports*, 14(1), 1–11. <https://doi.org/10.1038/s41598-024-52923-6>
- An, S., & Tao, S. (2024). English as a foreign language teachers' burnout: The predictor powers of self-efficacy and well-being. *Acta Psychologica*, 245, 104226. <https://api.semanticscholar.org/CorpusID:268535074>
- Aprianto, D., Agus Syahid, & Abdussamad, Z. (2024). Examining the Correlation among Motivation, Self-efficacy, and English Language Proficiency (ELP) across Gender. *Journal of Language and Literature Studies*, 4(2), 277–295. <https://doi.org/10.36312/jolls.v4i2.1899>
- Artz, B., Kaya, I., & Kaya, O. (2022). Gender role perspectives and job burnout. *Review of Economics of the Household*, 20(2), 447–470. <https://doi.org/10.1007/s11150-021-09579-2>
- Basileo, L. D., Otto, B., Lyons, M., Vannini, N., & Toth, M. D. (2024). The role of self-efficacy, motivation, and perceived support of students' basic psychological needs in academic achievement. *Frontiers in Education*, 9. <https://doi.org/10.3389/educ.2024.1385442>
- Biswajit, D. (2024). Unraveling Male Inexpressiveness: Causes, Effects and Strategies For Abrogation. *International Journal For Multidisciplinary Research*, 6(2), 1–15. <https://doi.org/10.36948/ijfmr.2024.v06i02.18446>
- Booth, A., Johnson, D. R., & Granger, D. A. (1999). Testosterone and men's depression: the role of social behavior. *Journal of Health and Social Behavior*, 40(2), 130–140.
- Buffel, V., Wouters, E., Cullati, S., Tancredi, S., Eeckert, N. Van, & Velde, S. Van De. (2024). The relation between economic stressors and higher education students' mental health during the initial outbreak of the COVID-19 pandemic. *Scandinavian Journal of Public Health*, 52(3), 316–328. <https://doi.org/10.1177/14034948231185938>
- Chen, J., Li, D., & Liu, K. (2024). Unraveling cognitive constraints in constrained languages: a comparative study of syntactic complexity in translated, EFL, and native varieties. *Language Sciences*, 102, 101612. <https://doi.org/https://doi.org/10.1016/j.langsci.2024.101612>
- Cheng, C., & Chen, S. (2024). Unmasking resilience in the 'New Normal': coping with unprecedented stressors amid COVID-19. *Current Opinion in Behavioral Sciences*, 55. [10.1016/j.cobeha.2023.101346](https://doi.org/10.1016/j.cobeha.2023.101346)
- Cong, Y., Yang, L., & Ergün, A. L. P. (2024). Exploring the relationship between burnout, learning engagement and academic self-efficacy among EFL learners: A structural equation modeling analysis. *Acta Psychologica*, 248.
- Conte, E., Cavioni, V., & Ornaghi, V. (2024). Exploring Stress Factors and Coping Strategies in Italian Teachers after COVID-19: Evidence from Qualitative Data. *Education Sciences*, 14(2). <https://doi.org/10.3390/educsci14020152>
- Cotner, S., Jenö, L. M., Walker, J. D., Jørgensen, C., & Vandvik, V. (2020). Gender gaps in the performance of Norwegian biology students: the roles of test anxiety and science confidence. *International Journal of STEM Education*, 7(1), 55. <https://doi.org/10.1186/s40594-020-00252-1>
- Dyrbye, L. N., West, C. P., Herrin, J., Dovidio, J., Cunningham, B., Yeazel, M., Lam, V., Onyeador, I. N., Wittlin, N. M., Burke, S. E., Hayes, S. N., Phelan, S. M., & van Ryn, M. (2021). A Longitudinal Study Exploring Learning Environment Culture and Subsequent Risk of Burnout Among Resident Physicians Overall and by Gender. *Mayo Clinic Proceedings*, 96(8), 2168–2183. <https://doi.org/10.1016/j.mayocp.2020.12.036>
- Eames, D., Thomas, S., Norman, K., Simanton, E., & Weisman, A. (2024). Sociodemographic disadvantage in the burden of stress and academic performance in medical school: implications for diversity in medicine. *BMC Medical Education*, 24(1). <https://doi.org/10.1186/s12909-024-05263-y>
- Fiorilli, C., Barni, D., Russo, C., Marchetti, V., Angelini, G., & Romano, L. (2022). Students' Burnout at University: The Role of Gender and Worker Status. *International Journal of Environmental Research and Public Health*, 19(18). <https://doi.org/10.3390/ijerph191811341>
- Gao, X. (2023). Academic stress and academic burnout in adolescents: a moderated mediating model. *Frontiers in*

*Psychology*, 14(June), 1–11. <https://doi.org/10.3389/fpsyg.2023.1133706>

- Ghorbani, M. R., & Golparvar, S. E. (2020). Modeling the relationship between socioeconomic status, self-initiated, technology-enhanced language learning, and language outcome. *Computer Assisted Language Learning*, 33(5–6), 607–627. <https://doi.org/10.1080/09588221.2019.1585374>
- Hijazi, B., Iqbal, M. Z., & Shams, J. A. (2023). Analyzing Gender and Location Disparities in Burnout among Secondary Students in Punjab: A Quantitative Investigation. *Annals of Human and Social Sciences*, 4(IV). [https://doi.org/10.35484/ahss.2023\(4-iv\)48](https://doi.org/10.35484/ahss.2023(4-iv)48)
- Horrocks, P. T. M., & Hall, N. C. (2024). Social Support and Motivation in STEM Degree Students: Gender Differences in Relations with Burnout and Academic Success. *Interdisciplinary Education and Psychology*, 4(1), 1–21. <https://doi.org/10.31532/interdiscipeducpsychol.4.1.001>
- Kaggwa, M. M., Kajjimu, J., Sserunkuma, J., Najjuka, S. M., Atim, L. M., Olum, R., Tagg, A., & Bongomin, F. (2021). Prevalence of burnout among university students in low- And middle-income countries: A systematic review and meta-analysis. *PLoS ONE*, 16(8 August), 1–21. <https://doi.org/10.1371/journal.pone.0256402>
- Khairani, Y., & Sano, A. (2020). The Differences of Burnout among Students based on Gender. *RedWhite Press*, 5(1), 104–110. <http://creativecommons.org/licenses/by-nc/4.0>
- Khudhur Omar, T. (2023). Students' Challenges in EFL Speaking Classrooms. *Academic Journal of Nawroz University*, 12(4), 957–963. <https://doi.org/10.25007/ajnu.v12n4a1809>
- Lee, M., Lee, K. J., Lee, S. M., & Cho, S. (2020). From emotional exhaustion to cynicism in academic burnout among Korean high school students: Focusing on the mediation effects of hatred of academic work. *Stress and Health*, 36(3), 376–383. <https://doi.org/10.1002/smi.2936>
- Li, C., Zhang, L. J., & Jiang, G. (2024). Conceptualisation and measurement of foreign language learning burnout among Chinese EFL students. *Journal of Multilingual and Multicultural Development*, 45(4), 906–920. <https://doi.org/10.1080/01434632.2021.1931246>
- Lin, L., Zhang, J., Dai, X., Xiao, N., Ye, Q., & Chen, X. (2022). A Moderate Duration of Stress Promotes Behavioral Adaptation and Spatial Memory in Young C57BL/6J Mice. *Brain Sciences*, 12(8). <https://doi.org/10.3390/brainsci12081081>
- Liu, L., Saeed, M. A., Abdelrasheed, N. S. G., Shakibaei, G., & Khafaga, A. F. (2022). Perspectives of EFL learners and teachers on self-efficacy and academic achievement: The role of gender, culture and learning environment. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.996736>
- Liu, Z., Xie, Y., Sun, Z., Liu, D., Yin, H., & Shi, L. (2023). Factors associated with academic burnout and its prevalence among university students: a cross-sectional study. *BMC Medical Education*, 23(1), 1–13. <https://doi.org/10.1186/s12909-023-04316-y>
- Ma, Y. (2024). The impact of academic self-efficacy and academic motivation on Chinese EFL students' academic burnout. *Learning and Motivation*. doi: 10.1016/j.lmot.2024.101959
- Madigan, D. J., & Curran, T. (2021). Does Burnout Affect Academic Achievement? A Meta-Analysis of over 100,000 Students. *Educational Psychology Review*, 33(2), 387–405. <https://doi.org/10.1007/s10648-020-09533-1>
- McKenzie, S. K., Collings, S., Jenkin, G., & River, J. (2018). Masculinity, Social Connectedness, and Mental Health: Men's Diverse Patterns of Practice. *American Journal of Men's Health*, 12(5), 1247–1261. <https://doi.org/10.1177/1557988318772732>
- Miao, L. (2022). Intercultural foreign language teaching and learning in higher education contexts. *Language and Intercultural Communication*, 22(1), 100–101. <https://doi.org/10.1080/14708477.2022.2030951>
- Murugova, E., Semenova, M., Shirina, E., & Gaybaryan, O. (2022). Linguistic and socio-cultural adaptation of foreign students at university. *E3S Web of Conferences*, 363. <https://doi.org/10.1051/e3sconf/202236304031>
- Nabilah Nurfaidah, & Kusdiyati, S. (2024). Hubungan Tipe Kepribadian dengan Academic Burnout pada Mahasiswa Keperawatan di Kota Bandung. *Bandung Conference Series: Psychology Science*, 4(1), 653–658. <https://doi.org/10.29313/bcsp.v4i1.10383>
- Nascimento, C. M., & Costa, P. S. (2024). Analysis of the prevalence and impact of burnout in university professors. *Seven Editora*, 183–193. <https://sevenpublicacoes.com.br/editora/article/view/5058>
- Nazri, N. A., Muhammad, F. H., Sheikh Suhaimi, S. N. Y., Hasnor, H. N., Saidin, N., Ngah, S., & Rahmat, N. H. (2023). What is The Relationship between Burnout and Motivation to Learn? *International Journal of Academic Research in Business and Social Sciences*, 13(8), 1538–1555. <https://doi.org/10.6007/ijarbss/v13-i8/17735>
- Nissen, J. M., & Shemwell, J. T. (2016). Gender, experience, and self-efficacy in introductory physics. *Phys. Rev. Phys. Educ. Res.*, 12(2), 20105. <https://doi.org/10.1103/PhysRevPhysEducRes.12.020105>
- Oteir, I., & Al-Otaibi, A. (2022). The Relationship between the Socio-Economic Status and Students' Speaking

- Anxiety: A Study of Saudi EFL Students. *International Journal of Innovative Research and Scientific Studies*, 5(4), 409–418. <https://doi.org/10.53894/ijirss.v5i4.1005>
- Pan, J., & Ricamora, M. S. (2023). Research on the Causes and Countermeasures of Learning Burnout among Junior High School Girls. *World Journal of Educational Research*, 10(1), p74. <https://doi.org/10.22158/wjer.v10n1p74>
- Pathak, A. N. (2024). A Comparative Study of Male and Female Undergraduate Learners Receiving Varied Instructional Teaching Strategies with Respect to Academic Anxiety. 9(6), 3062–3069.
- Pham Thi, T. D., & Duong, N. T. (2024). Investigating learning burnout and academic performance among management students: a longitudinal study in English courses. *BMC Psychology*, 12(1), 1–15. <https://doi.org/10.1186/s40359-024-01725-6>
- Ramin, Akbari., Ahmad, Reza, Eghtesadi. (2017). Burnout Coping Strategies among Iranian EFL Teachers. 6(2):179-192. doi: 10.22108/ARE.2017.21346
- Raspopovic, M. (2015). The connection between perfectionism and anxiety in university students. *Sanamed*, 10(3), 199–203. <https://doi.org/10.5937/sanamed1503199r>
- Rawis, J. A. M., Lengkong, Andriessanto C., Mahama, I. C., Christopher, L., & Iddo, P. (2024). BURNOUT IN MEDICAL STUDENT: LITERATURE REVIEW. *Syntax Literate: Jurnal Ilmiah Indonesia*, 9(5). doi: 10.36418/syntax-literate.v9i5.15145
- Reeves, A., Pattinson, M., & Butavicius, M. (2024). The sleepless sentinel: factors that predict burnout and sleep quality in cybersecurity professionals. *Information & Computer Security*. <https://api.semanticscholar.org/CorpusID:268922036>
- Reima, Al-Jarf. (2024). A Model for Alleviating Work Pressures and Enhancing Teachers' Resilience. *Journal of psychology and behavior studies*, 4(1):94-103. doi: 10.32996/jpbs.2024.1.11
- Rifat, A. H., & Bithi, I. J. (2023). *Mental Stress, Socioeconomic Status, and Academic Performance: A Critical Analysis among University Students of Bangladesh* (D. Ortega-Sánchez (ed.); p. Ch. 8). IntechOpen. <https://doi.org/10.5772/intechopen.109795>
- Sharman, L. S., Dingle, G. A., Baker, M., Fischer, A., Gračanin, A., Kardum, I., Manley, H., Manokara, K., Pattara-Angkoon, S., Vingerhoets, A. J. J. M., & Vanman, E. J. (2019). The Relationship of Gender Roles and Beliefs to Crying in an International Sample. *Frontiers in Psychology*, 10, 2288. <https://doi.org/10.3389/fpsyg.2019.02288>
- Super, J., Vinnicombe, Z., Little, M., Gunnee, M., & Anakwe, R. (2024). The effect of socioeconomic status and training programmes on burnout in postgraduate trainees in the United Kingdom: a cross-sectional analysis. *Postgraduate Medical Journal*, 100(1183), 305–308. <https://doi.org/10.1093/postmj/qgad145>
- Vacchi, O. G. B., Menis, D., Scarpis, E., Tullio, A., Piciocchi, B., Gazzetta, S., Del Pin, M., Ruscio, E., Brusaferrero, S., & Brunelli, L. (2024). Stress management: how does the academic staff cope with it? a cross-sectional study at the university of Udine. *BMC Public Health*, 24(1), 1–12. <https://doi.org/10.1186/s12889-024-18935-7>
- Valieva, F., Sagimbayeva, J., Kurmanayeva, D., & Tazhitova, G. (2019). The socio-linguistic adaptation of migrants: The case of oralman students' studying in kazakhstan. *Education Sciences*, 9(3). <https://doi.org/10.3390/educsci9030164>
- Vansoeterstede, A., Cappe, E., Ridremont, D., & Boujut, E. (2024). School burnout and schoolwork engagement profiles among French high school students: Associations with perceived academic stress and social support. *Journal of Research on Adolescence*. <https://doi.org/10.1111/jora.12991>
- Visvalingam, S., Magson, N. R., Newins, A. R., & Norberg, M. M. (2024). Going it alone: Examining interpersonal sensitivity and hostility as mediators of the link between perfectionism and social disconnection. *Journal of Personality*, 92(4), 1024–1036. <https://doi.org/10.1111/jopy.12868>
- Wahyuni, S., Agustina, H., & Munthe, R. A. (2023). The Relationship between Personality and Academic Burnout: Exploring the Influence of Psychological Well-Being and Demographic Factors. *International Journal of Islamic Educational Psychology*, 4(2), progres. <https://doi.org/10.18196/ijiep.v4i2.18687>
- Walker, P. (2018). *Understanding Burnout in Undergraduate Students: The Role of Social Media*.
- Weiss, J. N. (2023). "Burnout". In *Physician Crisis: Why Physicians Are Leaving Medicine, Why You Should Stay, and How To Be Happy* (pp. 31–34). Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-27979-9\\_8](https://doi.org/10.1007/978-3-031-27979-9_8)
- Wu, L., & Halim, H. B. A. (2024). Task complexity and foreign language writing emotions as predictors of EFL writing performance. *Frontiers in Education*, 9(March). <https://doi.org/10.3389/feduc.2024.1323843>
- Xia, T. (2023). Effects of Academic Expectations Stress on Academic Achievements. *Lecture Notes in Education Psychology and Public Media*, 13(1), 153–159. <https://doi.org/10.54254/2753-7048/13/20230872>
- Ye, Y., Huang, X., & Liu, Y. (2021). Social support and academic burnout among university students: A moderated mediation model. *Psychology Research and Behavior Management*, 14, 335–344. <https://doi.org/10.2147/PRBM.S300797>

- Yoo, H. J., & Marshall, D. T. (2024). Exploring graduate students' perceived helplessness, self-efficacy, social support and satisfaction. *Studies in Graduate and Postdoctoral Education, ahead-of-p*(ahead-of-print). <https://doi.org/10.1108/SGPE-12-2023-0113>
- Znanetska, O. (2020). The Role Of Motivation In Learning Foreign Language. *The American Journal of Social Science and Education Innovations, 02*(12), 14–21. <https://doi.org/10.37547/tajssei/volume02issue12-04>