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Research Paper: The Relationship between Personality Traits and Public Speaking Anxiety among Mizan - Aman Health Science College Students, South West Ethiopia

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Abstract

Objectives: This study aimed to assess the relationship between the Big Five personality traits and public speaking anxiety among students at Mizan-Aman Health Science College, South West Ethiopia.

Methods: An institutional-based cross-sectional survey design was employed. A stratified random sampling technique was used to select respondents from each stratum, resulting in a total of 320 participants (154 males and 166 females). Data were collected using the Personal Report of Public Speaking Anxiety (PRPSA) scale and the Big Five Inventory (BFI). Percentages, independent sample t-tests, one-way ANOVA, Pearson correlation, and multiple linear regression analyses were conducted to address the study's specific objectives.

Results: The analysis revealed that the prevalence of public speaking anxiety was 28.1%. The mean public speaking anxiety scores for female students (M = 54.15, SD = 10.99) were significantly higher than those of male respondents (M = 47.90, SD = 11.04), t (318) = -5.07, p = 0.01. Significant mean differences were found between students with different year level. A moderate to low negative correlation was observed between the Big Five personality traits and public speaking anxiety, except for agreeableness, which showed a positive correlation. Multiple linear regression analysis indicated that 20.5% of the variance in public speaking anxiety could be explained by personality traits.

Conclusions: The findings suggest that the Big Five personality traits significantly correlate with public speaking anxiety. Gender difference was also reported. Thus, special consideration should be given to female students in speaking classes.

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1. Introduction

Social phobia, commonly referred to as social anxiety disorder (SAD), is one of the most prevalent anxiety disorders and is characterized by an intense fear of social situations in which individuals may be negatively evaluated (American Psychological Association, 2022). Recent surveys indicate that approximately 7% of adults in the United States experience SAD in a given year, with onset commonly occurring during adolescence (American Psychological Association, 2022). One subtype relevant to academic settings is performance-only SAD, defined in the DSM-5-TR as fear confined to performance situations such as giving speeches or presenting to an audience (American Psychiatric Association, 2022).

Public speaking, a common academic performance activity, involves the structured delivery of information to a live audience with the intent to inform, persuade, or engage listeners. As described in APA (2022) public speaking anxiety is characterized by **marked fear/anxiety, fear of negative evaluation, avoidance or endurance, disproportionate fear and significant distress/Impairment which must last for not less than six months**. These symptoms had made it to be part of SAD. When individuals experience an excessive fear response during public speaking situations, it is referred as public speaking anxiety (PSA) or gloss phobia, a phenomenon now increasingly recognized as a public health and educational concern. More recent global studies have documented high PSA prevalence among university students, including 61% reporting moderate to high PSA in the Philippines (Del Villar & Tan, 2023), 46% and over 45% among medical students in Sub-Saharan Africa (Ahmed et al., 2025).

Beyond prevalence, emerging research examines psychological correlates of PSA. The Big Five personality trait model continues to be the leading framework for understanding personality–behavior associations in higher education, with studies showing that traits such as neuroticism are positively associated with PSA, whereas extraversion and openness tend to predict lower PSA levels (Wanying et al., 2024). Personality traits play a substantial role in academic experiences and performance-related tasks, including speaking, presenting, and group collaboration.

The rise of student-centered pedagogy including case-based learning, discussions, seminars, simulations, and project-based assessments requires learners to articulate ideas clearly and confidently in front of peers and evaluators. However, many students still struggle with performance-related anxiety. Recent findings suggest that even individuals who are socially comfortable may experience heightened fear when required to speak publicly, often resulting in avoidance behaviors, cognitive impairments, and physical anxiety symptoms (Christy et al., 2021). Studies also indicated that students with PSA may also experience reduced academic engagement, absenteeism before presentations, diminished confidence, and poorer academic outcomes (Maryam et al., 2024).

In Ethiopia and much of Sub-Saharan Africa, research on PSA remains limited

despite its relevance for academic success and professional readiness. Recent evidence shows that PSA substantially disrupts learning and contributes to impaired academic performance and reduced career self-efficacy (Ahmed et al., 2025). The scarcity of studies examining PSA among Ethiopian college students, along with inconsistent findings on gender differences and personality correlates, highlights the need for further investigation. Therefore, the present study aims to address the following questions: To what extent is public speaking anxiety prevalent among nursing students at Mizan-Aman College of Health Sciences? Is there a significant gender difference in PSA among these students? Do PSA levels differ significantly across year levels? What is the relationship between the Big Five personality traits and PSA among these students?

2. Methods

2.1 Research Design, Population and Sampling

An institution based cross-sectional survey design was employed. Because such type of research designs gives an advantage of studying prevalence and look at the relationship between different variables at the same time. In addition, in such type of research designs data can be collected from a cross section of a population in a short time and then results could be generalized to represent the entire population of the study. A quantitative research approach was adopted because each specific objectives of the study was analyzed through statistical expressions. The study was conducted in south western Ethiopia, South Nations and Nationalities and people region, (SNNPR) Bench Maji Zone, Mizan-Aman College of Health Science. The college is among the four government health science colleges in south nation nationalities and people region. It was about 550 km far from Addis Ababa. The target population of the study was 803 males and 887 females a total of 1690 nursing students of Mizan-Aman College of health science comprising those from midwifery, compressive nursing, laboratory, Health informatics and pharmacy departments. **Inclusion criteria:** Those students who were willing and no current sicknesses were included. **Exclusion criteria:** Those students who were experiencing sum discomforts or emotional disturbance or even sick were excluded for the sake of minimizing careless ratings.

Stratified random sampling was used in selecting the samples for this study. This was helped the researcher to get representative sample from each strata. Though there were many means of stratification, gender and year level were the basis for forming strata in this study. Stratifications were also further made on the basis of the field of study. This was done to get representative and proportional samples.

The sample estimates according to Yamane's simplified formula for proportion was: - $n = \frac{N}{1 + N(e)2}$ = 323 from the total 1690 students. From the total population the total number of first year, second year and third year students was 750(345 male & 405 females), 560 (291 male& 270 female) and 379(167 males & 212 females) respectively.

Applying proportional allocation formula for each strata $ni = \left(\frac{n}{N}\right) Nini = \left(\frac{n}{N}\right) Ni$ proportional sample was allocated. Finally systematic random sampling was employed to select actual samples.

2. 2. Instruments

The study had employed two self-report questioner guides in collecting data from the respondents. These were the Personal Report of Public Speaking Anxiety (PRPSA) and the Big Five Inventories (BFI).

Personal Report of Public Speaking Anxiety (PRPSA): is a self-report instrument developed by McCroskey (1970) to assess individuals' levels of anxiety specifically associated with public speaking situations. Theoretically it is grounded in communication apprehension theory and basically focuses on cognitive, emotional, and physiological responses experienced by the respondents before and during public speaking. The original PRPSA consists of **34 items**, each reflecting feelings or reactions related to public speaking anxiety. Items are rated on a **5-point Likert-type scale**, typically ranging from *strongly disagree* to *strongly agree*. Some items are reverse-scored to control for response bias for instance (item 6, I have no fear of making classroom presentations, item 7, Although I am nervous just before starting a presentation, I soon settle down after starting and feel calm and comfortable, item 11, I feel relaxed while making presentation, item 12, I enjoy preparing for classroom presentation etc.) are reversely coded. The total scores are computed by summing all item responses, with higher scores indicating greater levels of public speaking anxiety. This instrument is **self-administered** and can be completed individually or in group settings. Administration typically requires **10–15 minutes**, and the instrument may be administered in paper-and-pencil format or electronically. Clear instructions are provided to respondents to answer based on their usual feelings toward public speaking situations rather than a single speaking event. It was originally developed for use with **college and university students.**

For the purpose of this study the PRPSA with -34 items which was reduced in to 18 items by Mörtberg et al. (2018) was used. The psychometric properties of PRPSA were tested in a Sample of University Students in Sweden. This brief version was employed because it was more recent, valid and reliable. The estimate for the scale was found to be α .90. Moreover, it could be easily administered than the 34 item PRPSA scale.

The Big five inventory (BFI): The **Big Five Inventory (BFI)** is a self-report personality assessment developed by John and Srivastava (1999) to measure the five major dimensions of personality: **Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience**. The instrument is based on the Five-Factor Model of personality and was designed to provide a brief yet reliable assessment of broad personality traits. The Big Five Personality Inventory (BFI) is a very commonly used tool in psychology researches to measure five dimensions of personality. It is 5-point Likert scale ranging from 1-5 (where 1 indicates = disagree strongly and 5 = indicates agree strongly). It

includes 44 statements that ask the respondents to indicate the extent to which they agree or disagree with a particular statement. These statements are related to five dimensions of personality that are, extroversion = 8 items (2 items reversely coded); agreeableness = 9 items, (4 items reversely coded); conscientiousness = 9 items (4 items reversely coded); neuroticism = 8 items (3 items reversely coded); and openness = 10 items (2 items reversely) coded. The alpha estimates for this tool is above .75 in many translations. According to Amente and Zeleke (2024) the Amharic version of the big five personality dimensions were found to have very good to excellent alpha level. Extroversion (.83), Neuroticism (.86) Conscientiousness (.86), openness (.88), agreeableness (.77) was reported in their study. This instrument can be **self-administered** and is suitable for individual or group administration. Completion time is approximately **5–10 minutes**, making it appropriate for research contexts where time constraints are a concern.

2.3. Procedure

Three data collectors were recruited. Then necessary orientations have been provided for them for two continuous days. Students were asked for their willingness to fill the questionnaires. The data collecting tools were translated in to Amharic by two language professionals and finally translated in to English to see its consistency. The two questionnaires (PRPSA and the big five inventory) items were attached together to facilitate the coding system. After that, respondents were randomly selected and filled the questionnaires in their free classes in an organized classroom setting. While filling the questionnaires students were helped by the data collectors. Finally, the questionnaires were collected and submitted to the researcher so that the researcher organized and coded the questionnaires to facilitate for data entry and analysis.

Both descriptive and inferential statistical methods were employed throughout the process of data analysis. Under descriptive statistics percentage and Pearson correlation coefficients were used and inferential statistics such as independent t-test and multiple regression analysis and one-way ANOVA were used to test statistical significance of the variables in the study. Percentage was used to describe the prevalence of public speaking anxiety among students; Pearson correlation was employed to see the correlation between each big five personality Traits and public speaking anxiety. For further analysis of the statistical significance of the predicting values of the big five traits on the variance in public speaking anxiety, multiple regression analysis was employed. The independent t-test was employed to test significant mean difference between male and female students while the one-way ANOVA was used to test between group mean differences among first second and third year student groups in their public speaking anxiety scores. SPSS version 25 was used to carry out the analysis. Written informed consent form was signed before the actual data collection. Participants were informed about the purpose of the study and encouraged for voluntary participation. Respondents were informed about the objectives of the study and asked for

voluntary participation in filling the questionnaires. The right to withdraw anytime without any consequence was also clearly stated. The proposal was approved by college research standing committee that it has no significant harm on human subjects.

3. Results

From a total of 323 expected respondents 320 were participated in filling the questionnaire yielding 99.07 % response rate. Among the respondents 154(48.1 %) were males while the remaining 166(51.9%) were females. From the total men respondents, 73(44%) were from first year, 30(19.5%) from second year and 30(19.5%) were participated based on their proportion. Regarding female respondents 67(43.5%) were from first year, 57(37%) from second year and 41 (25%) from third year group were involved. Thus, a total of 141 (44%) first year, 108(33.8%) second year and 71 (22.2%) third year respondents were participated in the study.

In assessing the prevalence of public speaking anxiety among the students, their score on the self-reported questionnaire frequencies and percentages were computed based on the cutoff point. The analysis revealed that public speaking anxiety was prevalent among the students. From the respondents, the scores of 230 (71.9%) reported no anxiety towards public speaking and 90(28.1%) respondents reported anxiety level above the cutoff point. From this, it could be concluded that as to other group of students in other fields, approximately one third of the participants had experienced high level of anxiety with regard to public speaking.

Table 1

An independent t-test for significant mean differences

Levine's test for equality of variance			t-test for equality of means				
	F	Sign	t	Df	sign (2, tailed)	MD	standard. error
Equal variance assumed	.000	1.000	-5.072	318	.000**	-6.25	1.23
Equal variance not assumed			-5.071	315.98	.000**	-6.25	1.23

The total number respondents in this study was 320 and from these 154 (48.1%) were males while 166 (52.9%) were female respondents. With respect to assessing the difference between male and female respondents on public speaking anxiety score, mean analysis was conducted. An examination of the group means indicated that the mean public speaking anxiety scores of female students (M=54.15, SD=10.99) was higher than male students (M=47.90, SD=11.04). An independent sample t-test was conducted to evaluate whether the observed mean difference between male and female respondents was statistically significant. The analysis revealed that the observed mean differences between the two groups (male & female respondents) was

statistically significant t (*318*) =*-5.072*, *p= 0.01*).

Table 2

Mean difference between respondents from different groups in terms of year level

Groups by year level	N	mean	std. deviation
1st year groups	141	51.2553	12.33428
2nd year groups	108	53.500	10.54009
3rd year groups	71	47.3521	9.95719
Total	320	51.1469	11.43992

As illustrated in table, 2 above mean analysis was conducted to assess the difference between respondents with different year level (1st, 2nd&3rd) with respect to their public speaking anxiety. The analysis result showed that the mean PSA score of participants from third year groups year group (*M=47.35, SD=11.43*) was lower than respondents from first year group (*M=51.25, SD= 12.33*) and second year groups (*M= 53.50, SD= 10.54*).

To check that the observed mean difference between the groups was statistically significant, one-way ANOVA test was conducted. The analysis of variance showed that respondents with varying year groups significantly differs in their public speaking anxiety *F (2,317) =6.40, p = .002,).*

Table 3

Multiple comparison tests

(I) groups	(j)groups	MD	Standard. error	P value
1stYear groups	2nd year groups	-2.24	1.43	.265
	3rd year groups	3.90	1.63	.046
2nd year groups	1st year groups	2.24	1.43	.265
	3rd year groups	6.14	1.71	.001**
3rd year groups	1st year groups	-3.90	1.63	.046*
	2nd year groups	-6.14	1.71	.001**

*Significance at 0.05 alpha level, ** significance at 0.01 alpha level

As shown in table 3 above, to see between which groups statistically significant difference exist, multiple comparison or Post Hoc test was conducted using Turkey's test. The test revealed that public speaking anxiety scores of third year group (*M=47.35,*

SD=9.95) was significantly less than that of first year groups (*M=51.25, SD=12.33*) and second year groups (*M=53.500, SD=10.54*) *p=.001*. The public speaking anxiety scores of first year and second year groups do not differ significantly *P=0.265*.

Table 4

Relationship between the big five personality variables and public speaking anxiety

Variables	(r)	P-value
Extraversion	-412**	0.001
Openness	-395**	0.001
Agreeableness	0.016	0.781
Conscientiousness	-221**	0.001
Neuroticism	0.244**	0.001

** Correlation is significant at the 0.01 level (2 -tailed)

As seen in table 4 above, Pearson correlation revealed that among the five big personality variables, the four were found to have significant positive and negative correlation with public speaking anxiety at 0.05 levels except for agreeableness personality variable. However, all of the correlations would be considered moderate to low based on the criteria.

Pearson correlation revealed that extraversion (*r = -412, p=0.001*) and Openness (*r=-395, p=0.001*) personality variable had a moderate negative correlation with public speaking anxiety and the correlation was also found to be statistically significant at 0.05 alpha level. Conscientiousness had a weak negative correlation (*r = -221, P=0.001*), and neuroticism had also a weak positive correlation with public speaking anxiety (*r=.244, p=0.001*), finally agreeableness personality variable had a very weak positive correlation with PSA and the relationship was not statistically significant at 0.05 alpha level (r= 0.016, P=.781).

Table 5

Regression coefficients

Model	β	Standard. Error	Beta	t	P	tolerance	BIF
1(constant)	71.303	5.814		12.243	.000		
Extroversion	-.436	.125	-248	-3.480	.001	.499	2.004
Openness	-.273	.119	-168	-2.295	.002	.471	2.124
Conscientious	-.126	.104	-067	-1.215	.067	.834	1.198
Neuroticism	.210	.131	.088	1.604	.110	.839	1.191

To see the combined predicting effect of the four personality variables that had shown significant correlation with PSA (Extraversion, openness, Conscientiousness, & Neuroticism) multiple linear regression analysis was conducted after checking the

underlying assumptions. The analysis revealed that 20.5 % of the variance in public speaking anxiety could be explained by difference in the personality variables score (R^2 =.205). The P-value for the overall model was F (4,315) =20.258, p= .001. Therefore, it could be understood that the amount of variance explained by the personality variables was statistically significant at 0.05 levels.

Extroversion and openness to experience were found to be statistically significant an independent predictor of public speaking anxiety at 0.05 level (p=0.001 & 0.022 respectively). The two variables (conscientiousness & neuroticism) were not significant an independent predictor of public speaking anxiety (p= 0.22 & 0.11) respectively.

4. Discussions

The prevalence of public speaking anxiety according to this study was 28.1%, which is consistent with several recent studies of student populations. The observed rate is similar to pooled estimates of social-performance anxiety among students: a recent systematic review and meta-analysis of Ethiopian students reported a pooled social-phobia prevalence of 26.8% (Melkam et al., 2023), and larger multi-site student surveys and university samples show that public-speaking and presentation situations are among the most anxiety-provoking learning contexts for students. (Lintner & Belovecová, 2024). Although lifetime estimates for clinically diagnosed social anxiety disorder (SAD) in population surveys vary, epidemiological reviews report lifetime prevalence estimates that are substantially lower than the prevalence of situation-specific fears in student samples, and clinical SAD often co-occurs with performance fears (Lintner & Belovecová, 2024).

The obtained prevalence (28.1%) was somewhat higher than some published estimates from other countries (e.g., ranges reported across surveys), which may indicate that a portion of the sampled students experienced SAD symptoms or elevated performance-specific fears. Cross-national differences in reported public-speaking anxiety can reflect cultural norms, pedagogical approaches, familiarity with public-speaking tasks, measurement instruments, and sampling differences — factors highlighted in recent work comparing student samples across settings. (Lintner & Belovecová, 2024; Melkam et al., 2023).

The study found a significant gender difference in public speaking anxiety, with females reporting higher anxiety, which aligns with recent university-based research showing that female students often report greater public-speaking and social-performance anxiety than male students (Lintner & Belovecová, 2024; Melkam et al., 2023). International student studies and recent multi-site investigations similarly report higher mean PSA (public speaking anxiety) among women, although some individual studies find no difference — likely reflecting sample, cultural, and measurement variability (Lintner & Belovecová, 2024). The higher scores among female students may reflect a combination of higher social-evaluation sensitivity, socialization patterns,

and context-specific expectations; Ethiopian-context syntheses also identify being female as a consistent correlate of higher social phobia among students. (Melkam et al., 2023).

One-way ANOVA analysis revealed significant differences between year groups: students in the third year scored lower on public speaking anxiety than first- and second-year students, while first- and second-year groups did not differ significantly. This pattern is consistent with the idea that increased exposure and practice (more presentations, projects, seminars and clinical/practical tasks) reduce situation-specific anxiety over time. Recent large student samples show study level / year of study is a predictor of PSA, with students further along in their programs often reporting lower PSA — likely because of greater exposure, habituation, and developed presentation skills. (Lintner & Belovecová, 2024). Behavioral principles (gradual exposure, systematic desensitization) and modern interventions (including internet-based and VR exposure) are highlighted in the literature as effective ways to reduce public speaking anxiety through repeated, supported exposure. (Lim et al., 2022; Reeves et al., 2021).

The study found significant correlations between four personality dimensions and public speaking anxiety: extraversion, openness, and conscientiousness were negatively correlated with PSA, while neuroticism was positively correlated; agreeableness showed no significant correlation. The pattern and direction the findings indicated that extraversion, openness and conscientiousness can be taken as protective factors while neuroticism could be risk factor. These findings are consistent with recent empirical findings linking Big Five traits to anxiety in student samples. Several large, recent studies report negative associations of extraversion, conscientiousness (and sometimes openness) with anxiety, and a positive association of neuroticism with anxiety; mechanisms such as self-efficacy and academic burnout appear to mediate these relationships. (Wu et al., 2024).

Multiple linear regression in this study indicated that personality traits explained 20.5% of the variance in public speaking anxiety. This magnitude is consistent with recent work showing personality explains a meaningful but partial portion of variance in anxiety outcomes (with remaining variance attributable to situational, developmental, and environmental factors), and highlights that personality is an important contributor but not the sole determinant of PSA (Wu et al., 2024; Lintner & Belovecová, 2024). Extraversion and openness to experience emerged as independent negative predictors of PSA in the study; this may reflect the greater social approach tendencies and tolerance for new experiences that accompany these traits, which facilitate interaction and reduce fear in performance contexts (Wu et al., 2024).

Arranging frequent speaking task and ensuring the participation of all students in the class room would be very important. Avoiding/minimizing/ presentation tasks with predetermined presenters to encourage students practice interns before the actual

presentation in their groups would see as systematic desensitization technique to help students gradually reduce their level of anxiety. Balance individual and group presentation tasks throughout the courses so that all students can have a chance to face public speaking challenges. Give high attention and facilitate separate public presentation practice for female students so that their high level of anxiety towards PSA might be reduced. Teachers need to appear friendly to their students and encourage their little attempts considering experience issue, discouragements and negative words during presentation session may increase (anticipate) the level of anxiety for next presentations.

5. Conclusion

Based on the findings of the study, it could be concluded that the prevalence of public speaking anxiety among students of Mizan-Aman health Science College was found to be high. Female students had reported relatively higher level of public speaking anxiety than males. Year of stay in college has significant contribution in reducing the level of public speaking anxiety among the students. Participants who score high in extroversion and openness to experience traits had reported low level of public speaking anxiety. Therefore, educators should give high attention for female students and introverts to increase their confidence in speaking classes.

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Conflict of interest

The author does not have any conflict of interest

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