

Academic Performance and Its Associated Factors Among Pawe Health Science College Students in Benishangul-Gumuz Regional State, North-West Ethiopia

Dereje Getahun Gashaye^{1,*}, Tamiru Bogale Jemberu², Amare Kiros Asfaw², Solomon Debela Bekeko², Dinknesh Beyene Feleke²

Abstract

Background: Academic performance can be defined as the degree to which a teacher, an institution, or a student meets short-term or long-term learning objectives. Continuous assessments and the student's overall cumulative grade point average (CGPA) are typically used to measure academic achievement. **Objectives:** To assess academic performance and its associated factors among students, in the case of Pawe Health Science College, Benishangul-Gumuz Regional State, North-West Ethiopia, 2025. **Methods:** An institution-based cross-sectional study was employed from March to May 2025. The sample size was calculated using the single population proportion formula, resulting in a total of 348 participants. Data were entered into EpiData version 4.1 and subsequently analyzed using SPSS version 25. To examine the relationships between dependent and independent variables, both bivariate and multivariable logistic regression analyses were performed. Statistical significance was determined using an adjusted odds ratio (AOR) with a 95% confidence interval at a p-value of less than 0.05. **Results:** Out of the planned sample, 348 students participated in the study, yielding a response rate of 98.6%. The overall magnitude of good academic performance among Pawe health science students was 37.7%, with a 95% CI of (2.663–2.748, Attend classes regularly [COR = 1.499, 95% CI = 1.166–1.928], Prioritize attending class [AOR = 3.186, 95% CI = 1.828–12.276], Attend class when interactive [AOR = 4.886, 95% CI = 1.302–13.329] and the timely completion of assignments [AOR = 1.268, 95% CI = 1.010–5.594], was significantly associated with poor academic performance. **Conclusion:** This study found that nearly three-fourths of the participants demonstrated poor academic performance. **Recommendation:** Therefore, it is essential for the appropriate authorities to actively improve both the physical conditions and the study habits of the students, which includes ensuring they have adequate time for studying. Furthermore, the institution should offer adequate support to foster a favorable learning environment and improve the effectiveness of the teaching–learning process.

*Author for Correspondence

Dereje Getahun Gashaye
E-mail: dereho21@gmail.com

¹Lecturer, Department of Nursing, Pawe Health Science College, Pawe District, Ethiopia

²Researcher, Department of Nursing, Pawe Health Science College, Pawe District, Ethiopia

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INTRODUCTION

Academic performance describes the degree to which educational objectives are achieved by students, teachers, or institutions over both short-term and long-term periods. It is commonly evaluated using continuous assessments and students' cumulative grade point average (CGPA). The academic achievement of students represents a crucial component of the educational process [1].

The entire educational system is centered on the fact that, according to reports, a student's academic performance influences the degree of success or failure that an academic institution experiences and is a top concern for both institutions and instructors. Learning establishments are worthless without students. The primary source of any educational setup is the students; fast educational reform is a worthwhile human endeavor these days. It is crucial for increasing human wealth and for fostering character development and performance that raises people's standards of living [2]. Student performance has a significant impact on the quality of education that results in high-caliber graduates. As a result, they emerged as leaders of the country and played a vital role in its development, serving as the backbone of the nation [2, 3].

The social and economic progress of a nation is closely associated with the academic achievements of university students [4]. Outstanding academic performance and student accomplishments result in the production of the highest caliber graduates who can serve as future leaders and supply the nation with an effective labor force [5].

Because student academic outcomes have received considerable attention from educators and researchers, the factors that enhance academic performance and those that lead to poor academic achievement within educational institutions have been extensively studied [6]. According to research, students with strong academic records and accomplishments typically have greater career prospects, higher incomes, more opportunities for professional growth and promotion, and better benefits at work [6, 7]. Additionally, students who succeed academically typically have higher levels of confidence and self-esteem, experience less anxiety and despair, are more involved in society, and are less prone to engaging in social ills, such as drug and alcohol misuse [8].

The results of this study will make it easier for students to improve their academic performance and achieve higher academic results. Students in different universities expect to improve their performance to succeed in exams in the quest for high grades, and such students always try to attend classes. Many students have attempted to improve their performance using the available facilities and resources. Many factors, such as facilities and funding resources, affect students' performance and educational realization in their respective universities. Moreover, it is highly demanding and preferred for students to enhance their academic performance through information and communication services, which can assist many of these students in interacting with their peers and institutions throughout the world [3].

METHODS

Study Area and Period

Pawe Health Science College is the only government college in the Benishangul-Gumuz region, Metekel Zone, and Pawe Woreda. The college is located approximately 550 km northwest of Addis Ababa and 420 km northeast of Assosa. Pawe Health Science College is staffed by 144 staff members, comprising 56 academics and 88 administrative staff. The college has six departments: health extension, nursing, midwifery, laboratory technician, pharmacy technician, and health information technician.

Study Period

The study was conducted between March 1, 2025, and May 30, 2025, at Pawe Health Science College.

Study Design

An institution-based cross-sectional study was employed.

Source Population

All students in the Pawe Health Science College intake for the 2022–2025 academic year.

Study Population

All randomly selected students from the selected department and the class year of 2022–2025.

Inclusion

Students who have enrolled in their Current Level IV and who have a cumulative GPA.

Exclusion Criteria

- Students from the 2017 E.C. intake.
- Students who were seriously ill during the data collection period.

Sample Size and Sampling Procedure

The total sample size of 348 was considered based on the following assumption: Prevalence of P-value considering 70.5%. The study was conducted at Dire Dawa University, College of Health Sciences, in 2024 [9], using a 95% confidence level, a 5% margin of error, and a 10% allowance for non-response.

Sampling Technique and Procedure

A computer-generated random sampling technique was employed to select 348 participants based on their ID. The first 509 students' IDs were entered into SPSS, and 348 participants were randomly selected.

Data Collection Procedure

Data were collected using a self-administered questionnaire and document review. The questionnaire consisted of 37 items divided into four sections: student, environmental, school, and teacher-related factors. Each section includes several subcategories.

Data Processing and Analysis

Prior to analysis in SPSS version 25, the data were coded, cleaned, recoded, and entered into EpiData version 4. The association between the dependent and independent variables was first assessed using bivariate logistic regression. To control for potential confounders, variables with a p-value <0.25 in the bivariate analysis were included in the multivariable logistic regression model, and those with a p-value ≤ 0.05 in the multivariable model were considered statistically significant.

A multicollinearity test was conducted to evaluate the extent to which the predictor variables were correlated. The variance inflation factor (VIF) values ranged from 1.02 to 1.07, all below the threshold of 2, and the tolerance values ranged from 0.9 to 0.974, all above 0.2, indicating no multicollinearity issues.

To assess the internal consistency of the Likert scale items for each domain, a reliability analysis was performed, yielding an overall Cronbach's alpha of 0.79, demonstrating the acceptable reliability of the measurement tool.

Data Quality Control

To ensure the quality of data, the data collection tool was reviewed by an expert group, and one day of training for data collectors was given before the beginning of the actual data collection day. All filled questionnaires were checked daily by the supervisors immediately after each session of data collection for completeness. Prior to analysis, the data were carefully cleaned to ensure completeness and then entered using EpiData to reduce entry errors.

Study Variable**Dependent Variable**

- Academic performance

Independent Variable

- *Sociodemographic factors*: Age, gender, marital status, residence, department, source of year income, year level
- *Teacher factor*: Enthusiasm/patience, use of facilitation skills, technology/teaching aids, assessment method, communication skills
- *Student factors*: Attendance rate, study habits
- *School factors*: Classroom size, internet access, skill laboratory, library, accommodation, instructional language, lighting, and boredom

Operational Definitions**Academic Performance**

Academic performance refers to the cumulative grade point average (CGPA) achieved by students during their academic studies.

- Poor academic performance: Students with a cumulative grade point average of less than 3.00 (CGPA < 3.00).
- Good academic performance: Students with a cumulative grade point average of 3.00 or higher (CGPA ≥ 3.00).

Ethical Consideration

Ethical approval was obtained from the Research Ethics Review Committee of Pawi Health Science College, and verbal informed consent to participate was obtained after explaining the objectives. All study participants were informed about the purpose of the study, and any additional information was provided as needed, verbally and in written form. Participants were guaranteed the confidentiality of the information collected; completed questionnaires were stored securely, and they were also told that their nonparticipation would not harm their study.

Dissemination of Findings

The findings of this study will be disseminated from the Pawi Health Science College community. Efforts will be made to present this study at a national scientific conference and publish it in international journals.

RESULT

A total sample size of 348 students was selected to participate in this study, and the response rate was 98.6 %. Finally, 342 questionnaires were considered valid.

Sociodemographic Characteristics of the Study Participants

Concerning the sociodemographic characteristics of the respondents, over half (212, 62%) were government employees. The majority of students, 245 (71.6%), were aged between 21 and 24 years, with a mean age of 22.29 ± 2.274 years. Regarding the field of study, 92 (26.9%) were nursing students, while 81 (23.7%) were enrolled in pharmacy. In terms of marital status, most participants, 262 (76.6%), were single. Among the 342 study participants, the majority (304, 88.9%) reported that their families were the primary source of income. (Table 1).

Magnitude of Academic Performance

The study found that 37.7% of students demonstrated good academic performance, with a 95% confidence interval of 2.663–2.748, whereas 62.3% of students exhibited poor academic performance.

The mean CGPA was 2.990 (SD ± 0.482), ranging from a minimum of 2.00 to a maximum of 4.00. (Figure 1).

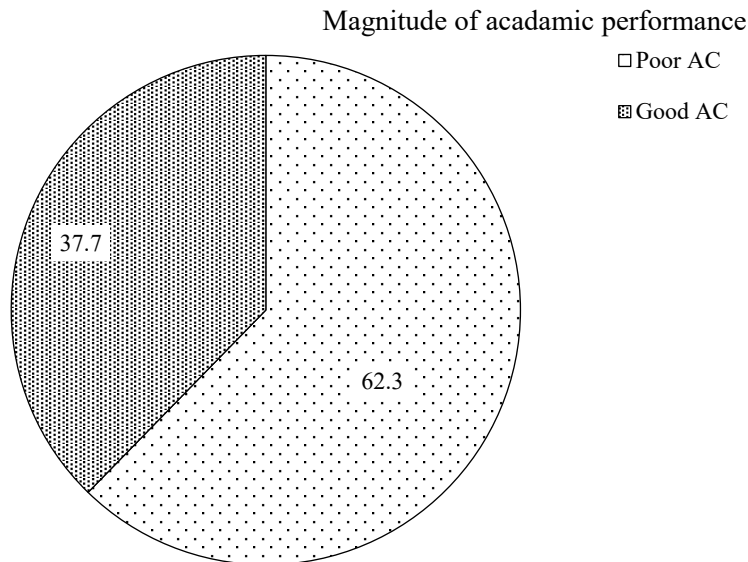


Figure 1. Magnitude of academic performance of the study participants for the study on academic performance among Pawe Health Science College students at North-West Ethiopia, Benishangul-Gumuz Region in 2025.

Table 1. Sociodemographic characteristics of the study participants for the study on academic performance among Pawe Health Science College students at North-West Ethiopia, Benishangul-Gumuz Region in 2025 (N = 342).

Characteristics		Frequency	Percent
Gender	Male	116	33.9
	Female	226	66.1
Age	<=20 years	67	19.6
	21–24 years	245	71.6
	>=25 years	30	8.8
Category	Governmental	212	62.0
	Private	130	38.0
Marital Status	Single	262	76.6
	Married	80	23.4
Department	Nursing	81	23.7
	Midwifery	38	11.1
	Pharmacy	92	26.9
	Laboratory	38	11.1
	Health Extension	67	19.6
	Health Information Technician	11	3.2
	EMS	15	4.4
Source of Income	Private	32	9.4
	Family	304	88.9
	Others	6	1.8

Table 1. Measures of factors influencing attending class among the study participants for the study on academic performance among Pawe Health Science College students at North-West Ethiopia, Benishangul-Gumuz Region in 2025.

Attending class	Sometimes		Always		Mean	SD
	Frequency	%	Frequency	%		
I attend all my classes regularly.	71	20.8	271	79.2	1.79	0.406
I prioritize attending class over other activities.	85	24.9	257	75.1	1.75	0.433
I skip classes when I feel unmotivated.	214	62.6	128	37.4	1.37	0.485
I attend class because I find the material engaging.	83	24.3	259	75.7	1.76	0.492
I miss classes due to poor time management.	180	52.6	162	47.4	1.47	0.500
Fear of missing important information motivates me to attend.	97	28.4	245	71.6	1.72	0.451
I avoid classes when I feel unprepared.	153	44.7	189	55.3	1.55	0.498

Table 2. Assessment of routines, time management, and academic discipline among the study participants for the study on academic performance among Pawe Health Science College students at North-West Ethiopia, Benishangul-Gumuz Region in 2025.

Study Habits	Sometimes		Always		Mean	SD
	Frequency	%	Frequency	%		
I follow a consistent daily study schedule.	109	31.9	233	68.1	1.68	0.467
I complete assignments ahead of deadlines.	99	28.9	243	71.1	1.71	0.454
I get distracted easily while studying.	64	18.7	278	81.3	1.81	0.391
I review class notes after each lecture.	107	31.3	235	68.7	1.69	0.464
I procrastinate on studying until the last minute.	138	40.4	204	59.6	1.60	0.491
I use tools like planners or apps to organize my tasks.	115	33.6	226	66.1	1.67	0.478
I allocate time for breaks during study sessions.	127	37.1	215	62.9	1.63	0.484

Class Attendance of the Participants

In this study, 257 (75.1%) of the students reported prioritizing class attendance over other activities. More than half of the participants, 214 (62.6%), occasionally skipped classes when feeling unmotivated, and 180 (52.6%) sometimes missed classes due to poor time management. The majority, 245 (71.6%), were consistently motivated by the fear of missing important information. Additionally, over half of the students, 189 (55.3%), avoided attending classes when they felt unprepared.

Overall, the mean attendance score among all participants was 1.62, with scores ranging from 1 to 5. Furthermore, 114 students (42.1%) demonstrated good class attendance (Table 2).

Study Habits of the Participants

In this study, more than half of the study participants, 233 (68.1%), always followed a consistent daily study schedule, and about 243 (71.1%) of the participants always completed assignments ahead of deadlines. The majority of the study participants, 278 (81.3%), always get distracted easily while studying. Regarding reviewing class notes, the majority of the respondents, 235 (68.7%), always reviewed class notes after each lecture, and 204 (59.6%) of the respondents always procrastinated on studying until the last minute. Most of the respondents, 226 (66.1%), consistently used tools such as planners or apps to organize their tasks. Similarly, 215 (62.9%) of the participants regularly scheduled breaks during their study sessions. Overall, the mean score for study habits among all participants was 2.68, with a range of 1 to 5. Additionally, the study found that 113 students (44.0%) demonstrated good study habits (Table 3).

Table 3. School factors among the study participants for the study on academic performance among Pawe Health Science College students at North-West Ethiopia, Benishangul-Gumuz Region in 2025.

Characteristics		Frequency	Percent
Using the learning facilities provided by the college (library)?	Yes	156	45.6
	No	186	54.4
Using the learning facilities provided by the college (computer Lab)?	Yes	148	43.3
	No	194	56.7
Using the learning facilities provided by the college (Blackboard)?	Yes	193	56.4
	No	149	43.6
Do the classroom size and lighting provided by the college meet the physical requirements?	Yes	160	46.8
	No	182	53.2
Easily access the internet in college?	Yes	173	50.6
	No	169	49.4
Adhere to the instructional language of the college	Yes	176	51.5
	No	166	48.5
Adequate accommodation is provided by the college (food, water, and dorm)	Yes	152	44.4
	No	190	55.6

School-Related Factors

Regarding school-related factors, the majority of the respondents, 186 (54.4%), did not use the library provided by the college, and 194 (56.7%) of the respondents did not use a computer. The majority of the respondents, 193 (56.4%), reported that the instructors were used to board, and more than half, 182 (53.2%), of the respondents responded that the classroom size and lighting met the physical requirements. In terms of accessing the internet in college, around half of the respondents, 173 (50.6%), reported that they could easily access the internet in the college. More than half, 176 (51.5%) of the respondents adhered to the instructional language of the college. In addition to that, this study revealed that the magnitude of good adherence to instructional language was 79 (61.2%) (Table 4).

Teacher-Related Factors

In this study, more than half of the study participants, 185 (54.1%) and 194 (56.7%), responded that their instructors were patient when explaining difficult concepts and enthusiastic about the subject, respectively. The majority of the respondents, 195 (57%), responded that the assessments used in the course (e.g., quizzes, essays, presentations) were well-aligned with the learning objectives. Regarding instructors' interactive activities, 201 (58.8%) of the participants reported that instructors used interactive activities (e.g., group work, discussions, and hands-on projects) in class.

Additionally, more than half of the respondents, 194 (56.7%) and 197 (56.3%) of the participants, reported that their teachers incorporated new teaching techniques and used visual aids (e.g., slides, diagrams, videos) to enhance understanding, respectively. In terms of the teachers' supervision and support, 192 (56.1%) of the respondents reported that the teacher's supervision and support for students was satisfactory. In addition, 212 (62%) of the respondents reported that the interaction between the teachers and students was satisfactory. Regarding the teacher's assessment method, the majority of the respondents, 208 (60.8%), responded that the teacher's assessment method (practical and written) was satisfactory (Table 5).

Factors Associated with Academic Performance

Logistic regression analysis was performed to test the effect of different independent variables on academic performance. Accordingly, prioritizing attending class, attending classes regularly, attending class when interactive, and timely completing assignments were significantly associated with academic performance (Table 6).

Table 4. The teacher factor among the study participants for the study on academic performance among Pawi health science students at North-West Ethiopia, Benishangul-Gumuz Region in 2025.

Characteristics		Frequency	Percent
My instructor is patient when explaining difficult concepts	Yes	185	54.1
	No	157	45.9
My instructor is enthusiastic about the subject	Yes	194	56.7
	No	148	43.3
Are the assessments used in this course (e.g., quizzes, essays, presentations) well-aligned with the learning objectives?	Yes	195	57.0
	No	147	43.0
Does the instructor use interactive activities (e.g., group work, discussions, and hands-on projects) in class?	Yes	201	58.8
	No	141	41.2
Does the teacher incorporate new teaching techniques learned through professional development into her/teaching?	Yes	194	56.7
	No	148	43.3
Does the instructor use visual aids (e.g., slides, diagrams, videos) to enhance understanding?	Yes	193	56.4
	No	149	43.6
Is the teacher's supervision and support for students satisfactory?	Yes	192	56.1
	No	150	43.9
Is the interaction between the teacher and students satisfactory?	Yes	212	62.0
	No	130	38.0
Is the teacher's assessment method (practical and written) satisfactory?	Yes	208	60.8
	No	134	39.2

Table 6. Bivariate and multivariate logistic regression analysis of academic performance and its associated factors among Pawe Health Science College students in North-West Ethiopia, Benishangul-Gumuz Region in 2025 (N = 342).

Variable		Academic performance		COR (95% CI)	AOR (95% CI)	P-Value
		Poor AP	Good AP			
Gender	Male	57 (49.1%)	59 (50.9%)	0.434 (0.274–0.687)	0.498 (0.248–0.998)	0.00
	Female	156 (69%)	70 (31.0%)			
Attend all classes regularly	Sometimes	56 (78.9%)	15 (21.1%)	1	1.636 (0.466–5.745)	0.00
	Always	157 (57.9%)	114 (42.1%)	1.499 (1.166–1.928)		
Prioritize attending class over other activities	Sometimes	69 (81.2%)	16 (18.8%)	1	3.186 (1.828–12.267)	0.00
	Always	144 (56.0%)	113 (44.0%)	1.695 (1.309–2.195)		
Skip classes	Sometimes	123 (57.5%)	91 (42.5%)	1	0.229 (0.077–0.681)	0.00
	Always	90 (70.3%)	38 (29.7%)	0.762 (0.608–0.955)		
Attend class when interactive	Sometimes	61 (73.5%)	22 (26.5%)	1	4.886 (1.302–18.329)	0.00
	Always	152 (58.7%)	107 (41.3%)	1.333 (1.054–1.685)		
Complete assignments	Sometimes	70 (70.7%)	29 (29.3%)	1	3.513 (0.926–13.329)	0.00
	Always	143 (58.8%)	100 (41.2%)	1.268 (1.010–1.594)		
Procrastinate on studying	Sometimes	71 (51.4%)	67 (48.6%)	0.685 (0.550–0.853)	0.415 (0.242–0.711)	0.00
	Always	142 (69.6%)	62 (30.4%)	1		
Computer Lab availability	Yes	83 (56.1%)	65 (43.9%)	0.629 (0.404–0.978)		0.04
	No	130 (67.0%)	64 (33.0%)	1		
Instructional language	Yes	97 (45.5%)	79 (61.2%)	0.529 (0.339–0.826)		0.01
	No	116 (54.5%)	50 (38.8%)	1		
Patient instructor	Yes	104 (48.8%)	81 (62.8%)	0.565 (0.362–0.884)		0.01
	No	109 (51.2%)	48 (37.2%)	1		
Enthusiastic Instructor	Yes	112 (52.6%)	82 (63.6%)	0.636 (0.406–0.995)		0.05
	No	101 (47.4%)	47 (36.4%)	1		
Interaction b/n teacher and students	Yes	119 (55.9%)	93 (72.1%)	0.490 (0.306–0.784)	1.890 (0.900–3.968)	0.00
	No	94 (44.1%)	36 (27.9%)	1		

Prioritizing attending class over other activities was 3.1 times [AOR 3.186, 95% CI = 1.828–12.276] more likely to have good academic performance than students who did not prioritize attending class over other activities. Regarding attending class regularly, students who attended class regularly.

Participants were 1.6 times [AOR 1.636, 95% CI=1.636 (0.466–5.745)] more likely to have good academic performance than those who did not attend class.

Students who were attending class when it was interactive were 4.8 times [AOR 4.88, 95% CI =1.302–18.329] more likely to have good academic performance than those who did not attend class when it was interactive. Regarding the timely completion of assignments, students who were completing their assignments on time were 1.2 times [AOR = 1.268, 95% CI = 1.010–5.594] more likely to have good academic performance than students who were not completing their assignments on time (Table 6).

DISCUSSION

The study results showed that approximately one in three students had good academic performance. This finding was lower than those reported in studies conducted at Gondar (72.5%) [10], Hawassa University (66%) [11], Arba Minch University (52%) [12], and Mizan-Tepi (53.3%) [13]. These differences may be attributed to variations in sample size, student levels, or the measurement tools used to assess academic performance.

Students who attended classes consistently were more likely to achieve good academic performance than those who did not attend regularly. This finding was in line with studies conducted at Nagpur University [14, 15], Tuskegee University [15, 16], Lusaka University in Zambia [17], Iran (18), Sargodha University in India [19], Wollo University [20], and Jimma University [21]. As they attend classes regularly, their skills improve, and they have to resort to studying time before examinations, thus enhancing their academic achievement [22].

Finally, attending class interactively was found to be significantly associated with students' academic performance. This result is consistent with those of studies conducted in India [19], China [23], the Philippines [19], and Jordan [16]. The observed association is supported by evidence emphasizing the benefits of effective resource use, metacognitive awareness, goal setting, continuous assessment, and structured learning environments. Students who participate in interactive classes are better able to regulate their learning processes, contributing to improved academic outcomes [24].

CONCLUSION

In this study, only one-third of the participants had good academic performance. Hence, the academic performance of Pawe Health Science College students was poor. Prioritizing attending class, attending classes regularly, attending class when interactive, and timely completion of assignments were significantly associated with good academic performance.

Recommendation

To Pawe Health Science College

To improve students' academic performance, the college should encourage students to use the library, improve internet access, and provide an adequate and soundproof library to avoid destruction during study.

To Instructors

Instructors should focus on interactive class employment and good class management. It is important to have activities that improve students' academic performance. The assessment technique should be aligned with the course objectives and content.

To the Student

Students should emphasize attending class regularly, give priority to the class over other activities, and submit their assignments in a timely manner to improve their academic performance.

Limitation

This study was cross-sectional, making it difficult to draw long-term conclusions. The results of this study were solely based on quantitative techniques, with no qualitative data used to supplement the findings.

Abbreviations

AP	Academic Performance
BGRS	Benishangul-Gumuz regional state
BGRS	Cumulative grade point average
EFY	Ethiopian Physical Year
GAP	Good academic Performance
HIT	Health information technicians
EMS	Emergency Medical Technicians
PHSC	Pawi Health Science College
SMART	Study Management and Academic Results Test
SPSS	Statistical Package for Social Science

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Declaration

I hereby declare that the information provided above and in the enclosed document is true to the best of my knowledge and belief, and that nothing has been concealed therein. I understand that if the information provided by me is proven to be false. I will have to face punishment as per the law.

Availability of Data and Materials

The source of the data is available to the corresponding author upon reasonable request from the individuals concerned.

Authors' Contributions

For this study, DGG, TBJ, AKA, SDB, and DBF designed the study, wrote the results, and prepared the manuscript. Again, a highly participatory interpretation and analysis of this research finding. All the authors approved the final manuscript of this study.

Ethics Approval and Consent

For this research, ethical clearance was obtained from the Ethical Review Committee of the PHSC in Ethiopia. After a formal letter was written, the study area was started, and verbal consent was obtained from the participants.

Competing

Interests

There are no competing interests among the author and coauthors.

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