Factors Affecting Academic Performance among Nursing Students at Aswan University

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ABSTRACT

Background: Academic performance of nursing students is a critical indicator of educational quality and future professional competence. *Aim:* To identify factors affecting academic performance among nursing students at Aswan University. *Design:* A cross-sectional descriptive study. *Setting:* Faculty of Nursing, Aswan University. *Subjects:* A stratified sampling of 385 nursing students across all academic levels. *Methods:* Data were collected using a web-based questionnaire comprising four sections: personal data, family information, academic factors, and studying habits. *Results:* From all 385 nursing students participated in this study, 76.4% were females, and 23.6% were males. Less than three quarters (73.2%) of them had a high cumulative grade of very good and excellent compared to only 4% who had low cumulative grades (60%- 64%) and 22.8% had a cumulative grade of 65% – 74% (Good). Statistically significant relationships were found between students' cumulative grade and age (p=0.002), chronic disease presence (p=0.033), monthly income (p<0.001), sleep duration (p=0.019), internet use for entertainment (p=0.032), difficulty concentrating during lectures (p=0.048), and classroom interaction (p=0.023). Other factors showed no significant associations. *Conclusion:* Academic performance among nursing students at Aswan University is influenced by socioeconomic status, parental education, inadequate library resources, classroom discomfort, and teacher-related factors including lack of motivation, insufficient preparation, poor punctuality, and limited use of teaching aids. *Recommendations:* Implement targeted interventions to address identified factors, such as improving library resources, enhancing classroom environments, and providing faculty development programs.

Keywords: Academic performance, nursing education, socioeconomic factors, learning environment, Egypt

Introduction

Investing in educational resources emerges as a strategic approach to nurturing human potential, empowering individuals with knowledge, skills, and capabilities essential for personal and organizational effectiveness. Colleges and universities have no worth without students, who are the most essential asset for any

educational institute. The social and economic development of a country is directly linked with student academic achievement. The students' achievement plays an important role in producing the best quality graduates. Therefore, rigorous academic engagement represents a critical pathway for students to cultivate professional competencies, demonstrate potential to prospective employers, and establish a robust foundation for career progression *(Olufemi, Adediran, & Oyediran, 2018)*.

Academic achievement refers to the comprehensive knowledge acquisition, systematically assessed through structured evaluation mechanisms and predefined educational milestones negotiated between instructional professionals and students. It is also defined as the outcome of a variety of psychological, social, and economic aspects that contribute to students' proper development *(Narad & Abdullah, 2016)*. In the field of nursing education, which is challenging and demanding, students are required to master a wide range of theoretical knowledge and practical skills.

The nursing students' academic success is influenced by several mixed factors. These include student factors such as residential area, daily study hours, learning skills, peer influence, gender, age, regular studying, self-motivation, punctuality, class attendance, hard work, and interest in the subject. Teacher factors encompass completion of syllabus, use of teaching-learning materials (TLMs), frequent feedback to students, and providing special attention. Parent factors include socio-economic status, showing concern, and providing academic needs. School factors comprise the availability of textbooks and TLMs, educational environment, socioeconomic background, and institutional support systems *(Arora & Singh, 2017; Abaidoo, 2018)*.

Recent studies have highlighted additional factors that significantly impact nursing students' academic performance. Psychological well-being, including mental health issues such as stress, anxiety, and depression, can severely affect students' academic performance. The COVID-19 pandemic has exacerbated these challenges, necessitating increased focus on mental health support in nursing education *(Savitsky et al., 2020)*. Technology integration has also become crucial, as the rapid digitalization of education has introduced new challenges and opportunities. Students' digital literacy and access to technology have become vital factors in academic success *(Ramos-Morcillo et al., 2020)*.

The quality and quantity of clinical experiences significantly influence nursing students' academic and professional development. Ensuring high-quality clinical placements has become increasingly challenging, especially in the context of global health crises *(Jarvie et al., 2021)*. Cultural competence has emerged as a critical factor in nursing education as healthcare becomes more globalized. Students' ability to understand and respect diverse cultural perspectives can impact their academic performance and future professional success *(Alshammari et al., 2022)*.

Resilience and adaptability have been identified as key factors in nursing students'

success, particularly in light of recent global challenges *(Labrague & De los Santos, 2020).* Additionally, collaborative learning approaches, including peer-to-peer learning, have shown positive impacts on nursing students' academic performance and professional skill development *(Nelwati et al., 2020).*

In the context of Aswan University, these factors interact with unique local challenges and opportunities. Egypt's nursing education landscape presents significant systemic challenges, including severe nursing workforce shortages, limited clinical training infrastructure, and outdated curriculum design. However, Aswan University's strategic location in Upper Egypt also offers unique opportunities for community health interventions and addressing regional healthcare disparities *(Elshokry & Alshowkan, 2021).*

There is a mix of internal and external factors that can influence the academic performance of students, with no single factor standing out as less or more important than the others. More focus should be placed on the factors that are within the control of students and educators. Understanding these factors is crucial for developing effective strategies to enhance student performance and reduce attrition rates in nursing programs. It is critical for young people's successful social development, as students who do well in school have a better chance of adjusting to adulthood and achieving professional and financial success *(Olufemi, Adediran, & Oyediran, 2018).*

The significance of this study lies in its potential to inform evidence-based strategies for enhancing nursing education at Aswan University and similar institutions in developing countries. By identifying the most influential factors affecting academic performance, educators and administrators can develop targeted interventions to support student success, reduce attrition rates, and ultimately improve the quality of nursing graduates entering the healthcare workforce *(Mthimunye & Daniels, 2019).*

This research will contribute to the growing body of knowledge on nursing education in diverse global contexts and provide valuable insights for improving nursing education outcomes in Upper Egypt and beyond.

Subjects and Methods

Study Design: A cross-sectional study design was utilized to identify factors affecting academic performance among nursing students at Aswan University.

Study Setting: The study was carried out at the Faculty of Nursing, Aswan University.

Study Subjects: The study enrolled 385 male and female nursing students during the second semester, spanning from early April to late June 2024.

Sampling Technique: A stratified sampling technique was employed to ensure representative participation across academic levels.

Sample Size: The sample size was calculated using the formula: , n= $\frac{(Z1-\alpha/2)^2.P(1-P)}{d^2}$ where Z1-α/2 at 5% type 1 error (p<0.05) is 1.96, P is the expected proportion in the population based on previous studies, and d is the absolute error or precision. Using P = 0.5 and d = 0.05. Therefore, sample size n= $\frac{(1.96)^2.(0.079)(1-0.079)}{(0.05)^2}$ =384.16 (385) participants.

Level	Total students	Sample students
Level 1	229	79
Level 2	171	59
Level 3	272	94
Level 4	446	154
Total	1118	385

Inclusion Criteria: Nursing students enrolled at Aswan University who agreed to complete the questionnaire.

Methods:

Data Collection: Data were collected using an online questionnaire distributed via Google Forms.

Tool: Data were collected using a web-based questionnaire based on reviewing the recent and relevant literature comprising four sections:

I. Personal data (age, gender, academic level, cumulative grade, presence of chronic disease, residential area and living with the family during study period).

II. Student study habits (number of sleeping hours, study method used, using study aids, presence of rest between study hours, and number of coffee cups consumed per day)

III. Family information (number of family members, father's ag, education level of the father, mother's age, education level of the mother, parents' marriage status and monthly income of the family)

IV. Academic factors (Provision of library books, comfortability of the classroom, difficulty of concentration during lectures, interaction during lectures, and lecturer support provision)

Validity: Content validity was tested and reviewed by a panel of five experts in community health nursing. No modifications were done regarding the expert's panel judgment about the clarity of sentences, appropriateness of its content.

Reliability: Cronbach's alpha reliability for the tool was =0.79.

Pilot Study: The printed questionnaire was distributed on sample 10% (40 student) to assess the clarity and understanding of the questions. There were no changes performed on the questions, so the 40 students were enrolled in the sample size.

Field Work: First step was distributing printed questionnaire on sample 10% (40 student) to assess the clarity and understanding of the questions. Then, Google form structured interview questionnaire was distributed via Whats App and E-mails on students from all levels. the Google form questionnaire included the aim of the study and the consent for participating in the study from each participant. the data were collected over the period of two months from April to June until

fulfilling the sample size. All incomplete questionnaires were discarded.

Data Analysis: Data were categorized, coded, and analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics were employed to characterize the sample and major variables, with results presented in tables and figures.

Ethical Considerations:

Approval from the research ethics committee of the Faculty of Nursing, Aswan University was obtained. Also, approval from the Dean of the Faculty of Nursing for data collection was obtained. Additionally, confidentiality of participant information was maintained throughout the study. Informed consent was obtained from all participants prior to data collection.

Limitations: Disproportionate representation of female participants compared to males due to refusal of many females to participate.

Strengths: This is the first study to examine factors affecting academic performance among nursing students at Aswan University. The study included a diverse sample of nursing students from various backgrounds and health conditions. The research provided valuable insights into the academic performance factors specific to the Aswan University

Results:

Table 1. shows that the participants were 385 nursing students, 76.4% of them were females, and 23.6% were males. More than half (53.6%) of them were aged 21 to 22 years. 27.6% were 21

years, 40% were in level 4, 24.4% were in level 3, 20.4% were in level 1, and 20.4% were in level 2. Regarding cumulative grade, slightly less than three quarters (73.2%) of them had a high cumulative grade of very good and excellent compared to only 4% who had low cumulative grades (60%- 64%) and 22.8% had a cumulative grade of 65% – 74% (Good). In addition, only 8.4% had chronic diseases. Concerning residence, more than half (56.4) of them were living in a village, while 43.6% were in a town, there 77.6% were living with their families during the study.

Table 2. Clarifies students studying habits, more than two thirds (67.6%) of them slept from 5-8 hours, 17.6% slept more than 8 hours, 14.8% sleep 4 hours or less, there were 58.4 were studying only if there was a test, 20.8% studied daily, and 2% don't study at all.

Figure 1. Clarifies the usage of internet by students for study purpose, it showed that 55.6% of students utilized the internet for academic purposes, spending 2-4 hours daily. A smaller segment, 24.4%, dedicates 4-6 hours, while only 8.4% engaged for more than 8 hours.

Figure 2. Shows the usage of internet by students for entertainment purpose, it illustrated that internet 18.4% of students reported using the internet for entertainment for 2-4 hours daily, while 29.6% spent 4-6 hours, and a substantial 28% exceed 8 hours per day.

Table 3. Clarifies that there were 75.2% have from 5-9 members in the family and 13.6% had more than 9 family members. Regarding parents' education, only 8.8% of studied students'

fathers were uneducated, 20.8% had basic education, and 47.6% had high education. on the other hand, only 15.2% of their mothers were uneducated, 25.2% had basic education and 44.4% had high education. Additionally, 89.6% of studied students' parents were living together, 3.6% of them were separated, and 6.8% were widowed.

Table 4. Shows that there was only one third (33.6%) of studied students mentioned that the university library provided them with useful books and helped them in their studies. Also, 30.4% of them mentioned that their classroom was comfortable enough, and 14.8% said the classes were uncomfortable. Worth mentioning also that 35.6% of studied students felt difficulty in concentrating during the lecture, less than half (47.6%) mentioned that they were interacting

during the lecture, and only 26% mentioned that they were getting help from the lecturer when needed.

Table 5. Shows that there was a statistically significant relationship between the cumulative grade and the following factors, the age (p-value = 0.002), the chronic disease (p-value = 0.033) and monthly income (p-value < 0.001).

Table 6. Clarifies that there was a statistically significant relationship between the cumulative grade and sleeping hours (p-value = 0.019), the hours of using internet for entertainment (p-value = 0.032), feeling difficulty in concentrating during the lecture (p-value = 0.048), the interaction during lecture (p-value = 0.023), but there was no significant association with other factors.
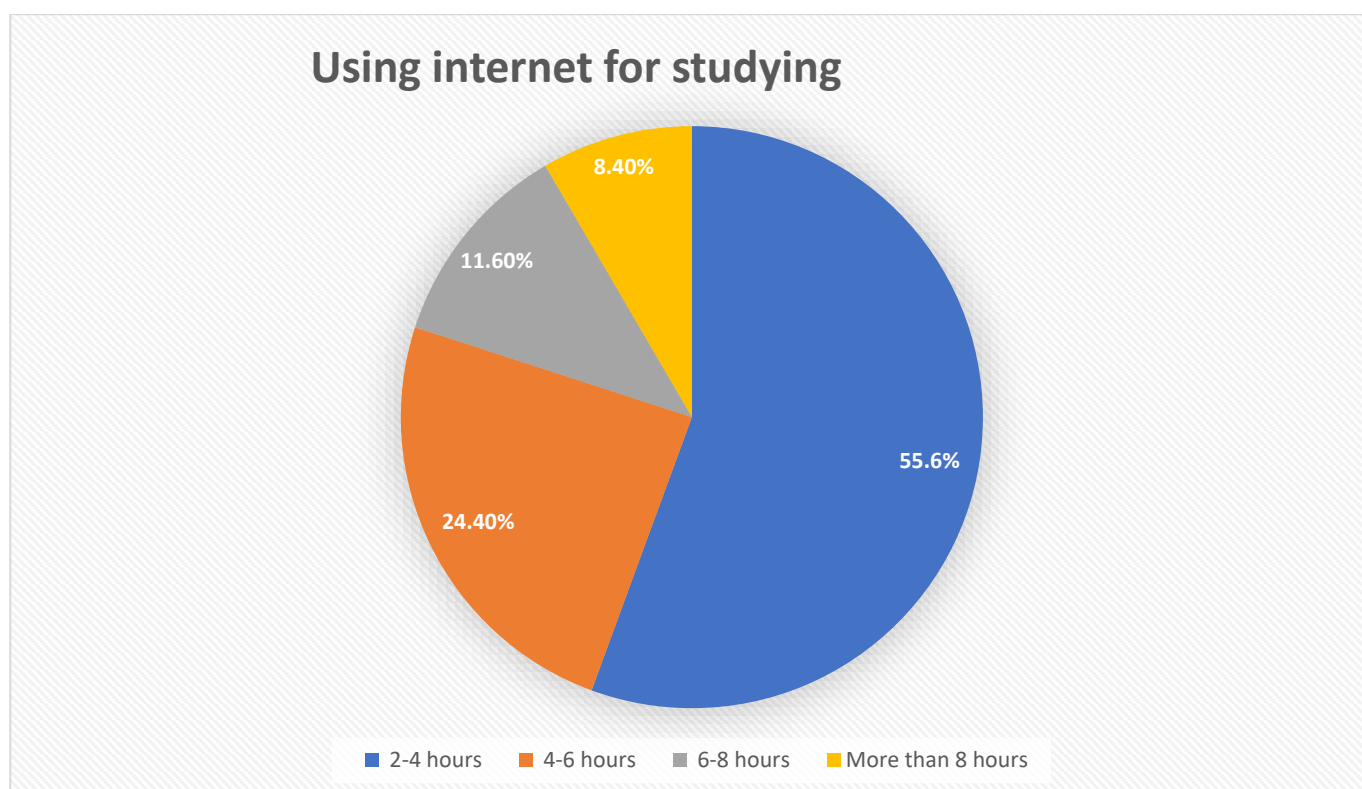
Table (1). Frequency distribution of students' sociodemographic factors (N=385)

Variables	Categories	Number	Percent
Sex	Male	91	23.6
	Female	294	76.4
Age	19-20	123	32
	21-22	206	53.6
	Other	56	14.4
Level	Level 1	79	20.4
	Level 2	59	15.2
	Level 3	94	24.4
	Level 4	154	40.0
Cumulative grade	From 60%-64% (Accepted)	15	4.0
	From 65% – 74% (Good)	88	22.8
	From 75% – 100% (Very Good & Excellent)	282	73.2
Presence of chronic diseases	Yes	32	8.4
	No	353	91.6
Residential area	Town	168	43.6
	Village	217	56.4
Living with family during the study period	Yes	299	77.6
	No	86	22.4

*Aswan University and subsequently, the Faculty of Nursing do not implement a credit hours system; therefore, cumulative grades are expressed as percentages.

Table (2). Frequency distribution of students' studying factors (N=385)

Variables	Categories	Number	Percent
Number of sleeping hours	4 or less	57	14.8
	5-8 hours	260	67.6
	More than 8 hours	68	17.6
Study method	Daily	80	20.8
	When there is a test	225	58.4
	Feeling bored while studying	72	18.8
	Don't study at all	8	2.0
Using study aids such as flashcards or concept maps	Yes	106	27.6
	No	126	32.8
	Sometimes	153	39.6
Presence of rest between study hours	Yes	283	73.6
	No	34	8.8
	Sometimes	68	17.6
Number of coffee cups per day	From 3-4 cups	294	76.4
	From 5-6 cups	18	4.8
	More than 6 cups	73	18.8

Figure 1. Frequency of using internet by students for studying purposes (N= 385)

Using internet for intertainment

- 2-4 hours
- 4-6 hours
- 6-8 hours
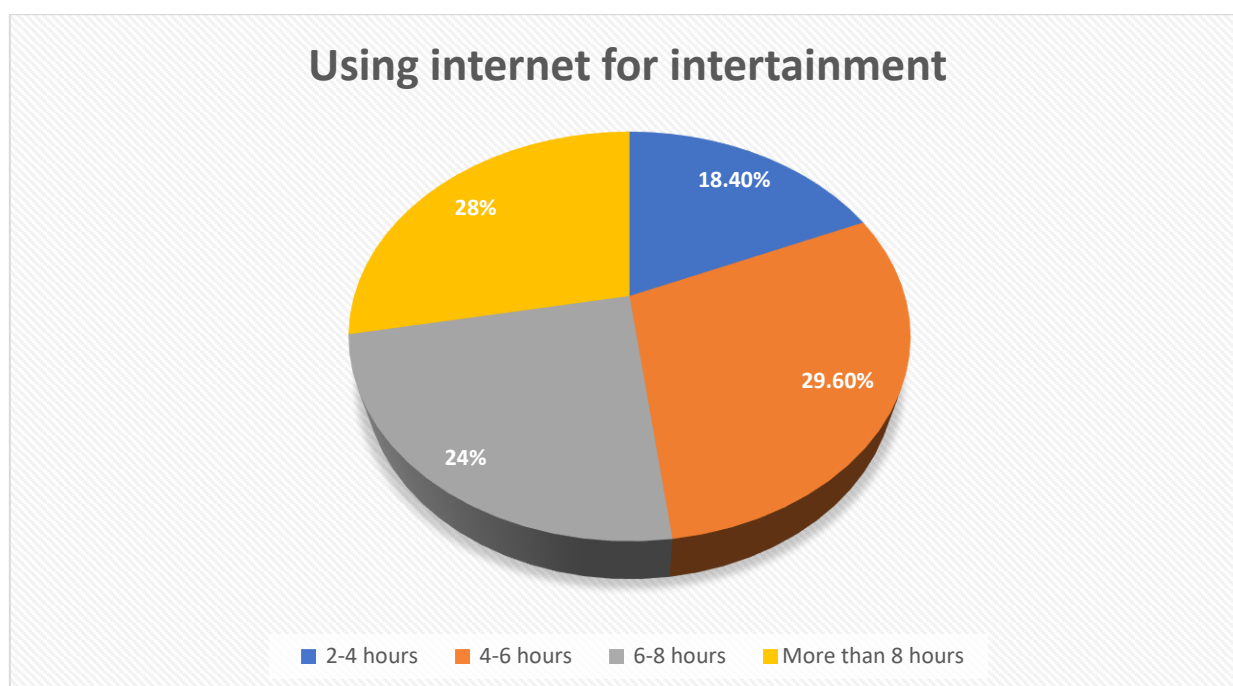- More than 8 hours

18.40% · 29.60% · 24% · 28%

Figure 2. Frequency of using internet by students for entertaining purposes (N= 385)

Table 3. Frequency distribution of students' family factors (N=385)

Variables	Categories	Number	Percent
Number of family members	4 or less	43	11.2
	From 5-9	290	75.2
	More than 9	52	13.6
Father's age	45 or less	39	10.0
	From 46 – 50 years	134	34.8
	From 51- 60 years	142	36.8
	More than 60	71	18.4
Education level of the father	Uneducated	183	47.6
	Basic education	80	20.8
	Secondary school education	88	22.8
	high education	34	8.8
Mother's age	45 or less	129	33.6
	From 46 – 50 years	163	42.4
	From 51- 60 years	72	18.8
	60 years or more	20	5.2
Education level of the mother	Uneducated	171	44.4
	Basic education	97	25.2
	High school education	59	15.2
	high education	59	15.2
Parents' marriage status	Together	345	89.6
	Separated	14	3.6
	Widowed	26	6.8
Monthly income of the family	Not enough	48	12.4
	Enough	260	67.6
	Enough and save	77	20.0

Table 4. Frequency distribution of academic factors that may affect academic performance (N=385)

Variables	Categories	Number	Percent
Provision of library useful books	Yes	129	33.6
	No	256	66.4
Comfortability of classrooms	Yes	117	30.4
	No	57	14.8
	Sometimes	211	54.8
Difficulty concentrating during the lecture	Yes	137	35.6
	No	65	16.8
	Sometimes	183	47.6
Interaction during the lecture	Yes	222	57.6
	No	34	8.8
	Sometimes	129	33.6
Provision of help from the lecturer when needed	Yes	100	26.0
	No	140	36.4
	Sometimes	145	37.6

Table (5). Relationship between sociodemographic variables (Factors) and academic performance (N=385)

Variables	Categories	Cumulative Grade			Chi-square	Sig.
		60%-64%	65% – 74%	75%-100%		
Sex	Male	6	18	57	4.665	0.097
	Female	9	39	225		
Age	19-20	3	22	98	24.485	.002**
	21-22	5	45	156		
	Other	7	21	26		
Presence of chronic diseases	Yes	5	5	22	6.802	.033*
	No	10	83	260		
Residential area	Town	6	31	131	2.336	0.311
	Village	9	57	157		
living with the family during study period	Yes	15	69	214	3.231	0.199
	No	0	19	68		
Parents' marital status	Together	14	73	257	5.111	.276
	Separated	2	3	9		
	Widowed	0	11	15		
Monthly income of the family	Not enough	0	17	31	29.92	.000**
	Enough	8	51	183		
	Enough and save	8	20	49		

Table (6). Relationship between studying, academic variables (Factors) and academic performance (N=385)

Variables	Categories	Cumulative Grade			Chi-square	Sig.
		60%-64%	65% – 74%	75%-100%		
Number of sleeping hours	4 or less	2	23	23	11.753	**.019***
	5-8	8	49	203		
	More than 8	6	15	46		
Study method	Daily	2	14	65	12.431	**.053***
	Only study if there is a test	8	48	169		
	Feel bored while studying	5	22	46		
	Don't study at all	2	5	2		
Presence of rest between the study hours	Yes	9	57	215	5.101	.277
	No	2	12	20		
	Sometimes	5	18	45		
Number of hours of using the Internet for studying per day	2-4 hours	9	52	152	5.882	.437
	4-6 hours	2	14	78		
	6-8 hours	3	11	31		
	More than 8	2	11	20		
Number of hours of using the Internet for entertainment per day	2-4 hours	5	26	40	13.772	**.032***
	4-6 hours	2	17	95		
	6-8 hours	2	20	71		
	More than 8	8	25	75		
Provision of library useful books	Yes	6	31	92	0.294	.863
	No	7	42	117		
	Sometimes	2	18	73		
Comfortability of classrooms	Yes	5	34	78	2.988	.560
	No	2	14	42		
	Sometimes	9	40	168		
Difficulty concentrating during the lecture	Yes	5	18	114	9.579	**.048***
	No	2	23	40		
	Sometimes	9	46	128		
Interaction during the lecture	Yes	5	38	179	11.351	**.023***
	No	2	8	25		
	Sometimes	9	42	78		
Provision of help from the lecturer when needed	Yes	4	28	68	7.224	.125
	No	6	37	97		
	Sometimes	5	23	117		

(*) Statistically significant at p<0.05   *(**) Statistically significant at p<0.01*

Discussion:

Identifying factors affecting academic achievement can lead to improving educational outcomes and the quality of nursing graduates. Understanding these factors is crucial for developing targeted interventions, enhance curriculum design, and provide better support for at-risk students. So, the aim of this study was to identify factors affecting academic achievement among nursing students at Aswan University.

The study's findings reveal several key factors influencing nursing students' academic performance at Aswan University, including age, chronic diseases, family income, sleep patterns, internet usage, and classroom engagement. These results both align with and diverge from recent literature, highlighting the complex nature of academic performance in nursing education.

Age and Academic Performance

The current study found a statistically significant relationship between age and academic performance (p=0.002). This finding suggests that older students may perform better academically, possibly due to increased maturity and experience leading to better time management and study skills. This result aligns with *Gemuhay et al. (2019)* in Northern Tanzania, who observed similar trends among nursing students. However, contrasting evidence exists in the literature. *Alshammari et al. (2017)* found no significant influence of age on academic performance among nursing students in Saudi Arabia, highlighting

potential cultural and educational system differences across countries.

Chronic Diseases and Academic Performance

A significant relationship was found between chronic diseases and academic performance (p=0.033). This may be attributed to restricted diets, limited physical activity, medication intake, or hospitalization, which can affect attendance and concentration. The finding is consistent with *Taras and Potts-Datema's (2005)* systematic review, which found that chronic conditions significantly affect students' academic outcomes across various educational levels. However, *Jarvie et al. (2021)* present a contrasting view, suggesting that nursing students with chronic conditions often develop resilience and coping strategies that can positively influence their academic outcomes.

Socioeconomic Factors

Monthly family income showed a highly significant relationship with academic performance (p<0.001). This may be due to inadequate financial support or lack of necessary resources for studying, potentially leading to decreased motivation. This finding aligns with global trends in educational equity, as observed by *Uddin (2017)* in Bangladesh. However, *Olufemi, Adediran, & Oyediran (2018)* present a more nuanced view, suggesting that the impact of socioeconomic status on academic performance can be mitigated by factors such as student motivation and effective study habits.

Sleep Patterns

The other factor affecting academic performance is sleeping hours, these results showed that there was a statistically significant association between sleeping hours and academic performance. this may be explained as sleeping problems may lead to annoyance and difficulty in concentration which in turn affects academic performance. In agreement with these findings, *Rose & Ramanan (2017)* found that there was a statistically significant relationship between sleeping hours and academic performance as, students who slept for less time had lower cumulative grades, as well as poor memory and attention. Also, a study by *Alsaggaf et al. (2019)* in Saudi Arabia found that poor sleep quality was associated with lower academic performance among medical students.

Internet Usage and Academic Performance

The study revealed a significant relationship between hours of internet use for entertainment and academic performance (p=0.032), this may be due to decrease study hours as being busy all time by entertainment. This finding suggests that excessive internet use for non-academic purposes may negatively impact students' academic outcomes. This aligns with a study by *Feng et al. (2019)* in China which found that excessive internet use for non-academic purposes negatively affected students' academic performance. However, *Savitsky et al. (2020)* present a more nuanced view, arguing that moderate internet use for entertainment could serve as a stress-relief mechanism, potentially benefiting academic

performance. Conversely, they note that excessive use could lead to internet addiction, negatively impacting academic outcomes. This highlights the need for a more comprehensive understanding of internet usage patterns among nursing students and the development of guidelines for healthy digital habits.

Classroom Engagement

The study revealed significant relationships between academic performance and two factors related to classroom engagement: difficulty concentrating during lectures (p=0.048) and interaction during lectures (p=0.023). These findings underscore the importance of active engagement and attentiveness in the learning process. These findings support the importance of active learning strategies in nursing education. This aligns with research by *Nelwati et al. (2020)* in Indonesia, who demonstrated the positive impact of collaborative learning approaches on nursing students' academic performance. However, *Labrague & De los Santos (2020)* found that during the shift to online learning due to COVID-19, traditional measures of classroom engagement became less relevant. This suggests that the concept of engagement may need to be redefined in the context of evolving educational modalities, particularly as nursing education increasingly incorporates online and hybrid learning approaches.

Conclusion:

Academic performance among nursing students at Aswan University is influenced by

socioeconomic status, parental education, inadequate library resources, classroom discomfort, and teacher-related factors including lack of motivation, insufficient preparation, poor punctuality, and limited use of teaching aids.

Recommendations:

✓ Further research with a larger study sample should be done to examine factors affecting academic performance.

✓ Conducting regular orientation workshops for students regarding modifiable factors that may affect academic performance to be acted on.

✓ Implement targeted interventions to address identified factors, such as improving library resources, enhancing classroom environments, and providing faculty development programs.

✓ Develop support systems for students with chronic diseases and those from lower socioeconomic backgrounds.

✓ Promote healthy sleep habits and responsible internet use among students.

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