

Exploring relationship between Academic Problems, Lectures Attendance and Academic Performance among Medical and Nursing Students: A cross- sectional study

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Abstract: Student attendance assumed an important factor in the academic performance and success for both nursing and medical students. Therefore, our study aim was to explore relationship between academic problems, lectures attendance and academic performance among medical and nursing students: A cross- sectional study. **Methods:** A cross-sectional descriptive research method utilized on systematic random sample composed of 920 medical and nursing student affiliated to Mansoura University, Egypt. Data were collected using self-administered questionnaire that composed of three parts in the form of 5-point likert scale. **Results:** There were positive correlation between students annual assessment in the past year and percentage of practical and theoretical lectures attendance among medical and nursing students with statistical significant difference ($p = \leq 0.001$). In addition, the percentage of theoretical lectures attendance among nursing students was 95.75 ± 11.76 compared to 87.62 ± 23.35 in medical students with statistical significant difference. **Conclusion:** It wished that this study would serve as the base for prospect studies aimed at assisting higher education organizations to deal with student absenteeism of medical and nursing students in Egypt. To promote and encourage lecture attendance the researchers recommend implementing more active learning strategies and exercises by using in-class group work.

Keywords: Student attendance, academic performance, nursing and medical students.

1. INTRODUCTION

Classroom attendance is an important issue for both students and their instructors. For students, class attendance is an important factor in developing competence, which create a positive relationship with higher academic performance of the student (Carnevale, et al., 2011). Academic performance is an essential factor in the success of the post-education period with respect to employment. Classroom attendance often identified as being important for students' persistence and results, with absenteeism seen as increasing the risk of dropout (Credé et al., 2010; Bijsmans & Schakel 2018). For this reason, the ability to predict students' academic success has been the subject of increasing interest. Medical and nursing colleges in the world reproveved with the responsibility of graduating well-educated and competent graduate students. This

desired outcome can be achieved by ensuring satisfactory academic performance and academic success (Mthimunye & Daniels, 2019).

Student attrition is a global problem with attrition rates informed over 30% as reported in world studies (Abele et al., 2013). Therefore, the effect of classroom attendance on student performance most often studied in the undergraduate college setting, with divergent results. There already exists literature on the impact of classroom attendance on student performance (Fadellelmoula, 2018). Thereby, many studies identify that classroom attendance is an important determinant of academic performance outcomes: students who attend more classes obtain higher final grades (Kirby and McElroy, 2003).

However, Lukkarinen et al., (2016) in a recent study found that there is a key group of students for whom participation in teaching events is indeed a significant predictor of performance. The first group is those who drop out before the final exam, the second group are those who need to attend class and exam and the third group are those who study independently and attend the exam. It revealed that attendance is positively and significantly related to performance for group two.

According to Landin and Pérez (2015), there exists a positive relationship between attendance and academic achievement. More specifically, the Meta study by Md Noh et al., (2018) concludes that a positive correlation was indicating that there exists a positive relationship between classroom attendance and final examination grades. Students then grouped into two groups according to the '80% rule'. Whereby students with attendance more than 80% scored higher marks in contrast to students with attendance less than 80%. Several factors can influence the level of attendance, including university culture, workload, teaching methods, and the teacher (Shumway et al., 2018). Class attendance can vary considerably across countries, universities, and courses. For example, Marburger (2001) studied economics students in the United States, finding that their average lecture attendance rate was 81.5%. By contrast, attendance rates in Finnish universities have been found to be as low as 40-50% (Kolari et al., 2008).

Otherwise, lack of research to evolve evidence-based interventions focusing on promoting the academic performance and success of students. None of these studies examined classroom attendance in many courses at Mansoura University. It is timely; we have noticed the pattern of students' not attending lectures at our college, University of Mansoura, particularly in medical and nursing courses. The aim of this study was to explore the academic problems and factors affecting lectures attendance among medical and nursing students.

Aim of the Study

The aim of this study was

- To explore relationship between academic problems, lectures attendance and academic performance among medical and nursing students

Research question

- What are the academic problems that facing medical and nursing students?
- What are the factors that hinder or motivate medical and nursing students for lecture attendance?
- Is there any relationship between classroom attendance and students' performance?

2. RESPONDENTS AND METHOD

This part contains complete knowledge about the research design utilized in the study, study setting and respondent, data collection instruments as well as fieldwork.

Research design

A cross-sectional descriptive research design utilized for this study.

Study setting

This study conducted and implemented in the college of nursing and college of medicine affiliated to Mansoura

University, Egypt. The College of nursing offer a bachelor degree in nursing for 4 years with 144 credit hours plus (48) credit hours for an internship. The college includes male and female students with a total number of 2035 students. Additionally, the college of medicine offer bachelor degree of Medicine and Surgery after 6 years of study plus one year internship training. Data collected from the start of March 2019 to December 2019.

Respondents:-

The study sample includes systematic random sample of 920 medical and nursing students from both college in the previously mentioned study setting. The sample divided as follows 369 from nursing college, and 551 from college of medicine.

Tools of Data Collection:

Academic problems and lecture attendance assessment questionnaire sheet

This survey conducted by the researcher's in the guidance of (Nawaz, Hussain, Sarwar, Afzal, & Gilani, 2018) the questionnaire includes three parts as follows:

Part (1) socio-demographic characteristics of studied students and includes questions related to age, gender, academic year, college, GPA, marital status, distance between university and home and other questions related presence of children , suffering from chronic illness as well as working during study.

The second part includes question related to academic problems facing students and may affect lecture attendance. This part includes total 54 statements in the form of 5-point likert scale. The academic problems was subcategorized into academic problems related to teacher or instructor and includes 20 question, seven questions concerning academic problems related to course and also four questions related to practical part and problems concerning organization. Additionally, academic problems concerning exams includes seven questions, three question related to equipment and environment and seven question related to library.

Part (3) includes questions related to factors motivating or hindering student for lecture attendance, five response to this question range from almost always affects student attendance, often, occasionally, seldom and almost never affects student attendance. In addition, the students asked what they are doing for compensating missed lectures.

Validity and reliability:

The instrument evaluated for its content validity and reliability. Five faculty members from faculty of medicine and nursing verified the content validity of the translated versions of the instruments. The reliability of scale done using Alpha Cronbach's coefficient test. The alpha reliability for tool was ($\alpha = 0.89$).

Ethical Considerations:

The study approved from research ethics committee at the Faculty of Nursing - Mansoura University. Permission acquired from the dean of the both college to conduct the study after explaining and clarifying the aim of the study. Written consent obtained from students after explaining the aim of the study. The students was assured that the data was confidential and they have the right to leave the study whenever.

Pilot study:

A pilot study conducted on 10% (90) students to ascertain the feasibility, applicability and clarity of the tool and there is no modification done.

Statistical Analysis:

Data analyzed with SPSS version 24. The normality of data first tested with one-sample Kolmogorov-Smirnov test. Data described using number and percent and continuous variables presented as mean \pm SD (standard deviation) for parametric data and Median for non-parametric data. Association between categorical variables was tested using Chi-square test. The two groups compared with Student t test (parametric data). The level of significance for all testes was at $p < 0.05$.

Results

Table (1) illustrated socio-demographic characteristics of the studied group; it was clear that the mean age of nursing student 19.86 ± 0.64 compared to 20.74 ± 1.9 for medical students. The majority of nursing students and more than two thirds of medical students were females (85.1% & 67.9% respectively). Additionally, the minority of medical and nursing students were suffering from chronic disease (2.4% & 6.9% respectively). More than three quarters of nursing students and approximately two thirds of medical student reported that lectures attendance can improve grades (77.8% & 61% respectively).

There were statistical significant differences between medical and nursing student in relation academic problem related to practical part and exams as illustrated in table (2). Additionally, the mean \pm SD of academic problems related to organization, equipment, material, and environmental factors are near equal among nursing and medical students with the total mean \pm SD of academic problems were 154.37 ± 34.77 .

Table (3) shows factors that prevent student from attending theory and practical lectures. It was clear that the most common factors preventing student from lecture attendance as follow: the lecture or practical work at a very early or late time, have many lectures every day, material taught is difficult to understand, overburden by exams in other subject. Additionally, subject teacher very boring and don't taking absenteeism in the lecture and the absenteeism doesn't affect grads were the most common academic factors reported by both medical and nursing student with statistical significant difference ($p = 0.001$). Moreover, the environmental factors reported by both group were difficulty in transportation and my friend, colleagues do not attend lecture, and I do the same. Furthermore, the percentage of theoretical lectures attendance among nursing students was 95.75 ± 11.76 compared to 87.62 ± 23.35 in medical students with statistical significant difference.

Table (4) revealed causes that motivate and encourage students to attend the lectures. It was clear that the most common causes that motivate medical and nursing students for lectures attendance were the material is difficult to understand without explanation and without attending lectures, Learn new things and increase my knowledge and understanding the lectures and help to memorize and the difference was statistically significant.

There were positive correlation between students annual assessment in the past year and percentage of practical and theoretical lectures attendance among medical and nursing students with statistical significant difference ($p = \leq 0.001$) as it was illustrated in table (5) and figure 1&2.

Figure (3) showed the students action to compensate missed lectures; it was clear that the majority of nursing and medical students (80.2% & 79.9% respectively) were replying that they are asking their colleague about parts that have explained while minority of them asking the subject teacher and the difference was statistically significant ($p = 0.012$)

3. RESULTS

Table (1): Demographic characteristics' of the studied groups (N=920)

Socio-demographic data	Nursing students (n=369) %	Medical students (n=551) 59.9%	Test of significance	p value
Age in years (Mean \pm SD)	19.86 ± 0.64	20.74 ± 1.9	$t = 17.46$	$\leq 0.001^{**}$
Gender			$\chi^2 = 34.74$	$\leq 0.001^{**}$
Male	55 (14.9%)	177 (32.1%)		
Female	314 (85.1%)	374 (67.9%)		
Marital status			$\chi^2 = 3.14$	0.076
Single	360 (97.6%)	525 (95.3%)		
Married	9 (2.4%)	26 (4.7%)		
Academic year			$\chi^2 = 355.3$	$\leq 0.001^{**}$
Second	203 (55%)	110 (20%)		
Third	166 (45%)	105 (19.1%)		
Fourth	0 (0%)	116 (21.1%)		
Fifth	0 (0%)	99 (18%)		

Sixth	0 (0%)	121 (22%)		
GPA in the last year				
Excellent	48 (13%)	113 (20.5%)	$\chi^2=82.6$	$\leq 0.001^{**}$
Very good	94 (25.5%)	237 (43.0%)		
Good	198 (53.7%)	134 (24.3%)		
Accepted	29 (7.9%)	67 (12.2%)		
Live with				
Family (urban)	260 (70.5%)	324 (58.8%)	$\chi^2=16.98$	$\leq 0.001^{**}$
Family (Rural)	50 (13.6%)	114 (20.7%)		
University city	36 (9.8%)	85 (15.4%)		
Colleagues in a special apartment	23 (6.2%)	28 (5.1%)		
Distance between your residence and the university				
Less than 15 min	55 (14.9%)	96 (17.4%)	$\chi^2=8.11$	0.150
15-30 minutes	46 (12.5%)	90 (16.3%)		
30-45 minutes	56 (15.2%)	90 (16.3%)		
45-60 minutes	117 (31.7%)	133 (24.1%)		
60-90 minutes	92 (24.9%)	136 (24.7%)		
> 90 minutes	3 (0.8%)	6 (1.1%)		
Work during the study	24 (6.5%)	39 (7.1%)	$\chi^2=0.114$	0.735
Have children	9 (2.4%)	15 (2.7%)	$\chi^2=0.07$	0.792
Suffer from chronic illness	9 (2.4%)	38 (6.9%)	$\chi^2=9.05$	0.003*
Teaching lectures can improve your grades	287 (77.8%)	336 (61%)	$\chi^2=28.52$	$\leq 0.001^*$
Can get high grades despite not attending lectures	164 (44.4%)	153 (27.8%)	$\chi^2=27.21$	$\leq 0.001^*$

Table (2); Academic problems facing nursing and medical students (N=920)

Academic Problems	Total	Nursing students (n=369)	Medical students (n=551)	t-test	p value
Academic problems related to teacher or instructor	54.78±16.53	55.53±17.08	54.27±16.14	1.130	0.259
Academic problems related to course	19.49±6.61	19.42±6.82	19.53±6.46	0.243	0.808
Academic problems related to practical part	13.87±3.59	11.51±3.82	15.46±2.35	7.551	$\leq 0.001^*$
Academic problems related to exams	15.23±3.85	14.09±4.78	15.99±2.82	19.340	$\leq 0.001^*$
Academic problems related to organization	11.63±4.41	11.42±4.10	11.77±4.60	2.170	0.242
Academic problems related to equipment's and materials	8.37±3.02	8.34±3.06	8.39±2.98	1.172	0.821
Academic problems related to environment	8.36±3.21	8.51±3.09	8.26±3.27	0.227	0.241
Academic problems related to library	22.61±7.49	22.48±7.65	22.70±7.39	0.434	0.664
Total academic problems	154.37±34.77	151.35±39.44	156.42±31.11	1.172	0.03*

Table (3): Causes that hinder students to attend theoretical and practical lecture (N=920)

Causes that hinder attendance of the lecture	Total	Nursing students (n=369)	Medicine students (n=551)	t-test	P value
Academic factors					
I have one lecture per day	2.41±1.47	2.59±1.49	2.28±1.44	3.153	0.002*
I have many lectures every day	2.15±1.36	2.42±1.44	1.97±1.28	5.012	$\leq 0.001^*$
The date of the lecture or practical work at a very early or late time	2.19±1.38	2.44±1.46	2.04±1.31	4.350	$\leq 0.001^*$
I have studied this subject in another place or my background on the article	2.73±1.38	2.84±1.42	2.65±1.36	2.010	0.045*

The material taught is difficult to understand	2.39±1.40	2.72±1.43	2.17±1.33	5.860	≤0.001*
There is no incentive to attend the lecture	2.89±1.49	2.73±1.42	2.99±1.53	2.556	0.011*
I do not like content taught	2.67±1.39	2.74±1.37	2.62±1.41	1.257	0.209
Responsible for teaching the material to attend	2.59±1.57	2.79±1.47	2.46±1.62	3.149	0.002*
Have exam in another subject	2.19±1.27	2.57±1.43	1.93±1.08	7.662	≤0.001*
Content of the article is available elsewhere	2.54±1.31	2.71±1.34	2.43±1.27	3.120	0.002*
I like the subject but the professor is boring	2.53±1.29	2.76±1.39	2.37±1.20	4.475	≤0.001*
Do not take absenteeism in the lectures and do not affect the absence of my discretion	2.37±1.36	2.79±1.49	2.09±1.18	7.942	≤0.001*
There is no any new information or additions to the book or the PowerPoint	2.39±1.31	2.73±1.39	2.15±1.19	6.739	≤0.001*
I do not like course professor	2.61±1.41	2.74±1.43	2.53±1.40	2.280	0.023*
Total Academic factors	34.68±12.09	37.61±14.12	32.72±10.06	6.131	≤0.001*
Environmental factors					
The weather is bad	2.60±1.43	2.67±1.54	2.56±1.36	1.122	0.262
There is a problem and difficulty of transportation	2.44±1.30	2.64±1.41	2.29±1.20	3.945	≤0.001*
I am associated with a working date	2.64±1.37	2.78±1.40	2.53±1.31	2.463	0.014*
Medical reasons (I am sick)	2.52±1.34	2.74±1.42	2.37±1.27	4.096	≤0.001*
I have an appointment with the doctor	2.91±1.41	2.77±1.38	3.01±1.42	2.430	0.015*
I have a social or personal status	2.79±1.33	2.77±1.35	2.81±1.33	0.442	0.659
Stay at home to take care of my sick child or parent	2.71±1.45	2.72±1.48	2.70±1.42	0.190	0.850
My colleagues do not attend the lectures and I do the same	2.62±1.37	2.96±1.41	2.39±1.29	6.247	≤0.001*
Environmental factors (Total)	21.25±7.31	22.06±8.40	20.71±6.44	2.768	≤0.001*
Total	55.93±17.45	59.68±20.84	53.42±14.24	5.403	≤0.001*
Percentage of theoretical lectures attendance	90.88±19.94	95.75±11.76	87.62±23.35	6.17	≤0.001*
Percentage of practical lectures attendance	87.19±16.59	87.06±17.18	87.27±16.20	0.184	0.854

Table (4): Causes that motivate or encourage students to attend the lecture

Variables	Nursing students (n=369)	Medicine students (n=551)	t-test	P value
Learn new things and increase my knowledge	2.45±1.58	1.86±1.26	6.278	≤0.001*
Understand lectures and help to memorize	2.54±1.51	1.84±1.15	7.873	≤0.001*
I love my college, which I study and interested in	2.75±1.46	2.41±1.39	3.581	≤0.001*
I am interested in the taught subjects	2.66±1.40	2.25±1.24	4.701	≤0.001*
I like the method of explanation and teaching	2.59±1.46	2.14±1.28	4.922	≤0.001*
Fear of failed in the exams	2.50±1.49	2.43±1.60	0.688	0.491
I want to succeed in exams	2.46±1.51	2.24±1.50	2.134	0.033*
Attendance of lectures affects the percentage of absenteeism and evaluation method	2.47±1.52	2.28±1.46	1.941	0.053
I feel guilty if I do not attend lectures	2.59±1.47	2.25±1.33	3.641	≤0.001*
Get high grades	2.58±1.55	2.38±1.64	1.921	0.055
If I do not attend the lecture I will miss a lot	2.55±1.44	2.48±1.50	0.613	0.540
Subject teachers is adding some information and examples not found in the PowerPoint	2.54±1.44	2.63±1.62	0.831	0.406
The material is difficult to understand without explanation and without attending lectures	2.62±1.48	2.17±1.37	4.638	≤0.001*
I want to ask questions	2.68±1.36	2.54±1.34	1.458	0.145

Table (5): Correlation between annual assessment in the past year and attendance percentage

	Test of significance	
	r	p- value
Percentage of theoretical Lectures attendance	0.277	≤0.001**
Percentage of practical Lectures attendance	0.304	≤0.001**
Academic problems	0.020	0.551

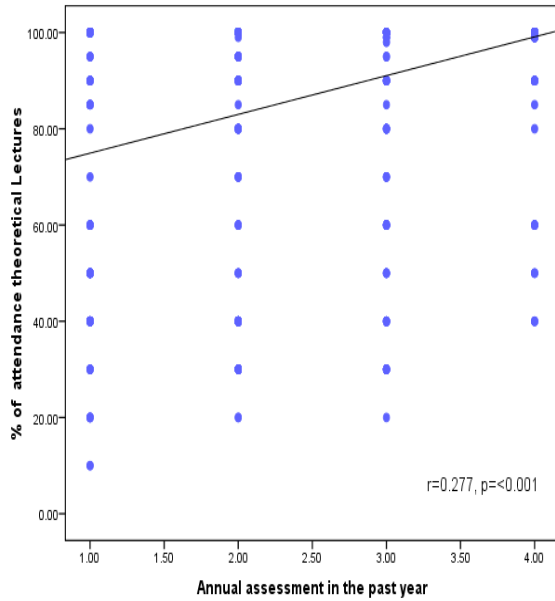


Figure (1): Scatter diagram for positive correlation Between annual assessment in the past year and percentage of theoretical Lectures attendance

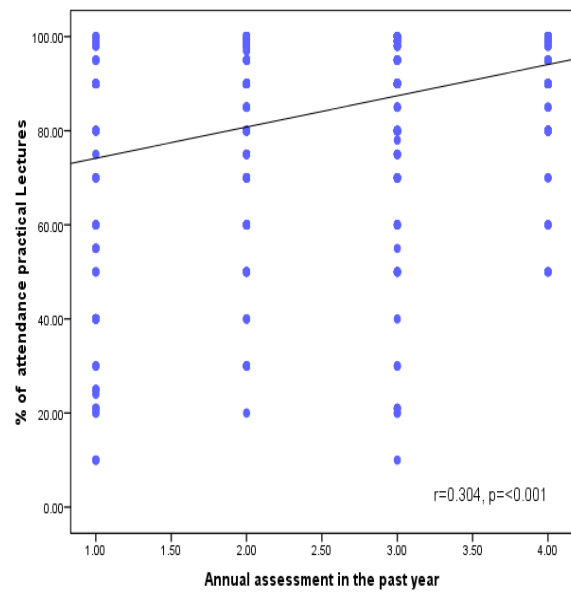
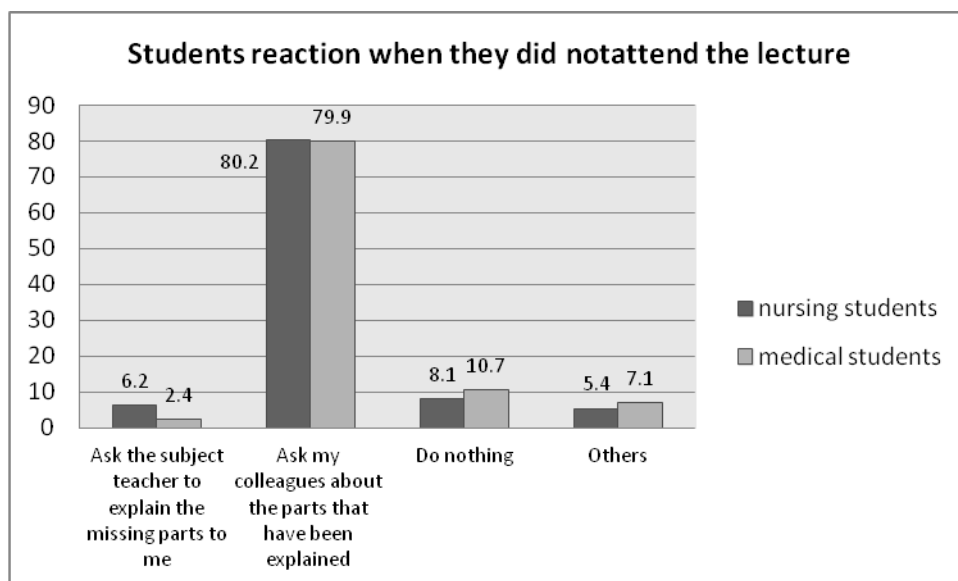


Figure (2): Scatter diagram for positive correlation Between annual assessment in the past year and percentage of practical Lectures attendance



$\chi^2=10.94$ P=0.012*

Figure (3); Student's action to compensate missed lecture

4. DISCUSSION

In our location, the university powerfully applies obligatory attendance strategy and each student has to be present at 75% or more of the total curriculum in order to be permitted to sit for the last exam. For the duration of the course time, the course lecturer intimately confirms medical and nursing student attendance and students are constantly up to date about the attendance together with their exam authorization condition (Fadellelmoula, 2018)

The results of this study exposed that the majority of the medical and nursing students were female. Even though, the mean age of nursing student 19.86 ± 0.64 compared to 20.74 ± 1.9 for medical students. This result was in contrast with Md Noh et al., (2018) they documented that 55.0% of the respondent are female while the rest are male. Similarly, (Shumway et al., 2018) demonstrated that there were not statistically significant regarding student's age and gender, which indicate that lecture attendance did not differ by gender

In this study, More than three quarters of nursing students and approximately two thirds of medical student reported that lectures attendance could improve grades (77.8% & 61% respectively). This result was consistent with the result of (Kirby & McElroy, 2003) who established affirmative correlation between lecture attendance and final exam performance. This finding in concord with (Alghamdi et al., 2016 & Bamuhair et al., 2016) who stated that the performance GPA mean is influenced by low attendance rates

Concerning academic problems facing medical and nursing students, the present study found that there were statistical significant differences between medical and nursing student in relation to academic problem related to practical part and exams. This finding was agreed with (Fadellelmoula, 2018, Alghamdi et al., 2016) they mentioned unfavorable teaching policies, preparation for examinations, early-morning classes and social causes like marriage and part time job as the main cause at their situation.

Therefore, it is important to advocate working on the reasons of absenteeism to advance increase the rate of attendance of all academic tricks. On the other hand, (Melack, 2014) noted that inadequate teaching and learning materials and low staffing and absence of library and laboratory facilities in colleges impacted negatively on the performance of students. (Lin et al., 2015) also, reported that, academic problems in a college include lessons, exams, learning difficulties and internal classroom factors (Principe, 2005). For that reason, academic convention should give highlighting on the pedagogies and consideration that adjust to these academic problems and requirements of the students.

As regard to factors that prevent student from attending theory and practical lectures. The current study showed that, statistical significant difference ($p = 0.001$) of the most common academic and environmental factors reported by both medical and nursing student. (Hashem et al., 2014), for instance, reported that academic problems expect 20.79% of the students' academic performance. This supports that academic problems actually have large negative effect on students' attendance. Similarly, (Eimuhi & Ogedegbe, 2016, Usain & Abubakar, 2015) confirmed that environmental factors are highly correlated to the students' academic attendance and accomplishment.

On the causes that motivate and encourage students to attend the lectures, this study finds the material is difficult to understand without attending lectures, Learn new things and increase knowledge and understanding the lectures and help to memorize to be more statistically significantly related to student attendance. This is agreed with Fjortoft, (2005) who motivators to attend lectures comprised the lack of a definite handout, the probability that original information would be accessible in class that was not included in the handout. However, the study carried out by Westrick et al., (2009) who mentioned that the primary reasons for students' attendance a want to acquire their own clarification that the lecturer might provide information as to what was essential to learn from the knowledge and knowing the area of concentration for the examination

Otherwise, this study was examined another variable of the study, Correlation between annual assessment in the past year and attendance percentage. This study found a significant relationship between students annual assessment in the past year and lectures attendance among medical and nursing students ($p = \leq 0.001$). In this regards, (Aden et al., 2013) revealed that a strong positive association between student's attendance and academic performance in SIMAD university Mogadishu. On the same line, our results are consistent with other studies, which obtained significant and positive relationship between class attendance and cumulative GPA for academic success (Mthimunye & Daniels, 2019, Alshammari et al., 2017, Credé et al., 2010).

5. CONCLUSION AND RECOMMENDATION

The absenteeism of medical and nursing students from classrooms and clinical setting has a negative impact on their performance and prolongs the length of their studying. Our study showed that the majority of students attend the in the clinical practice while the absenteeism percentage was higher in theory lectures. Students that increase the absenteeism rate report many factors. In addition, the study found a positive correlation between students' academic performance and annual GPA in the past year and percentage of practical and theoretical lectures attendance among medical and nursing students. It wished that this study would serve as the base for prospect studies aimed at assisting higher education organizations to deal with poor academic performance of medical and nursing students in Egypt. To promote and encourage lecture attendance the researchers recommend implementing more active learning strategies and exercises by using in-class group work.

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