http://doi.org/10.33279/jkcd.v13i04.596

MOTIVATED TO SUCCEED: A COMPARATIVE ANALYSIS OF UNDERGRADUATE MEDICAL STUDENTS IN PUBLIC AND PRIVATE MEDICAL SCHOOLS

Almas Fasih Khattak[1], Naheed Mahsood[2], Madiha Khattak[3], Mustafa Qazi[4], Bilqis Hassan[5], Humera Gillani[6]

[1]Department of Excellence, Research, Innovation, and Linkages (DERIL), Alliance Healthcare Peshawar Pakistan
[2]Department of Medical Education, Khyber Girls Medical College, Peshawar Pakistan
[3]Department of Physiology, Khyber Medical College, Peshawar Pakistan
[4]Northwest School of Medicine, Peshawar Pakistan
[5]Department of Medical Education, Northwest School of Medicine, Peshawar Pakistan
[6]Department of Dermatology, Northwest School of Medicine, Peshawar Pakistan

ABSTRACT

Objectives: *This study aimed to explore academic motivation among first-year medical students, examining differences in motivation levels based on gender, type of medical school, and living arrangement.*

Materials and Methods: *A total of 192 first-year medical students participated in the survey with an equal number of responses from public and private medical schools in this cross-sectional survey. The study utilized the Academic Motivation Scale (AMS) to assess academic motivation levels. The independent sample t-test was used to examine differences in academic motivation between groups.*

Results: *The mean score for academic motivation among participants was 136.94 ± 20.974, with no significant difference between male and female students. Private medical school students had a higher overall mean score of academic motivation than public medical school students, although the difference was not statistically significant. Private medical school students scored higher in the Intrinsic Motivation - To Know (p-value<0.001), and Intrinsic Motivation - To Experience Stimulation (p-value=0.001) subscales. Public medical school students scored higher in the Extrinsic Motivation - Introjected subscale. Hostellers and day scholars showed no significant difference in overall academic motivation.*

Conclusion: *The study provides insights into the academic motivation of first-year medical students. No significant differences were found in the overall academic motivation scores of different demographic groups of the students. However, differences were observed in the subscale scores of students. Private sector medical students and male students scored higher in Intrinsic Motivation - to know and experience stimulation than public sector medical students and female students respectively.*

Key words: *Academic motivation, cross-sectional study, extrinsic motivation, intrinsic motivation, medical students, public and private medical schools*

INTRODUCTION

Over the past few decades, medical education has evolved to encompass a variety of themes, including the learning methodologies and motivating beliefs of medical students[1]. While some studies emphasized the self-efficacy beliefs[2,3] and self-regulated learning (SRL) of medical students[4,5] others have examined the relationships between these variables, such as the effects of participation, motivation, and

Correspondence:
Naheed Mahsood
Associate Professor,
Department of Medical Education, Khyber Girls Medical College, Peshawar Pakistan
Email: drnaheed1@yahoo.com

learning strategies on academic performance, and the connections between self-efficacy and learning strategies[6,7]. Despite these efforts, few studies in Pakistan have thoroughly explored the structural links between academic success and academic motivation among medical students.

Academic success among medical students is strongly associated with academic motivation[8,9]. Self-determination theory[10] suggests that motivation can be broadly divided into two categories: extrinsic motivation, which originates from external sources, and intrinsic motivation, which arises from internal interest. These factors range from the least autonomous to the most autonomous, including identified regulation (valuing a behavioral goal as personally important), introjected regulation (internal pressure or feelings of guilt or shame), and external regulation (behavior intended to meet an external demand)[11]. According to Kusurkar et al[12], medical students are likely to perform better academically if they are motivated by intrinsic factors or more autonomous forms of extrinsic factors.

On the other hand, amotivation, or the complete absence of self-determination, contrasts with intrinsic and extrinsic motivation. Extrinsic motivation levels are surpassed until one achieves the level of intrinsic motivation, at which point a person becomes self-determined[13]. Teachers are often dissatisfied when their students lack motivation to learn, as motivational issues are believed to be highly prevalent in educational settings. Results from previous studies suggest that academic motivation has a significant effect on students' academic performance, indicating that motivation is essential for both performance and academic success[14].

The medical field is a highly competitive and demanding profession, and medical schools have an important role in shaping future physicians. The quality of education and resources provided by medical schools greatly impacts medical students' academic performance and success. In recent years, a growing number of private medical schools have emerged, offering a different academic environment and resources compared to public sector medical schools. Despite the increasing number of private medical schools, there is a lack of research on how the academic motivation of medical students in private and public medical sector medical schools differs.

A frequently used tool to evaluate students' motivation for learning is the Academic Motivation Scale (AMS). The scale consists of 28 items on a seven-point Likert scale[15]. In numerous studies, the scale has demonstrated a very high degree of internal and external consistency[16,17]. The primary objective of this study is to assess the academic motivation levels among undergraduate medical students enrolled in both public and private sector medical colleges, with a specific focus on discerning potential disparities between male and female students.

Understanding the differences in academic motivation between medical students in private and public medical schools can help educators and policymakers identify the factors contributing to academic success and improving medical education quality. Moreover, understanding these differences can help medical schools develop targeted interventions and resources to better support their students. These findings can be used to increase motivation among students, thereby improving their academic performance and overall success.

MATERIALS AND METHODS

We conducted a cross-sectional study that involved collecting data from the participants of first-year undergraduate medical students. The participants were undergraduate medical students from purposefully selected public and private medical schools in Pakistan. Participants were recruited using the census sampling method as all the first-year students were included in the sample from the two medical schools. Participants were informed about the purpose of the study and their voluntary participation and were asked to sign an informed consent form before participating in the study.

Ethical considerations were taken into account. Ethical approval for the study was granted by IRB&EC of [Blinded] (Ref: IRB&EC/2021-SM/3103). The study was conducted according to the ethical guidelines for research involving humans. Participants were informed about their voluntary participation in the study, and their data was kept confidential.

The data was collected through a self-administered questionnaire. The questionnaire consisted of two parts: the first part collected demographic information, such as age, gender, and type of med-

ical school; the second part included the Academic Motivation Scale (AMS). The Academic Motivation Scale (AMS) was used to measure the level of academic motivation among undergraduate medical students in this study. The scale consists of 28 items that measure seven types of motivation: intrinsic motivation to know, intrinsic motivation to accomplish, intrinsic motivation to experience stimulation, identified regulation, introjected regulation, external regulation, and motivation[18].

Higher scores on the intrinsic motivation to know, intrinsic motivation to accomplish, and intrinsic motivation to experience stimulation subscales indicate a higher level of self-determined motivation, whereas higher scores on identified regulation and introjected regulation subscales indicate a more external form of motivation. Higher scores on the external regulation subscale indicate that students are more motivated by external factors, such as rewards or punishment. Finally, higher scores on the motivation subscale indicate a complete lack of motivation.

The AMS has demonstrated high levels of internal consistency and is a reliable and valid instrument for measuring academic motivation among undergraduate students in various settings. In this study, the AMS was found to be a reliable instrument for measuring academic motivation among undergraduate medical students in public and private sector medical schools in Pakistan. The interpretation of the AMS scores helps in understanding the level and type of academic motivation among undergraduate medical students.

The questionnaire was administered in the classroom in the start of the academic year to the first-year medical students. A total of 192 students participated to complete the questionnaire. Descriptive statistics were used to analyze the demographic data. The data collected through the AMS was analyzed using the statistical software SPSS 25. The mean scores for each type of motivation were calculated and compared between public and private medical school students, as well as between males and females and among hostellers and day scholars.

RESULT

A total of 192 first-year medical students participated in the survey, comprising 59 (30.7%) male respondents and 133 (69.3%) female respondents. The participant's mean age was 19.32 years, ranging between 17 to 23 years. An equal number of responses (50% each) were received from medical schools in the private and public sectors, with a total of 96 responses from each sector. Of the participants, 111 (57.8%) reported living in dormitories or hostels at the time of the survey, while 81 (42.2%) reported living at home as day scholars. Additionally, 95 respondents (45.3%) reported having doctors as first-degree relatives, while 121 respondents (63%) reported having doctors as second-degree relatives.

The study found that the overall mean academic motivation score of undergraduate medical students was 136.96 (SD:20.974), with a range of 70 to 182. The mean scores for the subthemes of Intrinsic Motivation - To Know, Intrinsic Motivation - Towards Accomplishment, Intrinsic Motivation - To Experience Stimulation, Extrinsic Motivation – Identified, Extrinsic Motivation – Introjected, Extrinsic Motivation - External Regulation, and for Amotivation are shown in Table 1.

The independent sample t-test was used to show differences between the students' academic motivation based on their gender, institutional setting, and living arrangements.

Differences in academic motivation between male and female students were investigated. The overall mean score for male students was 137.90 (SD: 19.710), while that for female students was 136.51 (SD: 21.570). The p-value was 0.674, indicating that there was no statistically significant difference in academic motivation between male and female students.

Subscale analysis revealed that male students had a higher mean score for IM – To Know (25.17, SD: 2.534) compared to female students (24.16, SD: 4.409), but the difference was not statistically significant ($p = 0.047$). Female students had a higher mean score for IM – Towards Accomplishment (21.76, SD: 4.924) compared to male students (20.69, SD: 4.651), but again, the difference was not statistically significant ($p = 0.153$). Male students had a significantly higher mean score for IM – To Experience Stimulation (21.73, SD: 4.294) than female students (19.68, SD: 5.606) with a p-value of 0.006. There were no significant differences in EM – Identified, EM – Introjected, EM – External Regulation, and Amotivation between male and female students

with p-values of 0.414, 0.299, 0.363, and 0.725, respectively.

The study investigated the differences in academic motivation among public and private medical school students. The overall mean score for academic motivation was found to be higher for private medical school students (139.15, SD: 17.971) than public medical school students (134.73, SD: 23.488), but there was no statistically significant difference(p-value=0.145). However, we observed significant differences in the subscale mean scores for IM – To Know (p-value<0.001), IM – To Experience Stimulation (p-value=0.001), and Amotivation (p-value=0.470). Private medical school students scored higher on IM – To Know (25.68, SD: 2.452) and IM – To Experience Stimulation (21.58, SD: 4.252) compared to public medical school students (23.26, SD: 4.733 and 19.03, SD: 5.948, respectively). However, public medical school students scored higher on Amotivation (8.30, SD: 5.582) than private medical school students (7.74, SD: 5.165). No significant differences were found in the other subscales.

The study also aimed to examine differences in academic motivation between hostellers and day scholars. The overall mean academic motivation score for hostellers was found to be 136.69 (SD: 21.596) compared to 137.27 (SD: 20.220) for day scholars. The subscale mean scores revealed that the mean scores for Intrinsic Motivation - To Know were similar for day scholars (M = 24.52, SD = 3.818) and hostellers (M = 24.43, SD = 4.060), as were the scores for Intrinsic Motivation - Towards Accomplishment (day scholars: M = 21.58, SD = 5.030; hostellers: M = 21.32, SD = 4.743) and Intrinsic Motivation - To Experience Stimulation (day scholars: M = 20.20, SD = 5.435; hostellers: M = 20.39, SD = 5.245). we observed no significant differences in the scores for any of these subscales between the two groups (p > 0.05). Similarly, the mean scores for Extrinsic Motivation - Identified were higher for day scholars (M = 23.48, SD = 4.838) than for hostellers (M = 23.44, SD = 3.933), while the mean scores for Extrinsic Motivation - Introjected were higher for hostellers (M = 20.23, SD = 5.587) than for day scholars (M = 19.85, SD = 6.050), but the differences

Table 1: Mean Scores of Students on the Academic Motivation Scale and Subscale Scores

CHARACTERISTIC	N	Mean	SD	Minimum	Maximum
Total Mean Score	192	136.94	20.974	70	182
Intrinsic Motivation – To Know	192	24.47	3.950	6	28
Intrinsic Motivation – Toward Accomplishment	192	21.43	4.854	9	69
Intrinsic Motivation – To Experience Stimulation	192	20.31	5.313	5	28
Extrinsic Motivation - Identified	192	23.46	4.326	4	28
Extrinsic Motivation - Introjected	192	20.07	5.775	4	28
Extrinsic Motivation – External Regulation	192	18.68	5.652	4	28
Amotivation	192	8.02	5.371	4	26

Table 2: Comparison of Academic Motivation of Students based on their Gender, Institutional Setting and Living Arrangements

Group	N	Mean (+ SD)	Mean Difference	P-Value	95% CI of the Mean Difference
All Students	192	136.94 (20.974)			
Gender					
Male	59	137.90 (19.710)	-1.387	0.663	-7.673 – 4.899
Female	133	136.51 (21.570)			
Institutional Setting					
Private	96	139.15 (17.971)	-4.417	0.145	-10.373 – 1.540
Public	96	134.73(23.488)			
Living Arrangements					
Day Scholars	81	137.27 (20.220)	0.578	< 0.850	-5.423 – 6.579
Hostellers	111	136.69 (21.596)			

were not statistically significant ($p > 0.05$). The mean scores for Extrinsic Motivation - External Regulation and Amotivation were also similar for day scholars ($M = 18.93$, $SD = 5.833$; $M = 8.04$, $SD = 5.607$, respectively) and hostellers ($M = 18.50$, $SD = 5.536$; $M = 8.01$, $SD = 5.218$, respectively), and there were no significant differences between the two groups ($p > 0.05$). Overall, the results suggest that there were no significant differences in academic motivation between hostellers and day scholars in this study. shown in table 2.

DISCUSSION

Our study aimed to assess the academic motivation of first-year medical students and examine differences in motivation between students attending private and public sector medical schools. The findings from this study showed that the overall mean academic motivation score of undergraduate medical students was 136.96 (SD: 20.974) out of a possible range of 28 to 196. This suggests that the students had moderate to high levels of academic motivation.

The mean score for amotivation, which indicates a lack of motivation, was 8.02 (SD: 5.371). The finding that amotivation had the lowest mean scores among the subscales of academic motivation is a positive sign as it indicates that the majority of medical students in the study were not completely disengaged or lacked motivation toward their academic pursuits. However, it is important to note that a non-negligible number of students still scored low in this subscale, indicating that some students may be experiencing feelings of a lack of motivation. To address this issue, medical educationists and medical school administrations could consider implementing interventions or strategies to foster and maintain student motivation. For instance, creating a supportive and engaging learning environment, providing opportunities for active learning and student involvement in decision-making, and encouraging feedback and recognition could all help to motivate students toward their academic goals.

These findings suggest that the undergraduate medical students were mostly motivated by their interest and enjoyment in learning (intrinsic motivation) and their personal goals and values (identified and introjected regulation) rather than external factors such as rewards or punishments (external regulation). However, there was still a significant proportion of students who lacked motivation toward their academic pursuits.

There have been several previous studies that have investigated academic motivation among medical students. Intrinsic motivation has a positive role in academic performance. They also found that extrinsic motivation had a positive but less significant impact on academic performance. These findings are consistent with the current study, which also found that intrinsic motivation was higher than extrinsic motivation among undergraduate medical students[19]. Another study conducted by Kusurkar et al[12] found that academic motivation had a major positive role in academic performance. However, their study used a different academic motivation scale and did not differentiate between intrinsic and extrinsic motivation. Nonetheless, their findings are consistent with the current study in that academic motivation is positively related to academic performance. Our study's findings are comparable with previous studies that suggests intrinsic motivation is a stronger predictor of academic performance than extrinsic motivation.

These results suggest that gender does not significantly influence academic motivation in students. However, there are some differences in subscale scores between male and female students, specifically in IM – To Experience Stimulation, which indicates that male students may be more motivated by stimulating learning experiences. This finding is consistent with previous research that has shown gender differences in academic motivation, with males often showing higher levels of intrinsic motivation compared to females. Additionally, females scored lower on the "IM – To Experience Stimulation" subscale. There were no significant differences in the "EM – Identified," "EM – External Regulation," and "Amotivation" subscales. These findings are comparable with findings of previous research that there is no significant difference in academic motivation between male and female students[20]. However, other studies have found that females tend to be more intrinsically motivated than males[21] which is not supported by the current study. The differences in subscale scores found in the current study may suggest that males and females have slightly different motivational profiles, but overall, the differences are not significant.

The study also aimed to explore the differences

in academic motivation between public and private sector medical school students. The findings revealed that private medical school students had a higher overall mean score for academic motivation than public medical school students. However, the difference was not statistically different. There was a significant difference in subscale mean scores for IM – To Know, IM – To Experience Stimulation, and Amotivation.

The results showed that private medical school students scored higher on IM – To Know and IM – To Experience Stimulation compared to public medical school students, which suggests that private medical school students are more motivated towards acquiring knowledge and experiencing stimulation in their academic pursuits. This finding may indicate that private medical schools offer more stimulating and engaging learning opportunities compared to public medical schools. Conversely, public medical school students scored higher on Amotivation than private medical school students, indicating that public medical school students are more prone to feeling disinterested or lacking motivation toward their academic pursuits. These findings are not consistent with the previous research, which has shown that there are no differences in the motivation of private and public medical school students[22].The study highlights the importance of understanding the differences in academic motivation between public and private medical school students, which could help in developing targeted interventions to enhance academic motivation among medical students. Students from private medical schools may be more motivated by knowledge acquisition and stimulation, while those from public medical schools may be more motivated by external factors such as societal expectations and career opportunities[23]. The findings suggest that medical educators should consider these differences when developing strategies to enhance academic motivation among medical students.

The study also aimed to investigate any significant difference in academic motivation between hostellers and day scholars. The results showed that the overall mean academic motivation scores were comparable for both hostellers and day scholars, with the mean score for day scholars being slightly higher than that of hostellers. The subscale mean scores for Intrinsic Motivation - To Know, Intrinsic Motivation - Towards Accomplishment, and Intrinsic Motivation - To Experience Stimulation were also similar for both hostellers and day scholars. These findings are comparable with the precious research have shown that the motivational factors driving academic success are relatively similar for both groups (Baqutayan; Gamage et al.). The results also revealed no significant differences in the scores for Extrinsic Motivation - Identified, Extrinsic Motivation - Introjected, Extrinsic Motivation - External Regulation, and Amotivation subscales between hostellers and day scholars. We could not find any comparable studies having explored the academic motivation of medical students living in hostels. This aspect of medical students life may be explored further to see how the hostel life influence their academic motivation.

There are limitations in this study that should be acknowledged. The sample size is relatively small and may not be representative of all medical students. Second, the study only assessed academic motivation at one point in time and did not account for changes in motivation over the academic year or throughout medical school. Third, the study relied on self-report measures of academic motivation, which may be subject to response bias. Fourth, the study was conducted in only two medical institutions and may not be generalizable to other medical schools or healthcare education programs. Finally, the study did not explore other factors that may affect academic motivation, such as socioeconomic status or family background.

CONCLUSION

The study found no significant difference in overall academic motivation scores between male and female students. However, there were differences in subscale scores, with male students scoring higher on intrinsic and extrinsic motivation subscales related to knowledge and experience simulation, while female students scored higher in subscales related to introjected and amotivation. The study also found no significant difference in overall academic motivation scores between public and private medical school students, but there were differences in subscale scores related to intrinsic motivation to know and experience simulation. There were no significant differences in overall academic motivation scores between hostellers and day scholars.

These findings have important implications for

medical educators, as they suggest that academic motivation may not be affected by gender or residential status but may be influenced by the type of medical school attended. It is important for medical educators to consider these factors when developing educational programs and interventions aimed at promoting academic motivation among medical students.

Future research in this area should focus on reassessing this cohort of students during their clinical years to determine if their academic motivation changes over time. A longitudinal study could provide valuable insights into how academic motivation evolves during medical training and how it affects performance and career choices. A qualitative exploration of medical students' academic motivation could also provide a deeper understanding of the factors that contribute to their motivation or lack thereof. Such research could help educators develop effective strategies to promote academic motivation and support medical students throughout their training.

REFERENCES

1. Stegers-Jager KM, Cohen-Schotanus J, Themmen APN. Motivation, learning strategies, participation and medical school performance. Med Educ. 2012 Jul;46(7):678–88.
2. Klassen RM, Klassen JRL. Self-efficacy beliefs of medical students: a critical review. Perspect Med Educ [Internet]. 2018 Apr 1 [cited 2023 Dec 17];7(2):76–82. Available from: https://pubmed.ncbi.nlm.nih.gov/29484552/.
3. Burgoon JM, Meece JL, Granger NA. Self-efficacy's influence on student academic achievement in the medical anatomy curriculum. Anat Sci Educ [Internet]. 2012 [cited 2023 Dec 17];5(5):249–55. Available from: https://pubmed.ncbi.nlm.nih.gov/22653759/.
4. Brydges R, Butler D. A reflective analysis of medical education research on self-regulation in learning and practice. Med Educ [Internet]. 2012 Jan 1 [cited 2023 Dec 22];46(1):71–9. Available from: https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2923.2011.04100.x
5. Patel R, Green W, Shahzad MW, Church H, Sandars J. Using a self-regulated learning-enhanced video feedback educational intervention to improve junior doctor prescribing. Med Teach [Internet]. 2020 Aug 2 [cited 2023 Dec 22];42(8):886–95. Available from: https://pubmed.ncbi.nlm.nih.gov/32301633/
6. Demirören M, Turan S, Öztuna D. Medical students' self-efficacy in problem-based learning and its relationship with self-regulated learning. Med Educ Online [Internet]. 2016 [cited 2023 Dec 22];21(1). Available from: https://pubmed.ncbi.nlm.nih.gov/26987386/
7. Wang YH, Kao PF, Liao HC. The Relationship of Vocabulary Learning Strategies and Self-Efficacy with Medical English and Terminology. http://dx.doi.org/101177/0031512516628377 [Internet]. 2016 Feb 1 [cited 2023 Dec 22];122(1):47–66. Available from: https://journals.sagepub.com/doi/10.1177/0031512516628377
8. Moulaert V, Verwijnen MGM, Rikers R, Scherpbier AJJA. The effects of deliberate practice in undergraduate medical education. Med Educ. 2004 Oct;38(10):1044–52.
9. Sobral DT. What kind of motivation drives medical students' learning quests? Med Educ [Internet]. 2004 Sep [cited 2023 Dec 22];38(9):950–7. Available from: https://pubmed.ncbi.nlm.nih.gov/15327676/
10. (27) (PDF) A Motivational Approach to Self: Integration in Personality [Internet]. [cited 2023 Dec 22]. Available from: https://www.researchgate.net/publication/21026291_A_Motivational_Approach_to_Self_Integration_in_Personality
11. Ryan RM, Deci EL. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. Contemp Educ Psychol. 2000 Jan 1;25(1):54–67.
12. Kusurkar RA, Croiset G, Galindo-Garré F, Ten Cate O. Motivational profiles of medical students: Association with study effort, academic performance and exhaustion. BMC Med Educ [Internet]. 2013 Jun 19 [cited 2023 Dec 22];13(1):1–8. Available from: https://bmcmededuc.biomedcentral.com/articles/10.1186/1472-6920-13-87
13. Deci EL, Ryan RM. The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. 2000;
14. Javaeed A, Asghar A, Allawat Z, Haider Q, Mustafa KJ, Ghauri SK. Assessment of Academic Motivation Level of Undergraduate Medical Students of Azad Kashmir, Pakistan. Cureus [Internet]. 2019 Mar 22 [cited 2023 Dec 22];11(3). Available from: https://pubmed.ncbi.nlm.nih.gov/31183277/
15. Karin B, Utvaer S, Haugan G. The Academic Motivation Scale: Dimensionality, Reliability, and Construct Validity Among Vocational Students. Nord J Vocat Educ Train [Internet]. 2016 Nov 8 [cited 2023 Dec 22];6(2):17–45. Available from: https://njvet.ep.liu.se/article/view/3218
16. Guay F, Vallerand RJ, Blanchard C. On the assessment of situational intrinsic and extrinsic motivation: The Situational Motivation Scale (SIMS). Motiv Emot [Internet]. 2000 [cited 2023 Dec 22];24(3):175–213. Available from: https://link.springer.com/article/10.1023/A:1005614228250
17. (27) (PDF) Effect of Intrinsic and Extrinsic Motivation on Academic Performance [Internet]. [cited 2023 Dec 22]. Available from: https://www.researchgate.net/publication/255712855_Effect_of_Intrinsic_and_Ex-

trinsic_Motivation_on_Academic_Performance

18. Vallerand RJ, Pelletier LG, Blais MR, Brière NM. ACADEMIC MOTIVATION SCALE (AMS-C 28) COLLEGE (CEGEP) VERSION. 1992;
19. Khan KW, Ramzan M, Zia Y, Zafar Y, Khan M, Saeed H. Factors Affecting Academic Performance of Medical Students. Life Sci. 2020 Feb 13;1(1):4.
20. Gender differences in academic performance among Arab medical students - PubMed [Internet]. [cited 2023 Dec 22]. Available from: https://pubmed.ncbi.nlm.nih.gov/15573220/
21. Sattar H, Zain Z, Sheikh AM, Saleem A, Arshad M, Meraj L. A comparison of Male and Female Medical Student's Motivation towards Career Choice. J Rawalpindi Med Coll [Internet]. 2021 Sep 30 [cited 2023 Dec 22];25(3):382–5. Available from: https://www.journal-rmc.com/index.php/JRMC/article/view/1616
22. Diwan V, Minj C, Chhari N, De Costa A. Indian medical students in public and private sector medical schools: Are motivations and career aspirations different? - Studies from Madhya Pradesh, India. BMC Med Educ [Internet]. 2013 Sep 15 [cited 2023 Dec 22];13(1):1–6. Available from: https://bmcmededuc.biomedcentral.com/articles/10.1186/1472-6920-13-127
23. Saad Ahmed M, Hassan F, Ullah S, Shaid F, Sabih M. Strength of Motivation among Public and Private Dental Students for the Field of Education: A Comparative and Correlational Study. J Coll Physicians Surg Pakistan [Internet]. 2021 [cited 2023 Dec 22];31(04):461–5. Available from: https://doi.org/10.29271/jcpsp.2021.04.461