Jurnal Ilmiah Mahasiswa Kedokteran Universitas Airlangga

JUXTA: Jurnal Ilmiah Mahasiswa Kedokteran Universitas Airlangga
2025 January, XVI (01)

ORIGINAL ARTICLE

Academic Motivation and Achievement in Undergraduate Students of the Medical Program, Faculty of Medicine, Tanjungpura University, during the COVID-19 Pandemic

Imanda Yandion[1], Iit Fitrianingrum[2*], Sari Eka Pratiwi[2]

[1]Faculty of Medicine, Tanjungpura University, Pontianak, Indonesia.
[2]Department of Biology and Pathobiology, Faculty of Medicine, Tanjungpura University, Pontianak, Indonesia.

* Correspondence: iit.fitrianingrum@medical.untan.ac.id

ABSTRACT

Introduction: Academic motivation is said to be correlated to academic achievement. The coronavirus disease (COVID-19) pandemic has led to a distance learning policy allowing students to continue their education. Distance learning has several impacts that can result in students' academic motivation. Therefore, it affects academic achievement. This study examined the relationship between academic motivation and achievement in undergraduate students of the Medical Study Program, Faculty of Medicine, Tanjungpura University, during the COVID-19 Pandemic.

Methods: This was an observational analytic study with a cross-sectional approach. A total of 169 students (n=169) were selected through a stratified random sampling technique. Data was processed using the International Business Machines Corporation (IBM) Statistical Package for Social Sciences (SPSS) version 24.0. The variables were measured using the Academic Motivation Scale (AMS)—Short Indonesian Language Version questionnaire and the student's Grade Point Average (GPA). The Spearman Rank correlation test showed a significance value of 0.096 (Sig>0.05; r=0.128).

Results: The results showed that most of the samples had very high academic motivation (71.6%) and academic achievement in the very satisfactory category (51.5%). Spearman Rank correlation test showed a significance value of 0.096 (Sig>0.05; r=0.128).

Conclusion: There was no correlation between academic motivation and achievement in undergraduate students of the Medical Program, Faculty of Medicine, Tanjungpura University, during the COVID-19 pandemic.

Highlights:
1. Most students had very high academic motivation and achievement in the very satisfactory category.
2. No correlation between academic motivation and achievement in undergraduate students.

ARTICLE INFO

Article history:
Received 14-03-2023
Received in revised form 19-11-2024
Accepted 18-12-2024
Available online 10-01-2025

Keywords:
Academic motivation,
Academic achievement,
Education,
Human & medicine,
Medical student.

Cite this as:
Yandion I, Fitrianingrum I, Pratiwi SE. Academic Motivation and Achievement in Undergraduate Students of the Medical Program, Faculty of Medicine, Tanjungpura University, during the COVID-19 Pandemic. *JUXTA J Ilm Mhs Kedokt Univ Airlangga* 2025; 16: 30–35.

JUXTA: Jurnal Ilmiah Mahasiswa Kedokteran Universitas Airlangga
p-ISSN: 1907-3623; e-ISSN: 2684-9453
DOI: https://doi.org/10.20473/juxta.V16I12025.30-35

Introduction

The coronavirus disease (COVID-19) pandemic led to new policies to break the chain of transmission of COVID-19 in Indonesia.[1] It had an impact on the education sector. Restrictions on social activities led to changes in education learning methods during the COVID-19 pandemic in Indonesia. The learning process changed to online to prevent the spread of COVID-19.[2] Distance learning caused problems for students while they were performing it.[3] The obstacles students face were internet quota, which must always be available, poor network connection at student residences, availability of devices for learning, such as laptops, and material that is difficult to understand compared to face-to-face learning.[4]

These obstacles resulted in pressure and stress for students during distance learning.[5] The study conducted by Zhang, *et al*. (2013), which discussed academic motivation and burnout, showed that students who did not experience burnout had the highest value of intrinsic motivation.[6] Students who were depressed had high scores on extrinsic motivation and motivation.[6] Academic motivation refers to the causes of student behavior in several ways related to academic functioning and success.[7] Each individual has a different academic motivation to achieve achievement.[7] The motivation within oneself affects academic achievement through in-depth strategies for learning and higher learning efforts.[8]

Amrai, *et al*. (2011) stated that academic motivation and achievement correlated positively and significantly.[9] Other scales, such as assignments, effort, competition, and social care, had a significant relationship with academic achievement.[9] Academic achievement is a learning process that results in changes in knowledge, understanding, application, analytical power, synthesis, and evaluation. As cited by Retnowati, *et al*. (2016), Bloom stated that student academic achievement is a process experienced by students during lectures in obtaining and achieving the desired goals.[10] An academic achievement that marks student success can be seen through the Grade Point Average (GPA).[11]

The impact of the COVID-19 pandemic felt by students can result in student academic motivation, thereby affecting academic achievement. This study examined the relationship between academic motivation and achievement in undergraduate students of the Medical Study Program, Faculty of Medicine, Tanjungpura University, during the COVID-19 pandemic.

Methods

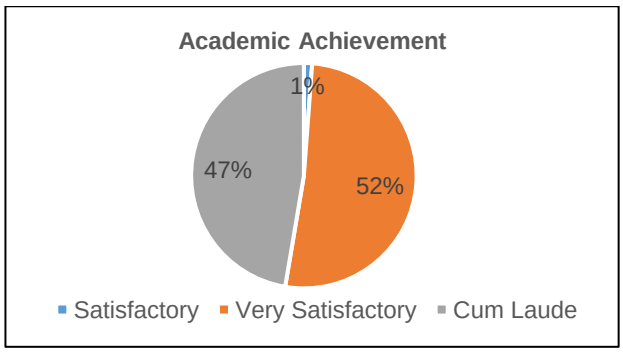
This quantitative study used an observational analytic study with a cross-sectional approach performed at the Faculty of Medicine, Tanjungpura University, from July 2021-October 2022. The population in this study were all active undergraduate students of the Medical Study Program batch 2019-2021. The sample in this study were all active undergraduate students of the Medical Study Program batch 2019-2021 at the Faculty of Medicine, Tanjungpura University, who were undergoing online lectures during the COVID-19 pandemic. The sample in this study was taken using a stratified random sampling technique, and results from Slovin's formula for each batch were taken proportionally with details for 2019 of 54 people, 2020 of 57 people, and 2021 of 58 people. Samples were excluded if the sample included students on academic leave or had taken academic leave during the COVID-19 pandemic and had a Lie-Score Minnesota Multiphase Personality Inventory (L-MMPI) score ≥10.[12]

The research instrument used questionnaires, namely the L-MMPI questionnaire and the Academic Motivation Scale (AMS) questionnaire, a short version of the Vallerand model adapted from the study by Natalya (2018), and GPA in active students' batch 2019-2021 was obtained from the academic section of the Medical Study Program, Faculty of Medicine.[12] Data was processed using the International Business Machines Corporation (IBM) Statistical Package for Social Sciences (SPSS) version 24.0.[13] This study used a univariate analysis to describe the frequency of each variable studied. The bivariate analysis used was the Rank Spearman correlation test. The Research Ethics Committee of the Faculty of Medicine, the University of Tanjungpura, approved this study through Certificate of Ethical Review No: 2760/UN22.9/PG/2022.

Results

Table 1 shows that most of the sample in this study had very high academic motivation (71.6%), and academic achievement was in the very satisfactory category (51.5%). The sample of this study was primarily women (56.2%), the sample entered the Medical Study Program through Joint Selection for State University Entrance (SBMPTN) (34.9%), the area of origin was Pontianak (30.2%), the type of work of both parents was not health workers (79.3%), the sample had siblings (95.9%), and participated in organizational activities (62.7%).

Figure 1 shows that most medical students' GPAs were in the very satisfactory category of 87 students (51.5%). Meanwhile, 80 students (47.3%) had GPAs in the cum laude category, and two students with GPAs in the satisfactory category repeated the module (1.2%).



Source: Secondary data, 2022

Figure 1. Frequency distribution based on GPA of medical students batch 2019-2020

Table 1. Sample distribution based on demographic characteristics

Demographic Characteristics	Total	
	n	%
Academic Motivation		
Average	6	3.6
High	42	24.9
Very high	121	71.6
Academic Achievement		
Satisfactory	2	1.2
Very satisfactory	87	51.5
Cum laude	80	47.3
Gender		
Male	74	43.8
Female	95	56.2
Entrance Selection		
National selection for state university entrance (SNMPTN)	35	20.7
Joint selection for state university entrance (SBMPTN)	59	34.9
Independent	57	33.7
Service bond	18	10.7
Origin		
Pontianak	51	30.2
Singkawang	19	11.2
Mempawah	7	4.1
Sambas	15	8.9
Sintang	17	10.1
Sanggau	10	5.9
Sekadau	3	1.8
Kubu Raya	5	3.0
Kapuas Hulu	8	4.7
Bengkayang	5	3.0
Ketapang	3	1.8
Landak	2	1.2
Melawi	1	0.6
North Kayong	2	1.2
Outside West Borneo	21	12.4
Type of Parental Occupation		
Both are health workers	14	8.3
One health worker	21	12.4
Both are not health workers	134	79.3
Siblings		
None	7	4.1
Have siblings	162	95.9
Campus Organizations		
Participate in the organization	106	62.7
None	63	37.3

Source: Research data, processed

Table 2 shows that all data had a standard deviation value smaller than the mean. The standard deviation is a way of measuring the variation of a group of quantitative data. The greater the standard deviation price, the more varied or heterogeneous the numbers in the data are. A low standard deviation describes the data as clustering around the mean, and a high standard deviation indicates the data is more spread out. A standard deviation smaller than the mean value indicates low variable data deviation. Analysis of academic motivation scores showed that 169 respondents had the highest average score on extrinsic motivation (5.22±0.95).

Table 2. Distribution of mean and standard deviation based on academic motivation and achievement

Academic Motivation	All Subjects	Academic Achievement		
		Satisfactory	Very Satisfactory	Cum Laude
Intrinsic Motivation (Mean±SD)	4.92±0.90	4.86±0.36	4.83±0.96	5.02±0.82
Intrinsic motivation to know (Mean±SD)	5.19±0.79	5.00±0.00	5.19±0.82	5.19±0.76
Intrinsic motivation to accomplish things (Mean±SD)	4.94±0.90	4.83±0.41	4.84±0.94	5.06±0.83
Intrinsic motivation to experience stimulation (Mean±SD)	4.63±0.92	4.75±0.50	4.46±0.98	4.81±0.83
Extrinsic Motivation (Mean±SD)	5.22±0.95	4.83±0.58	5.18±0.98	5.28±0.94
Extrinsic motivation external regulation (Mean±SD)	5.02±1.08	4.50±0.55	5.00±1.08	5.06±1.10
Extrinsic motivation introjected regulation (Mean±SD)	5.37±0.76	5.25±0.50	5.28±0.84	5.46±0.64
Extrinsic motivation identified regulation (Mean±SD)	5.53±0.74	5.00±0.00	5.53±0.74	5.55±0.74
Amotivation (Mean±SD)	2.15±1.30	2.25±0.50	2.17±1.42	2.12±1.17

Source: Research data, processed

Extrinsic motivation introjection regulation had the highest score (5.25±0.50) in the satisfactory category. Extrinsic motivation identified regulation scored the highest in the very satisfactory (5.53±0.74) and cum laude (5.55±0.74) groups. Amotivation showed a low score in all category groups.

Table 3. Bivariate & distribution analysis based on academic motivation and achievement

Academic motivation	Academic Achievement					
	Satisfactory		Very Satisfactory		Cum Laude	
	n	%	n	%	n	%
Average	0	0	4	2.4	2	1.2
High	1	0,6	25	14.8	16	9.5
Very High	1	0,6	58	34.3	62	36.7
Spearman's Rho	Sig (2-tailed) = 0.096, r = 0.128					

Source: Research data, processed

Spearman's Rank bivariate analysis, shown in Table 3, showed that there was no correlation between academic motivation and achievement in undergraduate students of the Medical Program, Faculty of Medicine, Tanjungpura University, during the COVID-19 pandemic because the Sig (2-tailed) value was 0.096 greater than α (alpha) = 0.05.

Discussion

The results showed that the sample was mostly women. According to demographic characteristics, the population of this study also primarily consisted of female students (55.1%). A study stated that male students are more motivated to implement their knowledge because of income, status, and career advancement.[14] In contrast, female students are more intrinsically motivated in terms of relationships with patients.[14]

Based on the results of this study, most of the samples entered the Medical Study Program through the SBMPTN entry route. The research population that took the SBMPTN route to enter the Medical Study Program was 30.48%. All students are motivated when they enter medical school. Goel, *et al*. (2018) stated that humanitarian factors are one of the main motivations for medical students in choosing a medical school.[15] Humanitarian motivation shows the desire to help others and serve their homeland.[15] Another study suggested that the selection procedure through tests can temporarily stimulate student motivation through increased autonomy, competence, and relatedness.[16]

Tanjungpura University medical students comprised West Borneo students, representing two cities, 12 districts, and several areas outside West Borneo. The results of this study showed that most of the samples came from Pontianak. Most of the sample entered the Medical Study Program even though the study program did not follow the work of the sample's parents, who were not health workers. Only a tiny portion of the research sample chose the Medical Study Program according to the type of work of both parents or one of the parents as health workers. Parents who work as doctors or health workers become role models, influencing their children to choose health worker jobs.[17] The motivation of students who choose medicine is following their parents' work, namely the hope that they can take over the family hospital or clinic and see their parents work as health workers, giving rise to high external motivation.[18]

The results of this study described that the average sample had siblings. Sibling relationships can affect academic motivation and achievement. Mirah (2014) stated that good sibling relationships characterize interactions between siblings who live in the same house or do not live together.[19] Low competition between siblings can increase academic motivation. Thus, quality sibling relationships can increase academic motivation and achievement.[19]

The results of this study showed that most of the samples actively participated in the organization. Student participation in organizations has a positive impact, namely the formation of student character values, communication skills, emotions in dealing with conflict, and maturity in thinking. The organization allows students to develop and optimize their interests and talents.[20] The experience of participating in an organization can affect academic motivation in students.[21] Undergraduate students of the Medical Study Program, Faculty of Medicine, Tanjungpura University, had very high academic motivation based on the results of this study. It showed that most respondents tend to perform tasks successfully and assess performance spontaneously.[22]

The results showed that all medical students found the highest average value of extrinsic motivation. A study with a phenomenological design related to academic motivation in medical students stated that extrinsic motivation is obtained from the role of family and friends.[23] Sentences of encouragement, concern, and invitations to study together are the roles of friends who can improve their abilities.[23]

Grade Point Average is one indicator that determines student academic achievement and is an evaluation tool for the success of the lecture process. The results showed that most undergraduate students in the Medical Study Program, Faculty of Medicine, Tanjungpura University, had very satisfactory academic achievements.[24] The GPA of medical students also comes from the accumulated value of skills, knowledge, practical exams, and others. Lisiswati, *et al*. (2022) said that low academic achievement is influenced by learning strategies that are lacking in dealing with medical material, which is a lot, difficult to understand, and difficult to concentrate on and manage study time, which causes failure due to a lack of ability.[25] Student psychology and health problems also affect student learning processes, resulting in low academic achievement.[25] Shawwa, *et al*. (2015) stated that long-term

use of social media determines student academic achievement.[26]

Extrinsic motivation identified regulation had the highest score in the very satisfying and cum laude groups. Students in this category described behavior that is free to choose to participate because they assess and feel that this is important.[12] Extrinsic motivation introjection regulation had the highest score in the satisfying category. Introjected regulation described individual behavior that internalizes the reasons for its actions and governs external or environmental demands to avoid internal problems such as shame or guilt.[12]

After statistical tests, this study showed no correlation between academic motivation and achievement in undergraduate students of the Medical Program, Faculty of Medicine, Tanjungpura University, during the COVID-19 pandemic. A study conducted on medical students at the University of Indonesia regarding motivation and academic achievement showed different results, namely, academic motivation directly affects academic achievement.[27]

Several factors, including academic motivation, learning media, learning processes, and learning atmosphere or environment can influence academic achievement.[17] Medical students can use practicum modules, PowerPoint, introductory lectures, applications, anatomical atlas textbooks, lecture recordings, or sources from the Internet. Different learning media provide different learning experiences.[28] Maximum learning results are obtained from a stimulus, response, repetition, and reinforcement. The problem-based learning approach encourages students to learn independently.[29] A good learning environment can maximize physical, emotional, and external motivators. Physical factors include classes, tutorials, seminars, lectures, comfortable seating arrangements, and minimal external distractions. Emotional factors in courses and curricula must be relevant and student-centered.[30] External motivators such as courses and the curriculum must be relevant and student-centered. Academic achievement can also be influenced by strategic and in-depth learning styles, learning patterns that suit students, concentration while studying, and time using social media.[31]

This study conducted statistical tests between the academic motivation and achievement subscales. The results showed a correlation between extrinsic motivation introjection regulation subscale and academic achievement in active undergraduate students of the Medical Study Program, Faculty of Medicine, Tanjungpura University. The value of the correlation coefficient obtained the direction of correlation between two variables in the same direction and was very weak. It means that when the extrinsic motivation of the student introjection regulation subscale is high, academic achievement will also be high. Extrinsic motivation in the introjection regulation subscale reflects behavior based on pressure to achieve success, avoid guilt, shame, or anxiety due to failure, or gain recognition from others.[12] A study conducted in Japan suggested that students on the Asian continent are more likely to experience shame and dishonor (both for themselves and their families) when their academic achievement results are unsatisfactory.[32] Asian cultures tend to attribute their success to other situations or people.[32]

Strength and Limitations

The strength of this study is that the distribution of the subscales and categories of motivation and academic achievement was clearly described, enabling a more easily understood distribution of data. The limitation of this study is that the research was not followed by controlling factors that could affect academic achievement and motivation during the COVID-19 pandemic.

Conclusion

Most medical students at the Faculty of Medicine, University of Tanjungpura, had very high academic motivation and satisfactory academic achievement. The results showed that during the COVID-19 pandemic, undergraduate students in the Medical Program at Tanjungpura University did not show a correlation between academic achievement and motivation. Future research can conduct qualitative research on academic motivation and achievement and the factors influencing academic achievement.

Acknowledgments

The first author would like to thank the lecturers who assisted and the medical students who participated in this study.

Conflict of Interest

The authors declared there is no conflict of interest.

Funding

This study did not receive any funding.

Ethical Clearance

This study had received approval from the Research Ethics Committee of the Faculty of Medicine, Tanjungpura University, through Certificate of Ethical Review Number 2760/UN22.9/PG/2022 on 24-04-2022.

Authors' Contributions

Designed the study: IY, IF, and SEP. Collected data, designed the manuscript, and performed a statistical analysis: IY. Supervised the results and discussions: IF and SEP. All authors reviewed and approved the final version of the manuscript**.**

References

1. Siahaan M. Dampak Pandemi COVID-19 terhadap Dunia Pendidikan. *J Kaji Ilm* 2020; 1: 73–80. [Journal]
2. Safitri RAN, Nugraheni N. Dampak COVID-19 terhadap Proses Pembelajaran Daring di Sekolah

Dasar. In: *Prosiding Seminar Nasional Institut Agama Hindu Negeri Tampung Penyang Palangka Raya*. Palangka Raya: Institut Agama Hindu Negeri Tampung Penyang Palangka Raya, 2020. pp. 46–54. [Proceeding]
3. Agustina M, Kurniawan D. Motivasi Belajar Mahasiswa di Masa Pandemi COVID-19. *J Psikol Perseptual* 2020; 5: 120. [Journal]
4. Palimbong A. Pelaksanaan Pembelajaran Daring pada Masa Pandemi COVID-19 di Program Studi Pendidikan PKn Universitas Tadulako. *Jurpis J Pendidik Ilmu Sos* 2020; 17: 185–198. [Journal]
5. Rahardjo W, Qomariyah N, Mulyani I, Andriani I. Social Media Fatigue pada Mahasiswa di Masa Pandemi COVID-19: Peran Neurotisisme, Kelebihan Informasi, Invasion of Life, Kecemasan, dan Jenis Kelamin. *J Psikol Sos* 2021; 19: 142–152. [Journal]
6. Zhang X, Klassen R, Wang Y. Academic Burnout and Motivation of Chinese Secondary Students. *Int J Soc Sci Humanit* 2013; 3: 134–138. [Journal]
7. Rumbaugh DM, King JE, Beran MJ, Washburn DA, Gould K. A Salience Theory of Learning. In: Seel NM (ed) *Encyclopedia of the Sciences of Learning*. Boston, MA: Springer US, 2012. pp. 1–4. [Book]
8. Kusurkar RA, Cate TJT, Vos CMP, Westers P, Croiset G. How Motivation Affects Academic Performance: A Structural Equation Modelling Analysis. *Adv Heal Sci Educ* 2013; 18: 57–69. [Springer]
9. Amrai K, Motlagh SE, Zalani HA, Parhon H. The Relationship between Academic Motivation and Academic Achievement Students. *Procedia - Soc Behav Sci* 2011; 15: 399–402. [ScienceDirect]
10. Retnowati DR, Fatchan A, Astina IK. Prestasi Akademik dan Motivasi Berprestasi Mahasiswa S1 Pendidikan Geografi Universitas Negeri Malang. *J Pendidik Teor Penelitian, dan Pengemb* 2016; 1: 521–525. [Journal]
11. Trilestari DI, Widowati A, Surjawati S. Faktor-Faktor yang Mempengaruhi Prestasi Akademik : Studi Kasus pada Mahasiswa Program Studi Akuntansi Universitas Semarang. *J Din Sos Budaya* 2017; 18: 39. [Journal]
12. Natalya L. Validation of Academic Motivation Scale: Short Indonesian Language Version. *ANIMA Indones Psychol J*; 34. 25 October 2018. [Journal]
13. Nie NH, Bent DH, Hull CH. Statistical Package for the Social Sciences (SPSS), (2016). [Website]
14. Muntean LM, Nireștean A, Sima-Comaniciu A, Mărușteri M, Zăgan ȚA, Lukacs E. The Relationship between Personality, Motivation and Academic Performance at Medical Students from Romania. *International Journal of Environmental Research and Public Health*; 19. 2022. [Journal]
15. Goel S, Angeli F, Dhirar N, Singla N, Ruwaard D. What Motivates Medical Students to Select Medical Studies: A Systematic Literature Review. *BMC Med Educ* 2018; 18: 16. [Journal]
16. Wouters A. Effects of Medical School Selection on Student Motivation: A PhD Thesis Report. *Perspect Med Educ*. Epub ahead of print December 2017. [Journal]
17. Jasmon A, Masturah F, Nugraha NS, Syakurah RA, Afifah A, Siburian R. Parental Influences on Medical Students' Self-Efficacy and Career Exploration in Collectivist Culture. *J Educ Health Promot*; 9, (2020). [Journal]
18. Watari T, Nagai N, Kono K, Onigata K. Background Factors Associated with Academic Motivation for Attending Medical School Immediately after Admission in Japan: A Single-Center Study. *J Gen Fam Med* 2022; 23: 164–171. [Journal]
19. Mirah FFE. *Hubungan antara Sibling Relationship dan Motivasi Berprestasi pada Remaja yang Kedua Orangtuanya Bekerja*. Universitas Indonesia Jakarta, (2014). [Website]
20. Wahidah W, Mahyiddin M. Peran Organisasi Kemahasiswaan dalam Pembinaan Karakter Masyarakat. *Al-Ikhtibar J Ilmu Pendidik* 2023; 10: 13–29. [Journal]
21. Cahyorinartri N. Motivasi Mahasiswa Berorganisasi di Kampus. *J Psikol INSIGHT* 2022; 2: 27–38. [Journal]
22. Blašková M, Tumová D, Blaško R, Majchrzak-Lepczyk J. Spirals of Sustainable Academic Motivation, Creativity, and Trust of Higher Education Staff. *Sustainability*; 13. 2021. [Journal]
23. Romadhoni R, Rahayu GR, Khoiriyah U. Identifikasi Motivasi dan Dukungan yang Diperlukan Mahasiswa Retaker Uji Kompetensi Mahasiswa Program Profesi Dokter. *J Pendidik Kedokt Indones Indones J Med Educ* 2021; 10: 75–85. [Journal]
24. Riezky AK, Sitompul AZ. Hubungan Motivasi Belajar dengan Indeks Prestasi Kumulatif Mahasiswa Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Abulyatama. *J Aceh Med* 2017; 1: 79–86. [Journal]
25. Lisiswanti R, Sari MI, Swastyardi D. Factors Affecting Low Academic Achievement of Undergraduate Medical Students: Student Experience. *J Pendidik Kedokt Indones Indones J Med Educ* 2022; 11: 109–118. [Journal]
26. Al Shawwa L, Abulaban AA, Abulaban AA, Merdad A, Baghlaf S, Algethami A, *et al*. Factors Potentially Influencing Academic Performance among Medical Students. *Adv Med Educ Pract* 2015; 6: 65–75. [Journal]
27. Yogie Y, Suryadi S, Soefijanto TA. Contribution of Learning Motivation and Stress on Academic Achievement of Medical Faculty Students. *J Educ Res Eval* 2021; 5: 250–257. [Journal]
28. Intania SBF, Hakim R, Anisa R. Pengaruh Jenis Pengalaman Belajar terhadap Performa Akademik Praktikum Anatomi dan Retensi Mahasiswa Kedokteran selama Pembelajaran Daring. *J Kedokt Komunitas* 2022; 10: 1–11. [Journal]
29. Sari MI, Lisiswanti R, Oktaria D. Pembelajaran di Fakultas Kedokteran: Pengenalan bagi Mahasiswa Baru. *J Kedokt Univ Lampung* 2016; 1: 399–403. [Journal]
30. Saiyad S. Educational Environment and Its Application in Medical Colleges. *J Res Med Educ Ethics* 2020; 10: 3–9. [Journal]
31. Alzahrani SS, Soo Park Y, Tekian A. Study Habits and Academic Achievement among Medical Students: A Comparison between Male and Female Subjects. *Med Teach* 2018; 40: S1–S9. [Journal]
32. Nomura O, Wiseman J, Sunohara M, Akatsu H, Lajoie SP. Japanese Medical Learners' Achievement Emotions: Accounting for Culture in Translating Western Medical Educational Theories and Instruments into an Asian Context. *Adv Heal Sci Educ* 2021; 26: 1255–1276. [Springer]