Association of Perception of Medical Students on Learning Environment with Academic Performance and Personal Growth: A Cross Sectional Psychology Based Study

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Abstract

Introduction : The term "medical school learning environment" refers to the various contexts—physical, social, and psychological—in which students of medicine study and develop professionally.This study aims to evaluate the association of perception of medical students on learning environment with academic performance and personal growth.

Material and Methods: This study is a cross-sectional study on 435 medical students for a period of 1 year. MBBS students above 18 years of age and those who are willing to give consent were included in our study. Excluded from the research were first-year medical students who had not yet finished their first year of medical school as well as students who were currently undergoing any kind of psychological management, including cognitive or behavioural therapy, medication, or a combination of the three. These students' responses could have been skewed due to the effect that treatment had on their psychological status.

Results: Around 40% of the students belongs to 2nd year, 36.3% belongs to third year and 23.6% belongs to final year. The overall mean scores of John Hopkins Learning Environment Scale score among second year medical school students were 63.54 ± 9.99, on third year medical school students were 58.28 ± 10.42 and on final year medical school students were 54.78 ± 11.14. The personal growth scale score among second year medical school students were 37.32 ± 5.25, on third year medical school students were 34.55 ± 5.72 and on final year medical school students were 33.73 ± 5.80. The mean academic performance score among second year medical school students were 49.52 ± 12.79, on third year medical school students were 48.43 ± 11.67 and on final year medical school students were 49.30 ± 12.28.

Conclusion: Overall the John Hopkin environment learning scale scores, personal growth scores and academic performance were high among second year students than final year students. The correlation of academic performance were negatively correlated between learning environment and personal growth scores. On the other hand learning environment scores were statistically significantly correlated with personal growth scores.

Keywords: Learning environment, personal growth, academic performance, John Hopkins Learning Environment Scale, Psychology Study

Introduction

Students' personal space, social communication, the curriculum, and the psychological setting in which they are studying are all components of the learning environment in medical colleges. The manner in which the students adapt to and derive meaning from their respective learning environments has an effect on the manner in which these future doctors develop behaviours and establish identities for themselves[1-4]. Recent studies have focused on researching the aspects that influence the ways in which medical students think about the learning environment. It was discovered that students who had a more positive opinion of the learning environment performed better on tests administered at universities[5]. During their time in clinical rotations, these students devote a greater portion of their time to shadowing clinicians and taking part in ward rounds[6,7].and it has been shown that they have reached a higher level of personal growth [3,8] which ultimately leads to improved academic achievement.

The term "medical school learning environment" refers to the various contexts—physical, social, and psychological—in which students of medicine study and develop professionally. These environments can be broken down into three categories: (LE). The learning environment is one of the key variables in how students learn and develop professionally. It has an effect on the ways in which students build behaviours and identities as future doctors, and it is one of the primary factors in how students learn. [9-11] The learning space incorporates the student's most comprehensive proficiency of a teaching institution, which includes the syllabus modules, infrastructure , and cohesiveness with other students, teachers and support staffs. This is the most important aspect of the student's educational experience. In addition, the student's assessment of the learning climate, which is often referred to as the institutional ethos, is included as part of the learning environment. [12,13] Cooke and colleagues had an emphasis on the career development of medical students as a professional and asserted that the grooming supportive space is required to hone students skill on professionalism and attitude which is of greater importance. This vision is offered in a compelling piece of writing on the subject of the future of medical education that was authored by Cooke and colleagues. [14] There is evidence to suggest that learning environments in medical schools that have been optimized may improve student outcomes, whereas there is evidence to suggest that learning environments that cause distress may be associated with decreases in student empathy, wellness, and academic performance. [15-18]

In its accreditation standard MS-31-A, the Liaison Committee on Medical Education has acknowledged the significant role that the students' surroundings in the classroom play in their personal growth and has made this a requirement. This standard mandates that all medical schools "ensure that their learning environment promotes the development of explicit and appropriate professional attributes in their medical students" as well as "regularly evaluate" the quality of the learning environment that they provide for their students. The Liaison Committee on Medical Education has also recognised the significant role that the students' surroundings in the classroom play in the development of their professional and personal skills. [19]

This study is being carried out with the intention of determining the strength of connections between perceptions of the learning environment, academic performance, and personal growth at the conclusion of the pre-clinical year. Anticipating a beneficial association between one's view of the learning environment and their own personal progress as it relates to academic performance. [20] We did not know which factor would share a stronger association with learning environment scores, nor did we know how the importance of these factors might differ depending on the phase of medical school that the students were in. Previous research has not investigated the relationship between personal growth and academic performance in Indian medical students. The purpose of this study is to evaluate academic performance and personal growth in relation to students' perceptions of the learning environment in medical students, as well as to assess the association of the same.

Material and Methods

This research is a cross-sectional study that was conducted on a total of 435 medical students over the course of one year. Students enrolled in MBBS programmes who were over the age of 18 and ready to offer their consent were considered for participation in our study. Excluded from the research were first-year medical students who had not yet finished their first year of medical school as well as students who were currently undergoing any kind of psychological management, including cognitive or behavioural therapy, medication, or a combination of the three. These students' responses could have been skewed due to the effect that treatment had on their

psychological status. Students who had already received a postgraduate degree were not included in our research.
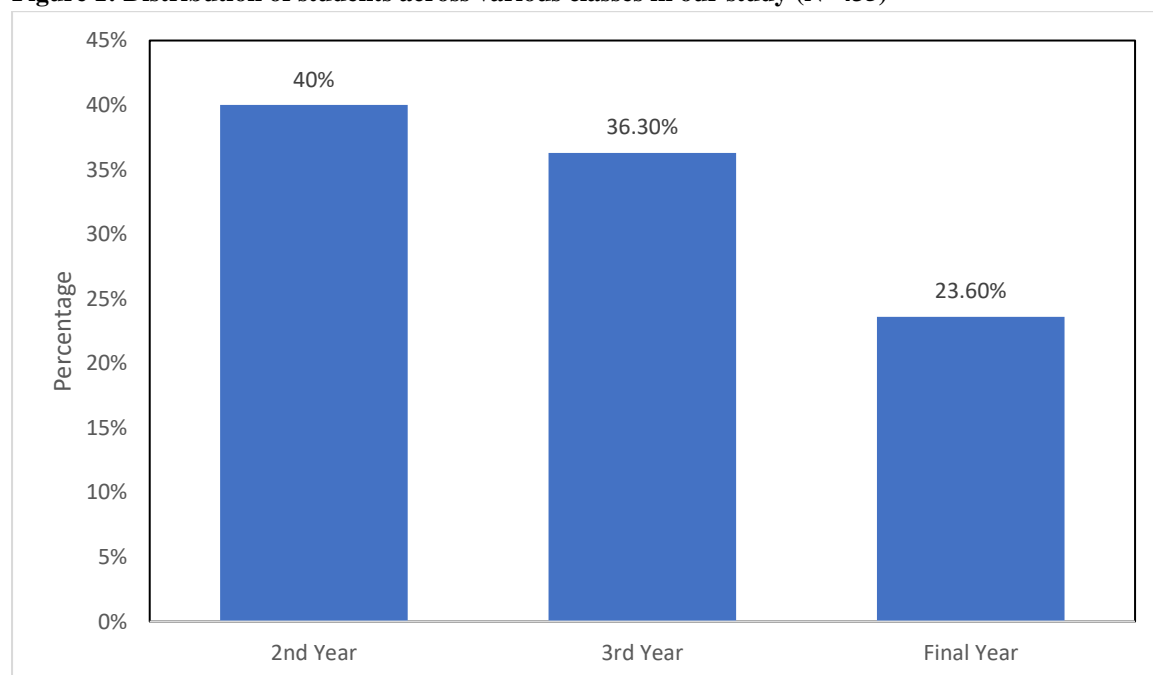
Contact was made with the class reps, and a brief meeting following each lecture was scheduled for ten minutes for each student year. One of the authors provided a concise explanation of the project, and hard copies of the peer-validated questionnaires consisting of 16 items - the John Hopkins Learning Environment Scale and personal growth scale - were obtained. Additionally, the results of the Internal Assessment Test performance were scored as follows: below 35 percent -, 35-65 percent -1, and above 65 percent -3. Everyone who took part in the study gave their written informed consent, participation was entirely voluntary, the aim of the study was explained on the very first page of the questionnaire, confidentiality and anonymity were maintained, and all of the participants were kept anonymous.

The demographic characteristics, JHLES scores, personal growth scores, and academic performance were all assessed using SPSS version 26, which was used to analyse all of the data. The analysis of variance (ANOVA) was used to determine whether or not the survey respondents were representative of all medical students by comparing the distributions of scores across different years of medical school.[20] Twenty Pearson correlation tests were carried out in order to establish a connection between academic success and other factors, including the learning environment and personal development. We considered the data to be statistically significant if the p value was less than 0.05.

Results

Around 40% of the students belongs to 2nd year, 36.3% belongs to third year and 23.6% belongs to final year (Figure 1).

Figure 1: Distribution of students across various classes in our study (N=435)

The overall mean scores of John Hopkins Learning Environment Scale score among second year medical school students were 63.54±9.99, on third year medical school students were 58.28±10.42 and on final year medical school students were 54.78±11.14. The personal growth scale score among second year medical school students were 37.32±5.25, on third year medical school students were 34.55±5.72 and on final year medical school students were 33.73±5.80. The mean academic performance score among second year medical school students were 49.52±12.79, on third year medical school students were 48.43±11.67 and on final year medical school students were 49.30±12.28 (Table 1).

Table 1: Distribution of scores across various classes among the study participants (N=435)

Slno	Variable	Total	2nd year	3rd year	Final year	p
1	JHLES	59.55±10.97	63.54±9.99	58.28±10.42	54.78±11.14	<0.001
2	PGs	35.47±5.75	37.32±5.25	34.55±5.72	33.73±5.80	<0.001
3	Academic performance	49.11±12.27	49.52±12.79	48.43±11.67	49.30±12.28	0.49

The correlation of academic performance were negatively correlated between learning environment and personal growth scores. On the other hand learning environment scores were statistically significantly correlated with personal growth scores (Table 2, Figure 2).

Table 2: Correlation of academic performance with learning environment and personal growth (N=435)

Slno	Variable	Academic performance	Learning environment	Personal growth
1	Learning environment	r=-0.013 P=0.79	1	r=0.666 p=<0.001
2	Personal growth	r=-0.056 p=0.24	r=0.666 p=<0.001	1

Figure 2: Scatter plot showing correlation of JHLES and PGS (N=435)
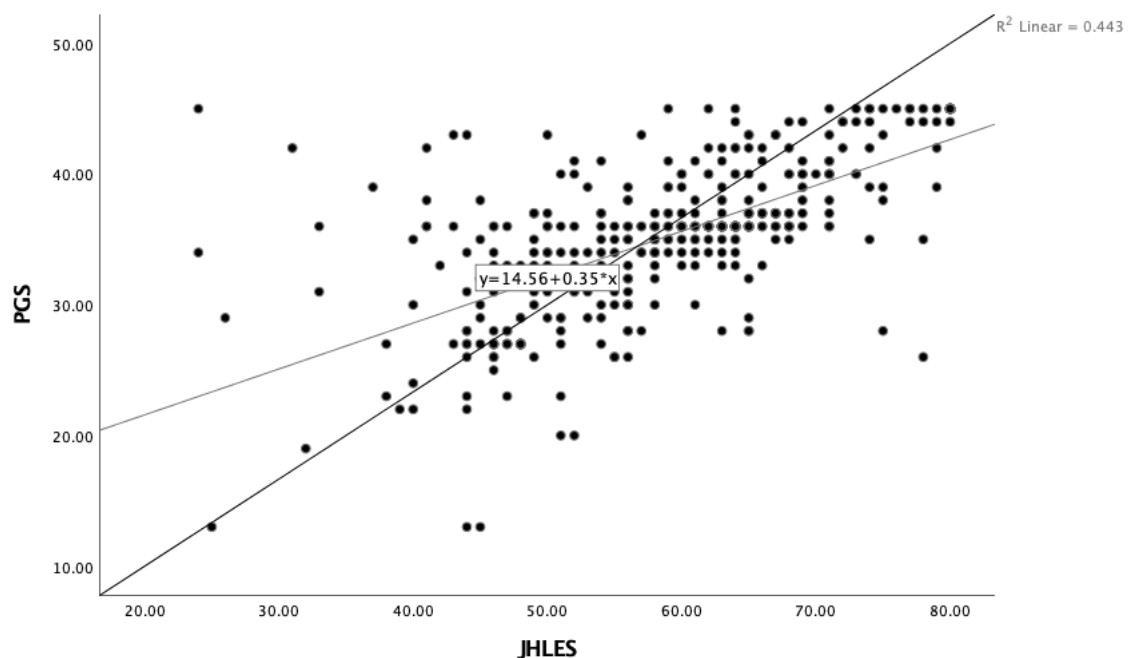
Discussion

The results of this study showed that students' overall impressions of the learning environment had a substantial impact on the mean scores on individual subscales. Second year students who gave a high rating to their overall impression of the quality of the learning environment gave domain the highest possible score on the corresponding subscale. Second year students performed better than third years students and final year students.

More over in this study academic performance was negatively correlated with learning environment and personal growth. Palmer[21] clearly described the fundamental role that teacher–learner connections play in adult education. In addition, our comprehension of the dynamics between teachers and pupils is always developing, and recent findings suggest that long-term partnerships encourage more collaboration, the growth of students' abilities, and a concentration on the promotion of reciprocal learning.[22]

Students who rated their overall perception of the learning environment as poor or terrible were more likely to have these domains show the lowest mean subscale scores. In a study of medical students' social networks and their relevance to the construction of professional identities, Haidet et al.[23] described the students' peer interactions as complicated "webs" that mitigate the effect of big events or stressors. Interdependence among students' peers is becoming an increasingly important component of their professional development as new mechanisms for continuity provide "safe places" in which students can engage in learning and introspection. [24] In addition, having a sense of belonging, either with one's coworkers or with the institution as a whole, may be a necessary condition for one to consider the learning environment to be in a healthy state. [25] Individuals who are having difficulty navigating the learning environment are likely to have scores that are significantly lower on the John Hopkins Learning Environment Scale's community of peers and meaningful engagement subscales. If this is the case, these findings may indicate a need to expand treatments beyond those that are focused on academics in order to make the most of the educational setting provided by medical schools.

The overall scores on the Johns Hopkins Learning Environment Scale vary considerably by medical school year, with students in their second year scoring higher than students in their more senior years. This outcome might be explained by an engaged student learning community that concentrates its teaching and advising resources on students who are in their second year. [26,27] On the other hand, students in their fourth year likely responded to the fact that they had more possibilities to build rewarding mentorship relationships during the course of their years of study and across clinical and research venues. We plan to monitor the outcomes of the John Hopkins Learning Environment Scale over the course of time in order to gain a deeper comprehension of whether or not these findings reflect a developmental or curricular phenomenon or a variation in student cohorts.

Limitations

It is important to keep in mind the limitations imposed by this study. To begin, for the majority of the analyses, we employed a design known as cross sectional rather than longitudinal. We came to the conclusion that this was the best course of action since we did not want to restrict the findings to just those students who begin their studies in later years. Because of this analytical plan, we were able to collect data from a greater number of students and, as a result, achieve a better level of statistical power for the cross sectional design. The results were validated using the subset sample. Second, this research was only carried out at a single establishment. It is possible that the intensity of correlations between personal progress and perceptions of the learning environment differs at different medical schools due to the fact that learning environments vary from institution to institution. Finally, due to the limitations of our research methodology, we were only able to draw conclusions regarding the relationships between the variables and not whether or not one variable predicted the other variable.

Conclusion

Students in their second year of medical school tend to have better scores on the Johns Hopkins Learning Environment Scale than students in their more senior years of medical school. It has been requested that all schools of medicine carefully analyse and evaluate the quality of the learning environment. The practical significance of the results were investigated by quantifying the amount of variance that was accounted for in the student's perception of the learning environment based on personal growth scores and academic performance. Both of these analytic approaches present original additions to the body of research on learning environments.

Ethical considerations

The participation was entirely voluntary and obtained verbal consent for the study questionnaire. We sought Institutional Ethics committee approval from SRM Medical College Hospital and Research Centre, Kattankulathur, India.

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Conceptualization: B.Gayathri (ideas; formulation or evolution of overarching research goals and aims)
Data curation: Sangeetha Raja,B.Gayathri (management activities to scrub data, and maintain research data including software code, where it is necessary for interpreting the data itself for initial use and later re-use.)
Methodology/formal analysis/validation: Sangeethe Raja,B.Gayathri(design of methodology; application of statistical methods to analyse study data, verification of data, reproducibility of results and other research outputs)
Project administration: Jamuna Rani.R
Writing – review & editing: Sangeetha Raja, B.Gayathri, Jamuna Rani.R

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