

Barrier Faced by Undergraduate Medical Students to Become Self-Regulated Learner

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ABSTRACT

Objective: To identify the barriers faced by undergraduate medical students to become a self-regulated learner.

Study Design: Sequential mixed method design; cross sectional descriptive study followed by qualitative case study.

Place and Duration of Study: Mohi_Ud_Din Islamic Medical College Mirpur AJ&K, Pakistan. January to June, 2019.

Materials and Methods: For purposive sampling, Self-Regulated Learning Perception Scale was administered to the students of third, fourth and final year. Based on scores of SRLPS eight learners from each class were selected for second part of study. Separate focus group discussions (FGD) were carried out for each class.

Results: Self-regulated learning scale was filled by 253 students. The mean score was 143.75±24. Score ranged from 70 to 200; no significant difference was found in score of genders ($p < 0.05$), and the scores of the three classes ($p < 0.05$). The major themes that emerged from FGD were related to curriculum, metacognitive strategies, issues with the infrastructure and institutional policies. Unexpected subthemes for institutional policies were 1) presence of monitoring cameras 2) enforcement of gender segregation in the college.

Conclusion: Factors related to curriculum, metacognition and infrastructure are previously known. Context specific themes emerged because of institutional policies related to gender segregation and presence of monitoring cameras.

Keywords: Academic achievement, Academic performance, Barriers, Medical Students, Self-regulated learning.

INTRODUCTION

Self-regulated learning, is a dynamic and context specific learning process where the learner metacognitively, motivationally and behaviorally remains active in their learning process.¹ It is the cyclical control of learning through several practices that involve goal focused behavior, use of diverse strategies to achieve goals, adaptation and modification of behaviors or strategies to augment learning and performance.^{2,3} Importance of self-regulated learning is widely acknowledged by many medical accrediting bodies.⁴ The accreditation body in Pakistan introduced integrated curriculum, diverse learning and teaching strategies and improvement of infrastructure of medical colleges to promote self-regulated learning.⁵ However, self-regulated learning is still under emphasized, and its learning teaching strategies and assessment modalities have not yet been developed.⁶

The existing literature suggests a strong relationship between self-regulated learning and academic achievements.^{7,8} It emphasizes the importance of coaching and tutoring in metacognitive strategies.⁹ Further literature has explored factors that affect self-regulated learning and its impact on motivation, academic self-efficacy, student's performance, metacognition; and how these elements relate to academic achievements.^{10,11,12,13,14,15} There is limited literature on the issue of factors limiting achievement of self-regulated learning in students.¹¹ Moreover, these studies ignored the specific social contexts and have limited application to countries like Pakistan. Therefore, it becomes imperative to identify the

barriers faced by our undergraduate medical students to enhance skills of self-regulated learning. The identification of barriers faced can help in making policies that may promote self-regulation and motivation. The purpose of this study is to seek students' views on barriers faced by them in achieving self-regulated learning skills.

METHODOLOGY

This was a sequential mixed method study done after approval from Ethics review board of Islamic International Medical College (Ref #Riphah/IIMC/ERC/19/0310, February 11, 2019). In the first part, a validated questionnaire 'Self-Regulated Learning Perception Scale' (SRLPS) was administered to third, fourth and final year students of academic session 2019-20 at Mohi-Ud-Din Islamic Medical College. This college is located in a rural location, curriculum is subject-based and college place emphasis on Islamic values. SRLPS is a validated instrument used in research and has a rating scale which ranges from 41 to 205.^{16,17} Lower score indicates poor self-regulated learning skills.

Purposive sampling was used to select eight participants from each academic year with low scores on the scale. These participants were invited for focused group discussion (FGD). Three separate FGDs were arranged for each class. A medical educator and a faculty member moderated the FGDs. The FGD guides were used after pilot testing. All the FGDs were audio taped. Urdu language was used for communication in these FGDs; as participants could express their opinions and experiences.

After taking informed consent, the participants were briefed about the study objectives and self-regulated learning. Data was transcribed and translated into “English” by a language expert. All personal information was removed to maintain confidentiality. The transcripts were discussed with the participants to ensure the credibility of the data.

Data was analyzed using thematic analysis on Atlas-ti8 software. Obvious content of the data and hidden meanings were both analyzed. Three out of five authors analyzed the data independently to identify codes and themes, which were finalized with consensus. First cycle coding was done with 69 codes identified in first cycle. Data was exported to excel sheet for 2nd cycle coding. Second cycle coding generated 34 codes. These codes were categorized into 13 sub-themes and finally four themes were generated.

RESULTS

A total of 253(84%) students filled the SRLPS questionnaire out of 300 medical students. There was no gender based significant difference reported on self-regulated learning scores (p< 0.2) and score of the three academic years (p<0.4). The eight students with lowest score obtained on SRLPS scale were selected from each year to participate in the FGD. Cutoff score for the third, fourth and final year were 102, 107 and 111 respectively. There were five females and three male participants out of eight from third year, four males and four female participants out of eight from fourth year and six females and two male participants out of eight from final year. The detail results of the SRLPS are shown in (Table -1).

Table 1. Self-regulated learning score in different years of Medical students on SRLPS

Variables	F (%)		Mean±std	
Medical Years	3 rd Year	Male 33(38.8)	85	145.83 ±16.6
		Female 52(61.2)		
	4th year	Male 26(31.7)	82	138±31.4
		Female 56(68.3)		
	5 th year	Male 36 (41.9)	86	146.7±21.59
		Female 50 (58.1)		
Total	253			

The participants identified a number of factors related to poor self-regulated learning.

Four main themes that were derived from qualitative data analysis were 1) curriculum, 2) metacognitive strategies; 3) issues related to infra structures and 4) institutional policies. Eight attributes relating to themes are described in (Table- 2). Remaining five attributes are briefly described below:

Theme I. Curriculum

1.1. Lack of integration

Students believed that motivation is an important aspect of self-regulated learning. Their motivation level declined at the start of first year of MBBS. Some students found them uninteresting while others were distressed by the tough study routine which was confined to classrooms. If we had

visited wards at the start of our professional years, it would have boosted up our enthusiasm.

“During 1st and 2nd year confidence level was low, so I did not enjoy those years, in 3rd and 4th year due to interaction with patients in hospitals and their attendant’s confidence levels goes high.” (P#5, FGD#3)

So main factor they mentioned was discipline-based curriculum. They need integration of subjects and clinical exposure at the start of professional years for better subject understanding.

1.2. Absence of student-centered approach

Innovation in teaching strategies in medical education helped teachers to achieve their objectives and hence most of teachers agree that student centered approach offers an enhanced learning experience. Evidence showed that active participation of students facilitates acquisition of knowledge and improves learning outcomes.

“Instead of PPT based lectures if they teach us using audio visual aids along with small group discussions, PBL, CBL, it will develop interest and concept” (Participant#4, FGD 1)

Theme II. Metacognitive strategies

Selective study for passing examination

Another factor that interfere students from becoming a self-regulated learner is the habit of selective study. They study selected topics which are most likely to appear in examination learning from experience of their seniors and usually study close to examination dates in order to pass the exam, never interested in higher grades. This selective study keeps them away from becoming a self-regulated learner.

“I prefer to make sticky notes while jotting down the main points & browse Google to get quick information for exam preparation.” (P#1, FGD#1)

Theme III. Issues pertaining to infra-structure

Less variety of patient’s exposure in hospital

Presently, early patient exposure concept is emphasized by accrediting bodies for preclinical medical student to develop adequate understanding of different clinical cases. Foremost purpose is to prepare a competent medical professional.

“I don’t get hands on experience of patients, no experience to interact with the patients or learn how to treat, and no experience of sharing of clinical issues.” (P#7, FGD#2)

Theme IV. Institutional policies

Enforcement of gender segregation

Students believe that Interactive discussion with peers in constructive environment boosts confidence and critical thinking process which is compromised due to gender segregation policy.

“Some questions demand clarity and discussion, but we are hesitant due to opposite gender, we are bound for so many unrealistic things” (P# 2, FGD#1)

The most interesting theme for the authors was unanimous view of all the participants that the presence of closed-circuit television cameras was having a poor effect on their motivation. They felt that the cameras were not for security but to keep a watch on them. In their view the

cameras deprived them of their freedom. Another unexpected theme emerged because of gender segregation.

Table 2. Barrier faced by undergraduate medical students to become self-regulated learner

Themes	Sub-themes	Quotes
Curriculum	<ul style="list-style-type: none"> • Low enthusiasm of basic science faculty • Poor feedback on assessment 	“Provision of timely and constructive feedback to students create motivation for studies, but having no project work, no result, no feedback” (P#4, FGD3)
Metacognitive strategies	<ul style="list-style-type: none"> • Lack of self-efficacy • Poor planning and time management • Personal issues 	“We all literally face a lot of degradation. our teachers humiliate & do not satisfy our queries that attitude let down my confidence.” (Participant# 3, FGD1) “Mostly parents are uneducated, support financially not morally and don’t have any proper guidance regarding studies” (P#2, FGD#2)
Issues pertaining to infra-structure	<ul style="list-style-type: none"> • Poor internet and E-library facilities 	“We need internet and e-library to search information but all in vain.”(P#6, FGD#2)
Institutional policies	<ul style="list-style-type: none"> • Presence of cameras • Dress regulation 	“There are security cameras to observe boys and girls.” (P#5, FGD#2) “We are forced to wear a uniform dress” (P#2, FGD3)

Participants had a strong belief that their teachers can improve and support their self-regulated learning practice. They had a view that teachers especially in basic sciences do not show appropriate enthusiasm. The participants emphasized that they were in the profession because their parents urged them to become doctors. Some of the students were in the habit of rote learning. The greatest motivation for the participants was to pass the examination; they gradually lost interest in academic activities that were not relevant to passing the examination. Final year participants were of the view that they lacked the skills for time management; they felt that they had no control over their activities. They wasted time watching television and communicating on social media. Family environment played a vital role in their self-regulated learning practice. Their parent’s supportive and supervisory role matters in every step of their educational carrier.

Participants expressed their view that because of rural location they see only a narrow spectrum of disease, this resulted in poor motivation.

DISCUSSION

We explored the perceptions of medical students about barriers to self-regulated learning in a community-based rural hospital where subject-based curriculum is practiced. In the first part of our study we administered SRLPS to all the students of third, fourth and final year; interestingly we

found no gender difference between the results of the girl and boy students. This observation was in contrast to common belief that girl student shows high scores in academics¹⁸ and were therefore expected to perform better on SRLPS. However, this also implies that the gender differences in varying facets of self-regulated learning needs to be explored deeply. We also found no significant difference in the scores of three classes; probably the reason was three years is too short a time to detect changes in scores, it conforms to the literature where longer time intervals are required for behavioral changes to occur. The other reason could be there is no formal training in self-regulated learning in our medical schools.¹⁹

We believed that maximum information could be extracted from participants scoring low on SRLPS; this was the rationale for selecting lowest scoring eight students from each class. Framed within the social cognitive framework of Bandura, we used FGD to encourage dialogue among the participants. Participants came from an under researched population, so the results generated were highly contextualized. Our results indicate that participants identified a range of issues starting from lack of ‘integration in curriculum’, ‘student structured approach’, ‘constructive feedback’, ‘teacher enthusiasm’ to ‘superficial metacognitive strategies’ like rote learning and underdeveloped infrastructure facilities. Consistently our participants relied on performance-oriented goals of passing examinations than learning goals enhancing self-regulated learning.²⁰These finding are consistent with the results of studies undertaken in divergent and academically advanced contexts. The impact of educational environment is significant determinant of medical students’ behavior, attitudes, knowledge and skills as well as academic achievements.²¹ An effective educational environment not only allows curricular management but also affect students’ behavior coming from assorted educational and cultural backgrounds.²²The participants of our study emphasized that enforced gender segregation, presence of closed-circuit television cameras and uniform dress regulations negatively affected self-regulated learning. The participants resented these policies and, in their view, it affected their motivation, self-efficacy, confidence and their freedom.

Studies suggest that the students prefer a particular metacognitive strategy with a specific focus on SRL depending on the context. This study is an important step in understanding the barriers to self-regulated learning faced by medical students who come from and under researched context. The idea of self-regulated and life-long learning has not been fully actualized in our system of medical education.¹⁹ Our study shows that the barriers faced by the medical students are highly contextual and unexpected surprising themes may emerge in under researched frameworks like ours. These findings are important because if educators can understand the barriers faced by the medical students in achieving self-regulatory behaviors and strategies, they can escort students towards more effective self-regulatory processes, and thus towards increased regulation and achievement outcomes.

Our findings have curriculum implications and support the need for greater curricular attention to self-regulated learning. The findings suggest that the teaching of self-regulation should be formalized in the context of

curriculum. The medical curriculum should reflect the complexities of medical practice, integrating what is taught and what is being observed in the clinical practice. Assessment should be competency based; the research shows that the learners adapt their metacognitive strategies to match with the assessment and feedback given on formative assessment.²³ Integration will lead to motivation and broad repertoire of metacognitive skills.²⁴ A change from teacher centered to learner-centered learning can promote SRL even in students strongly habituated to teacher-centered learning. In the learner-centered context, students began to construct their self-esteem, self-reflection, and use different learning strategies.²⁵

The internet puts the concept of “anytime anywhere” into a higher level as far as learning is concerned. Location of medical college in a rural location resulted in a weak signal strength. This resulted in the concern showed by the participants as most of the assignments for flip learning and feedback is communicated through e mail.

This study shows that the institutional policies emanating from security concerns and cultural practices may result in issues that affect the autonomy and confidence of the learners. Mixed gender anxiety is probably mediated by policy of gender segregation.²⁶ These policies should be framed carefully taking onboard all the stakeholders.

The limitation of this study was that it was highly contextualized, the findings are certainly limited and do not aim for generalization. The study population comprised of a private medical college in a rural set up with subject based curriculum. To make the results more generalizable larger studies including colleges from public sector and colleges in urban locations practicing competency based integrated curriculum needs to be carried out. The participants should be selected from broad categories, including low achievers, high achiever, scoring high and low on SRLPS.

CONCLUSION

The barriers faced by the medical students in achieving self-regulated learning are contextual. The expected themes related to curriculum, metacognitive strategies, infrastructure are known from the literature; unexpected themes emerged from institutional policy of closed-circuit television cameras because of security concerns, and enforced gender segregation.

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