

# Medical Students Perception of Supportive Factors Regulating their Self-Regulated Learning

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## ABSTRACT

**Background:** Medical students are prone to struggle in achieving their academic goals. This struggle is associated with: to what extent students' self-regulate themselves. Students who engaged themselves in self-regulated learning are expected to achieve more academic success as compared to those who are not self-regulated learner.

**Aim:** to explore supportive factors that regulate self-regulated learning of medical students.

**Method:** A qualitative study at Mohterma Benazir Bhutto Shaheed Medical College Mirpur Azad Kashmir was conducted from February to August 2019. A semi structured interview of 15 medical students was planned to uncover their experiences of supportive factors helping in regulation of self-regulated learning. The students were selected using purposive sampling based on their overall grade point average (GPA). Data collection was done by asking six open-ended validated questions and analysis was done using Atlas ti version 8.

**Results:** Seven main themes were found supporting SRL. For prudence and planning three themes, formation of concept map, time management and resources for learning. For performance three themes, self-motivation, role of instructor and family were isolated while for evaluation, self-reflection was isolated.

**Conclusion:** Most of the theme emerged were already found in literature, unexpected theme related to family was parent's education. However, outcomes of student understanding of the factors enhancing self-regulation indicate that expediting factors should be used on an individual basis to maximize self-regulation in students.

**Keywords:** medical student; self-regulation; learning; motivation.

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## INTRODUCTION

The concept of self-regulation was first introduced by Bandura in his famous social cognitive theory<sup>1</sup>. A learning where the learner metacognitively, motivationally and behaviorally initiate and conduct learning instead of relying on instructors, parents, or other educational factors<sup>2</sup>. Self-regulated learning is an active and constructive process that leads the learners towards high academic achievements<sup>3,4</sup>.

The most precious time of a medical student is spread across multiple activities: attending routine lectures at educational institute, assessments, extracurricular activities, family, friends and social life. Striking a balance between these commitments impacts upon academic performance and quality of life<sup>5</sup>. Undergraduate medical students are prone to struggle with learning in educational environment. One aspect of this struggle may be that they are expected to self-regulate their learning, which often seems to be difficult<sup>6</sup>. Self-regulated learning is a collaborative process between person and context. From a socio-cultural perspective, teachers, peers and other hospital staff are vital for students' self-regulated learning in a given context.<sup>7,8</sup> In SRL, a learner proactively modifies learning processes in order to achieve a desired level of competence, through goal setting, emotional and

behavioral control, environment structuring, feedback from instructor and self-reflection.<sup>9,10,11</sup> Now researchers agreed on SRL being beneficial for learning.<sup>12</sup> Literature shows that medical student's self-regulation of effort, time, and study strategies can positively impact on their academic achievement.<sup>13,14</sup> As SRL is highly context specific previous researches explain various contextual factors including historical, structural, pedagogical physical and social factors that are directly related to SRL<sup>5,15</sup>.

Therefore, in this study we are interested to explore how different factors help students in regulating their self-regulated learning especially in an under researched context such as Pakistan.

## METHODOLOGY

We did a descriptive qualitative study at Mohterma Benazir Bhutto Shaheed Medical College after taking approval from ethical review boards. Semi-structured interviews to uncover the lived experiences of medical students were planned in order to get to know how various factors regulate their self-regulated learning. Purposive sampling was done for selection of students from third, fourth and final year of their medical program. The first three authors acquired a list of all third, fourth and final year students sorted by grade point average (GPA). To assure maximum variation in the samples, students with GPA considered to be high (<4), average (2-4), and low GPA (>2) were included in the study. Selection based on GPA was used

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because research highlighted a strong relationship between self-regulated learning and academic achievement.<sup>16</sup> Six open ended questions were designed (Table 1) and sent to three medical educationists for expert validation.

Table 1 Open ended questions for interview guide

How do you plan for your study? What motivates you for learning? How your personality traits influence your self-regulated learning? What methods do you use to self-regulate your learning? Do you find anything that supports you in self-regulation? Is there anything else you would like to share that enhance your self-regulated learning?
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After taking informed consent, the participants were informed about the study objectives and self-regulated learning. Participants were assured about confidentiality of their personal information and reminded that participation in the study was voluntary. Semi-structured, in-depth interviews were conducted with each participant to collect

Concept map formation

Phases of learning	Metacognitive strategies	Themes	Codes
Forethought phase	Prudence and planning	Concept map formation. Time management Resources for learning	Autonomy, rehearsal, schedule for study, outline, study objectives
Performance phase	Performing and Monitoring	Self-motivation Role of instructor Family	Rewards, feedback, moral support, intrinsic interest,
Evaluation phase	Reflection	Self-reflection	Previous experience, exam results, notice, think, assess, self-questioning.

Students believed in making concept map after taking lecture. Making an outline in mind or drawing concept map is always helpful in learning. Participant 2 “First of all it’s my habit that I always form a concept map whatever I learn in a class then I use different sources for learning”

**Time management:** Planning and goal setting is a vital factor of forethought phase of self-regulated learning cycle. Planning involves envision of your task, setting goals, making resources available and considering steps required to complete a given task; but above all this is time management, which is mandatory to complete a project work.

Participant# 7: “we have three to four lectures on a daily basis along with ward rounds. In hostel we go through different activities, so we have to set a proper schedule for studies. Without schedule it will be impossible to achieve goals. For me time management is very important for self-regulation”.

**Resources for learning:** The objectives to learn help students to select the sources from where they can get required information. Usually, the topic, content and subject matter defines the choice of resources for learning

Participant# 4: “I always use different resources. I usually read textbooks as one can rely on them. I use internet for more explanation”

Participant# 5; “For me, the most important thing is an extent a student can understand and learn. I browse internet, use my textbooks and the latest articles. Depending upon learning objectives, right choice of learning resources are mandatory for self-regulation”

**Self-motivation:** Motivation is an important aspect of self-regulated learning. Your previous experiences either

data. Length of each interview varied from 60-90 minutes based on the opinions and experiences shared by participants. Data was analyzed using thematic analysis on Atlas-ti8 software to answer the research question. The first three authors analyzed the data independently to identify codes and finally eight themes were finalized with consensus. Themes generated are shown in table 2.

## RESULTS

A total of 21 interviews were conducted with 15 students. Six students were interviewed twice. The participants comprised of eight males (53.33%) and seven (46.66%) females. The average age of participant was 21±2 and average GPA was 3.7±2. In qualitative studies, interviews are completed when data saturation occur; therefore, sample size cannot be predicted during the study.<sup>17</sup> In this study, sampling was continued until data saturation occurred.

motivate you or demotivate you. It was a student's point of view that without self-motivation we are not good self-regulated learner.

Participant# 15: “I am an average mind student and to achieve the goals I have to work hard. Sometimes I fail to get results according to my expectations. But whenever I do planning for new target I remember my past experience and motivate myself that I can do”

Participant# 11: “whenever I take PBL session, I remember my previous experience and motivate myself. I plan to overcome that difficulty with more enthusiasm”

Role of instructor

Participants#9: “explained that a motivated and responsible instructor is helpful in their self-regulation. Being a role model with good communication and interaction with students help in their self-regulation.”

Participant# 14: “We have instructors that teach us not only about study planning but also about ethics. Their instructions are helping and effective.”

**Family:** It was view of participants that a family have both supportive and supervisory roles. But education of parents matters in many aspects for student’s self-regulation.

Participant# 13: “I belong to a middle class family and my parents are not educated. Sometimes I need their guidance to take any decision regarding my studies but feel helpless, so take decisions by myself.”

Participant# 1: “I belong to an educated family and they gave me full autonomy in decision making, but they guide me positively in choosing my study subjects.”

**Self-reflection:** Reflection is mandatory for self-assessment and self-evaluation in a learning process.

Participant# 10: "I do reflect during and after my learning process, and I make sure to learn better from the previous experience."

Participant# 12: "I have a habit of analyzing my learning effort and outcomes achieved and compared them with my previous results and other students. This gave me motivation to do more, I think self-reflection is necessary for self-regulation".

## DISCUSSION

Medical student's perception about factors regulating their self-regulated learning was explored in this study. The identified factors included: formation of concept map, time management, Resources for learning, self-motivation, role of instructors, family and self-reflection. Effective self-regulated learners are the one who can encourage their beliefs so that suitable actions could be taken that may successfully carry out their learning goals. For this purpose, they need a regular practice of metacognitive strategies.<sup>18</sup> students can better memorize their topics using concept map. Literature shows concept map is an important metacognitive strategy helping students in self-regulation.<sup>19</sup> Time management is essential in student's life as it affect both academic performance and achievements. However, it depends upon students, how they manage their time that suit their daily routines, with positive outcomes, besides having good lectures given by their teachers. Students' time management can be considered as one of the aspects that can move a student to be good self-regulated learner. Time management can reduce stress level of students needed to cope with their tasks and their personal achievements.<sup>20</sup> It was student's opinion that selection of learning resources according to learning objectives potentiate their learning. These learning resources include textbooks, journals, concise booklets, lecture notes, online books and articles. With an extensive research in the medical sciences literature provide explosion of information. Undergraduate medical students are expected to learn from this enormous information.<sup>21</sup> These accessible resources are considered to be a great help for medical students. An essential feature of self-regulation is motivation. Medical students are always motivated by getting rewards, praise or appreciation from their instructors. They can be motivated from their good previous experience. Motivation is linked with self-efficacy i.e. it enables use of metacognitive strategies by a learner along with time management. Self- motivation effects planning, selection of task, learning strategies. When students are motivated, they devote their precious time and energy needed for learning.<sup>22,23</sup> An expert instructor always remains a role model for his pupils, their lecture-planning, teaching methodology, providing timely and suitable feedback to students, how to keep students motivated and engagement of students in class discussions are characteristics of instructors that can have a positive impact on student self-regulation.<sup>24</sup> The experiences of students showed that teachers presentation in class affect our motivation and are supportive in our self-regulation. The family environment, parent's moral, financial and psychological support and the experiences of other family members are important aspects that can affect the self-

regulation of students. Students considered that their parent's supervisory role and their supervision improved their concentration and focus on their academic activities. Literature shows that a positive attitude and support of parents can facilitate self-regulated learning of students during their academic accomplishments.<sup>25</sup> The present study found that students believed that the family environment and family emotional and psychological support facilitate their self-regulation however most of the students also believe that along with financial and moral support, an educated parent can guide and support in their self-regulation and educational decisions in a better way. Last phase of self -regulated learning cycle is evaluation. Evaluation in reflection means observing one's own activities. It is a valuable tool for improvement in learning practices. Self-evaluation means evaluating self-performance against some particular standards that lead to effective learning. Hence, self-evaluation help students to identify their positives and negatives so that they may change their learning strategies accordingly to gain academic achievement. High achievers believed that their success is based upon their self-evaluation after every educational task that support them to be self-regulated learners.

## CONCLUSION

Self-regulation in learning is an essential skill to develop in medical students. The findings of this study from students view about factors supporting their self-regulation in learning included formation of concept map, time management, resources for learning, self-motivation, role of instructors, family and self-reflection. During forethought phase, medical students can form concept map for their task. They can predict how difficult is their task, manage their time and use different resources for learning depending upon their learning objectives. During performance phase, motivation comes from previous experience to learn and during learning, they question their selves to increase higher order thinking. In an evaluation phase, they self-reflect their performance to identify their strengths and weaknesses. Most of these factors are already identified in literature but important theme related to family was parent education. Most of the students felt difficulty when seeking help from parents in educational endeavors as less educated parents could morally and financially support their children but were unable to support them in academics.

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