

Self directed learning readiness among undergraduate medical students in a tertiary care health institution in Pondicherry

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ABSTRACT

Background: To achieve “Health for All”, the medical curriculum in India needs remodeling with learners being proactive and centre of all teaching learning activities. The self-directed learning enables learners’ acquisition of knowledge and skills for better performance and achievements. **Objective:** To assess the level of readiness for self-directed learning (SDLR) and its correlates among medical undergraduate students of a tertiary health care institution in Pondicherry. **Methods:** This cross-sectional study was conducted among 243 Bachelor of Medicine and Bachelor of Surgery (MBBS) students of a private medical college in Pondicherry after obtaining written informed consent. A self administered study tool was used for collection of relevant information. SDLR was assessed using Fisher’s 40 items SDLR scale. A score of > 150 and ≤150 were considered as high and low SDLR respectively. Motivation and time management were assessed using Pintrich’s Motivated Strategy for Learning Questionnaire, and Britton and Tessor’s Time Management Questionnaire. **Results:** Response rate was >90%. The mean (SD) SDLR score was 147.8 (13.2). The mean (SD) score in the domains of the SDLR were 44.1±4.8 (self-management), 46.6±4.6 (desire for learning) and 57.1±6.9 (self-control). Around 44% of the students had high readiness for self-directed learning. Among the student’s characteristics, only stay arrangement had shown significant association with self-directed learning. Motivation level and time management skills were significant associated with readiness for self learning. **Conclusion:** Majority of the students had low readiness for self-directed learning. Considering the significant association of SDLR with motivation and time management skills, the curriculum planners should develop strategies and guidance for students to improve their motivation level and time management skills.

Key Words: Self-directed learning readiness, Medical students, Medical education, Pondicherry

INTRODUCTION

The medical curriculum in India emphasizes on scientific habits of thought, clarity of expression and independence of judgment, and instills eagerness to learn new things. Indian medical graduates are expected to be lifelong independent learner. The educational process is expected to be ever evolving and should encompasses other modalities of teaching and learning along with lecture discussion for making the medical graduates to have right knowledge, acquire sound skills and develop right attitude. In this regard, self directed learning should be encouraged and mentored by teaching faculty members.^[1] Self directed learning (SDL) has been encouraged as a methods for lifelong learning among health professionals.^[2]

Critical thinking and self directed learning (SDL) are the two crucial attributes of adult learning. According to M Knowles, SDL is defined as “a process in which an individual takes the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate

learning strategies and evaluating learning outcomes”. Readiness to SDL involves the individual’s attitude and capability of learning. Mismatch between individual’s readiness and learning direction can lead to anxiety, distress and poor knowledge and skill development which are hindering factors for lifelong learning.^[3] Motivation is an important component of learning and academic success.^[4,5] Literature on motivation among medical student is very limited especially in India.

Various studies from India in different discipline of medicine have demonstrated improvement in knowledge and skills following self directed case based learning or problem solving exercises but without assessing their readiness to learn.^[6,7] Few studies from India and Nepal have reported readiness for self directed learning among the medical students which varied widely.^[8-13] Moreover, the motivation level has not been reported in any of them. The current study was planned with the aim to assess the level of readiness for self-directed learning (SDLR) and its correlates among medical undergraduate students of a tertiary health care institution in Pondicherry.

METHODOLOGY

Study setting: Pondicherry has around nine medical colleges which includes one state government college and one autonomous institution of national importance. This study was conducted in one of the private medical colleges among MBBS students in Pondicherry. The medical college has 150 intakes into MBBS course every year. Community medicine is taught from third to seventh semester and training on primary health care is imparted during rotatory internship.

Ethical approval and study participants: This study has been approved by Institute Ethics Committee of the Medical College and conducted during the months of April-May 2018 among IV and VI semester MBBS students. Though we intended to include all the students under Community medicine during the study period, only 243 (90.7%) gave written informed consent to participate. Chronic absentees and student self reporting under psychiatric care were excluded from the study.

Study tool: The study tool, to be self-administered, had four sections. First section had a semi-structured proforma to collect general information about the participants. The various information like age, gender, medium class 12th board, language of instruction in class 12th board, residence (urban/rural) and current stay (hostel/day scholar) were collected. Second, third and fourth section had pre-tested SDLR, Motivation and Time Management questionnaires. SDRL was measured using Fisher's SDLR scale (40 items in 5 point Likert scale) which has been used in earlier studies from India. Each item is in a 5-point Likert scale and indicates; 1 – never true of me, 2 – not often true of me, 3 - sometimes true of me, 4 – usually true of me and 5 – always true of me. The motivation strategies for learning questionnaire (31 items in 7-point Likert scale) was used to measure the motivation. The response varies from 1 to 7 in a continuous scale; 1 – not at all true of me and 7 – very true of me. This motivation questionnaire showed good internal consistency among the study population. (cronbach alfa =0.883) A validated Time Management Questionnaire (TMQ) developed by Britton and Tesser was used to assess the time management skills of participants. This questionnaire has been used in Indian context by earlier research.^[14] The time management questionnaire has 18 items. Each item of total 18 items in TMQ is in a 5-point Likert scale and indicates; 1 – never, 2 – rarely, 3 – sometimes, 4 – often and 5 – always. The higher score corresponds to better outcome of interest in all the three scales.

Study procedure: The students were asked to assemble in a lecture hall. The researchers explained the study procedures and tools, and students giving written informed consent were distributed the self-administered study tool. No discussion and talking among students were ensured.

Statistical analysis: The missing data which was $\leq 1\%$ in $\leq 5\%$ of items were imputed using median score for that particular item. The scores in negative items were reversed in MSLQ as per the instruction provided with the MSLQ manual. The SDLR was categorized as high readiness (SDLR score of > 150) and low readiness (≤ 150). A score of more than 162 (corresponding to upper quadrant of score in motivation scale) was considered as good motivation level for this study.^[15] The score of more than 58 was considered as good time management skills.^[16] Association of SDLR with socio-demographic variables, motivation level and time management skill was assessed using unpaired “t” test, and p value of < 0.05 was considered statistically significant.

RESULTS

The median (range) age of the study population was 20 (18 – 23) years. Other demographic and general information of the study population is presented in Table 1. Nearly 90% of the participants studied in state boards. About 25% of the study participants had doctors in the family. English was the medium of instruction in class 12th for almost all the participants. **Table 1: Socio-demographic details of the study participants (N=243)**

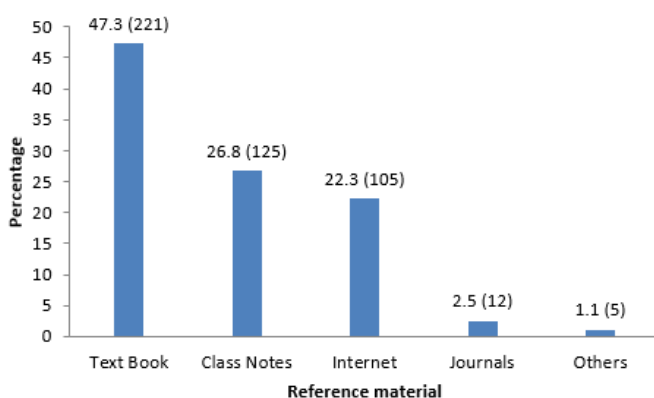
Variable	Number of students (%)
Gender	
Male	101 (41.6)
Female	142 (58.4)
Semester	
4 th	122 (50.2)
6 th	121 (49.8)
Residence	
Rural	57 (23.5)
Urban	187 (76.5)
Stay	
Day scholar	127 (52.3)
Hosteller	116 (47.7)
Class 12 th Board	
State	214 (88.1)
Others (CBSE/ICSE)	29 (9.9)
Doctors in the Family	
No	180 (74.1)
Yes	63 (25.9)
Study reference	
Don't refer	18 (7.4)
Single source	86 (35.4)
Multiple sources	139 (57.4)

Majority (57.2) of the study participants reported multiple sources of references for study. Most common sources (multiple response) for study reference were text book (47.3%) followed by class notes (26.8%) and internet (22.3%). (Figure 1)

Table 2: SDLR score among study participants (N=243)

	Total Score Mean (SD)	P value	Self management	Desire for learning	Self control
	147.8 (13.2)		44.1 (4.8)	46.6 (4.6)	57.1 (6.9)
Gender				*	
Male	149.3 (12.9)	0.141	44.6 (4.8)	47.3 (4.6)	56.9 (6.9)
Female	146.8 (13.4)		43.7 (4.9)	46.1 (4.7)	57.4 (6.8)
Stay			*	*	
Day scholar	149.9 (12.9)	0.011	44.8 (4.9)	47.2 (4.7)	57.9 (6.6)
Hosteller	145.6 (13.4)		43.3 (4.6)	45.9 (4.5)	56.3 (7.1)
Class 12 th Board					
State	147.9 (13.3)	0.595	44.1 (4.8)	46.7 (4.6)	57.2 (6.9)
Others (CBSE/ICSE)	146.6 (12.6)		44.1 (4.3)	46.2 (4.6)	56.3 (7.2)
Presence physician					
Yes	148.2 (13.1)	0.451	44.3 (4.9)	46.8 (4.7)	57.2 (6.8)
no	146.7(12.9)		43.6 (4.4)	46.1 (4.6)	57.1 (7.1)
Motivation level			*	*	*
Good	152.5 (13.5)	0	45.4 (4.7)	47.6 (4.8)	59.6 (6.8)
Moderate	144.5 (11.9)		43.1 (4.6)	45.9 (4.4)	55.4 (6.5)
Time management			*	*	*
Good	153.9 (13.1)	0	46.4 (4.8)	48.1 (4.4)	59.5 (7.1)
Poor to moderate	145.3 (12.5)		43.1 (4.6)	46.1 (4.6)	56.2 (6.6)

*significant differences, p value <0.05

Figure 1: Study reference materials among participants (multiple responses, N=467)

The mean [standard deviation (SD)] SDRL score was 147.8 (13.2) among the study participants. The mean (SD) scores in three domains of SDLR were 44.1 (4.8) [self management], 46.6 (4.6) [desire for learning] and 57.1 (6.9) [self control]. Day scholar, students with good motivation level and good time management skills had statistically significant higher SDLR scores than their counterparts. Males had higher SDLR score overall as well as in all three domains than females but the difference were statistically significant in desire for learning domain. Students with good motivation level and time management skills scored significantly higher SDLR scores in all three domains than their counterparts.

Student studied in state board for class 12th and student with doctor in the family have higher SDLR score than their counterparts, though statistically not significant. The SDLR score was similar among 4th and 6th semester students as well as students from urban and rural areas. (Table 2)

About 44.4% of the students had high readiness for SDL. Nearly half of the male students against 41% of female students had high readiness for SDL. Age did not show correlation with SDRL overall or its domains.

DISCUSSION

Available doctors in India, especially in rural areas, lack the adequate competencies to meet the health requirement of the communities to achieve “Health for All”.^[17] One of the criticisms for the current medical curriculum which emphasizes more on traditionally way of teaching is failure to inculcate acquisition of competencies and need based skills.^[18] Considering the poor competency of medical graduates, the MCI has proposed to implement competency based medical curriculum from the academic year 2019-20.^[19] Problem based learning, case discussion, community based learning, in-ward learning, case based questionnaire solving, better communication skills, interpretation and application of health related information can improve competencies of learners but requires great motivation, initiative from learner, desire,

confidence, autonomy and deep understanding.^[13,20,21] These can be instilled in a learner through SDL which is gaining momentum in various developed countries. However, an unplanned SDL can potentially harm the learning. Hence, curriculum developers need to plan the teaching learning strategies accordingly after assessing the SDL readiness.

The mean (SD) SDLR score was found to be 147.8 (13.2). This was higher than the SDLR score reported by Madhvi et al (145.2±18.2), Balamurugan et al (144.6±34.8) and Kar et al (140.4±24.4) from India.^[8,13,22] Studies by Abraham et al^[23] from Manipal Medical College, Manipal [mean score: 151.5], Gyawali et al^[9] from Nepal [mean score: 157.8], Said et al^[24] from Pakistan [mean score: 153] and Shankar et al^[11] from Nepal [mean score: 152.3] reported higher mean SDLR score compared to our study. This higher SDLR scores could be as a result of the teaching learning environment provided to the students in the respective colleges. Medical colleges from Manipal and Nepal adopt problem based learning along with didactic lecture discussions.

Except staying arrangement, none of the socio-demographic variables age, gender, medium of class 12th board, presence of doctors in the family, showed significant association with readiness for self learning. However, females, day scholar, students who had studied their class 12th in state board and having doctor in the family had higher SDLR score than their counterpart. Similar findings have been reported by Kar et al and Madhvi et al.^[8,13] In contrast to our study, Gyawali et al from Nepal and Fisher et al have reported higher SDLR scores among females than males.^[9,25] In contrast to Kar et al^[8], day scholars had significantly higher scores compared to hostelites in our study. We could not find any correlation between age and SDLR score. However, Fisher et al has reported weak but significant positive correlation between age and SDLR scores.

Students with good/high motivation level and good/excellent time management skills had significantly higher SDLR score compared to their counterparts in our study. Earlier studies from Korea and Turkey have also reported positive correlation between time management skills and readiness for self learning.^[26,27] Published scientific literature has demonstrated positive correlation and influence of motivation on self directed learning.^[28-31]

Text book was most preferred reference material for reading among our students. This probably indicates that learning is only short term to just pass the university examination. The teacher/facilitators should encourage students to go beyond text book for acquisition of knowledge and skills to be a lifelong learner and make oneself updated with current knowledge.

Among the various domains of SDLR, lowest score was recorded in self-management domain in our study. Similar findings have been reported by other studies from

India.^[8,13,22] Though students need guidance and encouragement for self learning, priority should be given to self management skills.

This is one of the very few studies in India, which has reported readiness among medical students for self learning. Almost all studies from India including ours recorded majority of the medical students have not yet developed high readiness for self learning.^[8,13,22] Focused motivation and guidance is required for the medical students to improve their readiness for self learning. Curriculum planners also need to consider the students SDL readiness before devising various teaching learning strategies.

Strength and limitations: This is one of the very few studies exploring the readiness for self directed learning in India in view of the MCI recommendation of lifelong learning for medical graduates. Data was collected anonymous self administered. Adequate care was taken for clear explanation of each item by the investigators and sufficient time was provided to respond to all the items.

The study findings are from a single medical college. Because of self administered nature of questionnaire, guessing and approximation could not be completely ruled out. Despite explaining the study tool to the participants and giving adequate time to mark responses, misunderstanding the item cannot be ruled out completely.

Conclusion: Majority of the students had low readiness for self learning in the study population. There was positive association between level of motivation and time management skills with readiness for self directed learning among medical students.

Curriculum assessor should consider various strategies to improve the motivation and time management skills of medical students.

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