Physiology Section

Evaluation of Self-directed Learning Readiness among Students of Medicine and Allied Branches in South Kashmir, India

MEHAK MUFTI[1], SHAUGFA AARA[2], HANEEN BEG[3], MUDASIR DAR[4], MOHSINA MUKHTAR[5]

ABSTRACT

Introduction: The aim of Self-directed Learning (SDL) is to motivate the undergraduate student to become a lifelong learner who plays an active role in the acquisition of knowledge and skills. With the implementation of Competency Based Medical Education (CBME) in 2019, SDL has become an integral part of the curriculum, hence, it is important to know whether our students are ready for it or not.

Aim: To assess the readiness of the students of Medical College and College of Nursing and Paramedical Sciences, Government Medical College, Anantnag for SDL.

Materials and Methods: An institution based cross-sectional study was conducted on 295 undergraduate medical and paramedical students of Government Medical College, Anantnag, Jammu and Kashmir, India. Williamson's SDL readiness scale (SDLRS) was provided to the students who were instructed to describe themselves by indicating on the Likert scale, the extent to which the item best described their personal attitude. The score ranges from 60 to 300. Data was calculated in form of

frequency (n) and percentages (%) and was analysed by using Pearson's Chi-square test.

Results: Out of the 295 students (150 were boys and 145 were girls, 195 medical and 100 paramedical students), mean age 19.07±0.762 years, who took part in the study, 40% (n=118) had high readiness scores, 52.88% (n=156) had moderate score and 7.12% (n=21) had low score. A total of 45.52% (n=66) of girls had high readiness as compared to 34.66% (n=52) boys. Nursing and paramedical students appeared to be more ready for SDL than Bachelor of Medicine and Bachelor of Surgery (MBBS) students as 52% (n=52) of nursing and paramedical students had a high score whereas only 33.85% (n=66) of medical students had a high score and this difference was statistically significant (p-value <0.001).

Conclusion: Most of the medical and paramedical students seem to be ready for self-directed learning and paramedics are more ready for SDL than medical students. Female students seem to be more receptive for SDL as compared to male students.

INTRODUCTION

Self-directed learning (SDL) has been defined by, Hammond M, Collins R, Knowles M but the most widely accepted definition is the one given by Knowles who defines SDL as a process in which the individual takes the initiative with or without the help of others in identifying their learning needs, setting goals, identifying resources for learning (human and material), choosing and implementing appropriate learning strategies, and evaluating the outcomes [1,2]. SDL encourages the students to work in teams, to contribute actively in their learning, problem solving, organise work, distribute responsibility, manage time better and make them aware of their capabilities [3,4]. A medical student needs to be an active lifelong learner and team worker, equipped for current educational innovations like problem based learning and small group teachings as these methods allow an in-depth understanding of the subject, resulting in an improved ability to assemble and present information. These learning interactions provide an opportunity to brainstorm and think critically, thus resulting in effective communication skills and confidence in the students and provide quick feedback [5,6]. Conventional teaching methods mainly comprise of monologue lectures where the student passively absorbs the material presented by the instructor but with SDL the teacher's role shifts from that of a passive educator to that of a facilitator [7]. With the implementation of the CBME in 2019, National medical commission (NMC) mandates 309 hours of SDL in the entire MBBS course with 98 hours in first year, 85 hours in second year, 66 hours in third year and 60 hours in final year [8,9].

With the outbreak of Coronavirus Disease-2019 (COVID-2019) pandemic in 2020, educational Institutions had to be closed off and

most of the courses were shifted from the conventional classroom didactic lectures to learning via digital platforms leading to people resorting to internet modalities more than ever. Hence, the role of SDL cannot be overlooked and the need of the hour is to promote and implement SDL. With proper implementation of the SDL, students can continue their learning assignments, remain informed and prepare for the future as lifelong learners [10-12]. Students who are methodical, self-disciplined, effective communicators, receptive to feedback and engage in self evaluation are ideal candidates for SDL but not all students possess the ideal learning aptitudes and work/learning ethics. Because of this, it becomes important to assess how ready the students are for SDL, and to sensitise them for the same before implementing it [7,11]. No such study has been conducted on SDL readiness in medical students in Jammu and Kashmir. This brings us to the need for the present study. Hence, the present was conducted with an aim to evaluate the extent to which the learner possesses the abilities and personal characteristics appropriate for SDL.

MATERIALS AND METHODS

This was an Institution-based cross-sectional study conducted at Government Medical College, Anantnag, Jammu and Kashmir, India, from August 2019 to December 2021 after approval from the Institution Ethics Committee (IEC/GMCA/21/024) on 310 students of medicine and allied branches. This is a newly established medical college with only two batches of MBBS (100 students per batch) and one batch of paramedic students (110 students per batch). All the students enrolled in the college at the time of initiation of the present study were included (convenient sampling). Though the scale was distributed to 310 students, responses were received from

295 students only (195 MBBS students, 76 paramedical students and 24 nursing students). The purpose of the study was explained to all the students and informed written consent was taken from them.

Inclusion criteria: Students who volunteered to be a part of the study were included.

Exclusion criteria: Those who were not willing initially and those students who did not return the filled SDLRS forms were excluded from the study.

Different scales have been formulated to assess the readiness of the students for SDL like Guglielminos self-directed learning readiness scale (SDLRS), Odds continuing learning inventory (OCLI), Ryan's ability and importance score, Fisher and colleagues SDL readiness scale [2,13-18]. However, it was decided to use Williamson self-directed learning readiness scale (SDLRS) [17].

The identity of the participants was kept confidential. Students were encouraged to seek clarification, if needed.

Williamson Self-directed Learning Readiness Scale (SDLRS)

This scale consists of 60 questions that measure eight factors-creativity, love of learning, initiative and independence in learning, openness to learning opportunities, acceptance of responsibility to one's own learning, self-concept as an effective learner, ability to use basic study and problem solving skills and positive orientation to the future. The students were asked to describe themselves by indicating on the Likert scale, the extent to which the item was best descriptive of their individual characteristics where 1 would mean almost never true for me and 5 would mean almost always true for me. The score ranges from 60 to 300. After the total score was calculated, the students were grouped into three categories, based on their overall score as high, moderate and low score. The scoring range and interpretation of SDLR is shown in [Table/Fig-1] [17].

Scoring range	Level of self-directedness in learning	Interpretation
60-140	Low	Guidance is definitely needed from the teacher. Any specific changes necessary for improvement must be identified and a possible complete re-structuring of the methods of learning.
141-220	Moderate	This is half way to becoming a self-directed learner. Areas for improvement must be identified, evaluated and a strategy adopted with teacher guidance, when necessary.
221-300	High	This indicates effective self-directed learning. The goal now is to maintain progress by identifying strengths and methods for consolidation of the students' effective self-directed learning.

[Table/Fig-1]: The scoring range and interpretation of Self directed learning readiness (SDLR).

STATISTICAL ANALYSIS

The number of students in each category was then expressed in terms of percentage and data was analysed by Pearson's Chi-square test using Statistical Package for Social Sciences (SPSS) software.

RESULTS

Out of the total 295 students, who took part in the study, 150 were boys and 145 were girls. The mean age of the students was 19.07±0.762 years. About 40% (n=118) had high readiness scores, 52.88% (n=156) had moderate score and 7.12% (n=21) had low score as is shown in [Table/Fig-1].

The results of this study [Table/Fig-2] show that 45.52% of girls (n=66) had high readiness as compared to 34.67% boys (n=52) which means that girls are more ready for SDL than boys. However this was not statistically significant (p value 0.08). Since, this study

population comprised of medical (n=195) and paramedical students (n=100), both, it was found that nursing and paramedical students appeared to be more ready for SDL than MBBS students as 52% (N=52/100) of nursing and paramedical students had a high score, whereas, only 33.85% (N=66/195) of medical students had a high score [Table/Fig-3] and this difference was statistically significant (p-value <0.001).

Study participants	Low		Moderate		High		Total
	N	%	N	%	N	%	
Boys	14	9.33	84	56.00	52	34.67	150
Girls	7	4.83	72	49.66	66	45.52	145
Total	21	7.12	156	52.88	118	40.00	295

[Table/Fig-2]: Self directed readiness score in the study population n=295; p=0.08.

Course of study subjects	Low		Moderate		High		Total
	N	%	N	%	N	%	
MBBS	14	7.18	115	58.97	66	33.85	195
Paramedics and nursing	7	7.00	41	41.00	52	52.00	100
Total	21	7.12	156	52.88	118	40.00	295

[Table/Fig-3]: Comparison of SDLR score between MBBS and Paramedical students n=295; statistically significant p-value <0.001.

DISCUSSION

The results of the present study showed that greater number of students (52.88%, N=156), had moderate readiness followed by high readiness, 40% (N=118) and very few had low readiness scores. This is suggestive of the fact that most of the undergraduate students were ready for SDL or/and had individual characteristics appropriate for SDL. The results of this study are similar to the results of Prabakhar R et al., who in their study on 200 MBBS students of phase II and III MBBS found that 55% student have high readiness and phase III students had higher score as compared to phase II students [15] Walankar P and Panhale V had conducted a similar cross-sectional study on 288 undergraduate physiotherapy students and found that majority of the students (60.76%) had moderate levels of readiness and further the readiness scores were higher in clinical students as compared to the preclinical [19]. These readiness scores can help the mentor to implement the teaching-learning methodologies keeping in mind the best interest of the students [16].

Assessing the students for SDL readiness is crucial as not all students possess the ideal learning aptitudes. Some students who are self-disciplined, organised, able to take constructive criticism are ideal for SDL. But there are so many other factors like family income, cultural factors, availability and utility of learning resources, premedical training, time management, etc. that can impede SDL [2,7,10,17,18]. Therefore, areas of improvement must be identified, evaluated and a strategy must be framed and adopted accordingly, with the guidance of the mentor [17].

The results of present study are also in accordance to the previous studies conducted by Prabhakar R et al., Cadorin L et al.,Tekkol I and Demirel M; who showed that female students had higher readiness scores than male students [15,20,21] The reason for better scores in the females needs to be evaluated, however, study by Tekkol I and Demirel M; have attributed this to the fact that females have higher cognitive awareness and motivational levels, have better time management skills and lifelong learning tendencies [21].

Some studies by Premkumar K et al., Gyawali S et al., Zeb S et al., Alfaifi M have however showed that there is no significant gender based difference in the SDL readiness [2,22-24]. Contradictory to this, a study by Kar SS et al., on fifth semester MBBS students showed that males had higher readiness for SDL as compared to

females [25]. Yang C et al., in their study on medical students in China also found that male students to be more ready than females for SDL [10].

Limitation(s)

A small sample size may be considered to be the limitation of the present study.

CONCLUSION(S)

Most of the medical and paramedical students seem to be ready for self-directed learning, which is actually an encouraging thing for the teacher. Paramedics are more ready for SDL than medical students and female students seem to be more receptive for SDL as compared to male students. Determining the level of SDL readiness among the students would help the teachers to improve teaching-learning methodologies and focus more on students having low readiness for SDL. More such studies are needed to understand the correlation of the SDL scores with various demographic factors, so that, the purpose of SDL is fulfilled.

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PARTICULARS OF CONTRIBUTORS:
1. Assistant Professor, Department of Physiology, Government Medical College, Anantnag, Jammu and Kashmir, India.
2. Assistant Professor, Department of Physiology, Government Medical College, Anantnag, Jammu and Kashmir, India.
3. Junior Resident, Department of Physiology, Government Medical College, Anantnag, Jammu and Kashmir, India.
4. Technician, Department of Physiology, Government Medical College, Anantnag, Jammu and Kashmir, India.
5. Senior Resident, Department of Community Medicine, Government Medical College, Anantnag, Jammu and Kashmir, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Mehak Mufti,
Assistant Professor, Department of Physiology, Government Medical College,
Anantnag, Jammu and Kashmir, India.
E-mail: muftimehak@gmail.com