Original Article

Readiness For Self Directed Learning Among First Semester Students Of A Medical School In Nepal

Education Section

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ABSTRACT

Background: Self directed learning (SDL), a central theme in adult education, is considered to be associated with the management of lifelong learning for better outcomes. Certain learning situations help to strengthen SDL. Medical science changes rapidly and there is an information explosion; so, it is important to train doctors for SDL. **Aims:** The aim of this study was to measure the readiness for SDL of students at the beginning of the undergraduate medical course. **Methods:** The readiness for SDL was measured among 121 first year undergraduate medical students at Manipal College of Medical Sciences, Pokhara, by using the Self-directed Learning Readiness Scale (SDLRS), an instrument developed by Australian researchers. **Results:** The observed mean score was 157.8 (range 103 – 190). According to Fisher and coworkers, the developers of the scale total scores greater than 150 indicate readiness for SDL. Most of the students (72.7%) scored more than 150 and so, they could be considered as ready for self directed learning. The mean scores were not significantly different among the male and female students as well as among the self-financing and the scholarship students. **Conclusions:** Most of the first semester students had a high degree of readiness for self directed learning. Studies correlating the SDL score and the students' academic performance are lacking and so, the scores of the students could not be used to predict their success in the forthcoming exams. Therefore, more research is required in this field. Similar studies can be done in other medical schools.

Key Words: Adult learning, Integrated medical teaching, Medical education, Self-directed Learning

Key messages:

- Self directed learning (SDL) which is associated with the management of lifelong learning, is considered as a central theme of adult learning.
- Readiness for SDL can be improved among students.
- Measuring the SDL readiness of the students and using the results to develop teaching and learning methods for them is a new concept in Nepal.
- Studies which have been done to find the relationship between the SDL readiness score and the academic performance of the students are lacking.

INTRODUCTION

Self directed learning (SDL) is considered as a central theme in adult education. It is expressed in terms of the readiness of the learner to assume the increasing responsibility for his or her own learning.[1] SDL is defined as 'a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, in formulating learning goals, in identifying human and material resources for learning, in choosing and implementing appropriate learning strategies and in evaluating learning outcomes'.[2] It can occur in a wide variety of situations and is required in a formal learning setting, in the workplace and in one's personal life.[3] Learning readiness exists in all individuals innately along a continuum[1], but certain learning situations help it to flourish.[3]

Lifelong SDL skills are now, more than ever, a necessity for survival, especially in the medicine and health sciences. Medical science in general and therapeutics in particular, changes rapidly, the life span of useful information is short and there is an information explosion; so, it is important to train doctors for SDL.[4] Many schools have been emphasising the practice of Evidence Based Medicine (EBM) so that their students' ability to evaluate clinical literature is improved and so that lifelong learning skills in medical practice after graduation is enhanced. [5] Medical educators are exhorted to adopt SDL with the principal aim of producing learners who can manage their own learning throughout their careers.

Increased curiosity, critical thinking, quality of understanding, retention and recall, better decision making, achievement satisfaction, motivation, competence and confidence are associated with SDL.[6] These are all important qualities in doctors. The SDL friendly academic environment reduces the numbers of demotivated doctors who stop learning in their professional life.[6]

Manipal College of Medical Sciences (MCOMS), Pokhara, Nepal, which was established in 1994, at present admits 130 students annually, mainly from Nepal, India and Sri Lanka for the Bachelor of Medicine and Bachelor of Surgery (MBBS) course. The college is affiliated to the Kathmandu University (KU) whose curriculum emphasizes integrated medical teaching and problem-based learning.[7] Within the health care disciplines, problem based learning (PBL) has been identified as a method to facilitate the development of SDL.[2]

Many learning environments for adults are still designed around the listen to the teacher-memorize and regurgitate model. Plutarch expressed the idea that a learner is not a vessel to be filled, but a fire

to be lighted.[3] Evidence suggests that not all learners are equally skilled in and/or willing to make decisions about what to learn, and to what depth and breadth.[8] There are two opposite types of learners, pedagogical (teacher or other directed) and andragogical (self directed). Pedagogical learners are dependent on the teacher to identify their learning needs, to formulate objectives, to plan and implement learning activities and to evaluate learning, while andragogical learners prefer to do things by themselves or may take occasional help from others. These two categories require different learning environments for better learning.[1]

Self-directed learning readiness is defined as 'the degree to which the individual possesses the attitudes, abilities and personality characteristics which are necessary for self directed learning'.[9] Measuring the SDL readiness of students and using the results to develop teaching and learning methods for them is a new concept in Nepal, especially in medical education.

The present study was carried out to obtain the baseline data on SDL readiness among medical students. The objectives of the study were to:

1. Obtain relevant demographical information on the first year medical students of MCOMS.
2. Measure their readiness for SDL and to note differences if any, in the SDL scores among the subgroups of respondents.

MATERIALS AND METHODS

Purpose and design:

The purpose of this study was to examine the self directed learning readiness of the August 2010 batch of students at the beginning of the MBBS course at MCOMS, Pokhara.

A cross sectional descriptive study was carried out by distributing a questionnaire to all the first semester students (130) of MCOMS in second week of September 2010. One hundred and twenty one (93.1%) students successfully completed the questionnaire and their responses were analysed.

Instrument:

The questionnaire which was used was divided into two parts. The first part consisted of demographical data of the students e.g. Age, Gender, Nationality and Scheme (Scholarship or self financing). The second part of the questionnaire was the Self directed learning readiness scale (SDLRS). The SDLRS is a self report questionnaire with 40 Likert type items (1= strongly disagree, 2= disagree, 3= unsure, 4= agree and 5= strongly agree) which was designed by Fisher and coworkers to determine the extent to which individuals perceive themselves as possessing the skills and attitudes which are associated with SDL. The students were asked to encircle the appropriate number according to their degree of agreement with the statements. The scale's construct validity, internal consistency (reliability) and uni-dimensionality were measured by the developers[1] and they appeared to be homogeneous and valid. [1],[10] The scale has recently been validated among medical students. [10] The permission to use the scale for this study was obtained from Fisher et al. Though the scale was originally developed to measure the readiness for SDL among the nursing students, it can also be used among other adult students.[1]

Data analysis:

The data which was collected was analyzed by using SPSS (Statistical Package for the Social Sciences) version 11.5 for Windows. SPSS is among the most widely used computer programmes for statistical analysis, especially in educational research involving numbers. To avoid bias, certain scores were reversed while calculating the total and subscale scores. The median total scores were compared among different categories of respondents by using appropriate statistical tests. Unpaired student's t test was used for dichotomous variables and analysis of variance (ANOVA) for others. ANOVA is a method of statistical analysis to detect if there is any difference in the mean scores among three or more groups. If a difference is noted, then post hoc tests can be applied to detect among which specific groups the difference in the mean scores exists. A p value of less than 0.05 was taken as statistically significant.

The approval for the study was granted by the Ethics and Research Committee, MCOMS, Pokhara. Written informed consent from each student who participated in the study was obtained. The students were assured about the confidentiality of their identity; so, they had the opportunity to answer all the questions honestly.

RESULTS

A total of 130 students were enrolled in the first year of the MBBS Program in the August 2010 batch. One hundred and twenty one (69 females and 52 males) students completed the questionnaire, giving a 93.1% response rate. Out of the 121 students, 71 (58.7%) were Nepali, 45 (37.2%) were Indian, 4 were Sri Lankan and 1 was from Maldives. In the study group, 95 students were admitted under the self finance quota and 26 students (4 females & 22 males) were admitted under the Scholarship quota. The students ranged in age from 17 to 23 years, with a mean age of 18.8 (SD = 1.14). The SDL readiness score ranged from a low of 103 to a high of 190, with a mean score of 157.8 (SD= 15.8) and Mode 154. The self directed learning readiness score of most of the students (72.72%) was more than 150, which according to Fisher et al., indicated the readiness for SDL. Out of eighty eight students securing more than 150, 54 were females and 34 were males. Similarly, 73 students were from the self-finance scheme and 15 students were from the Scholarship scheme.

Female students [Table/ Fig 1] and self-financing students [Table/ Fig 2] had higher SDL scores. Although the mean SDL readiness score of the females was higher (159.64) than that of the males [Table/ Fig 1], the difference between the total mean score of the males and the females was not statistically significant (p = 0.1424).

Sex	Mean Score	Standard Deviation	Mode
Female (N=69)	159.64	15.55	163
Male(N=52)	155.36	16.02	140

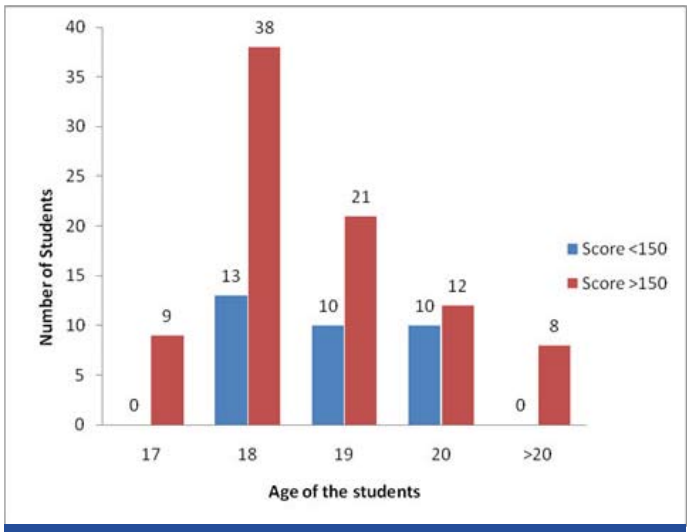
[Table/ Fig 1]: Gender wise distribution of mean SDL scores

Scheme	Mean Score	Standard Deviation	Mode
Self Financing (N=95)	158.79	14.92	154
Scholarship (N=26)	154.19	18.66	134

[Table/ Fig 2]: Scheme wise SDL score distribution

Twenty six (20%) students were admitted in the batch under the government scholarship quota and all of them were included in the study. The mean SDL readiness score of the students who were admitted in the self-financing stream was 158.79 (SD= 14.92), which was higher than the score of the scholarship students [Table/ Fig 2], but there was no statistically significant difference (p = 0.1907) in the total mean SDL scores.

The bar diagram compares the number of students of different age groups securing the >150 and < 150 SDL readiness score. Even though most of the students securing more than 150 fell under the age group of 18 years [Table/ Fig 3], there was no statistically significant difference (p = 0.2065) in the mean SDL scores among the different age groups.



[Table/Fig 3]: Number of students securing more than or less than 150 in different age groups

DISCUSSION

The most basic, natural response to newness, problems or challenges in our surroundings, is self directed learning.[3] This study investigated the readiness for SDL among the first semester medical students by using SDLRS which was developed by Murray Fisher et al.[1] According to Fisher et al, total scores greater than 150 indicates the readiness for SDL. We found that the scores of 72.7% students were more than 150. This suggests that most of the students were ready for self directed learning. SDL ultimately reflects on their learning process and its outcomes.[11] The students who are ready for SDL can manage their own learning throughout their career.[12]

The mean age of the students was 18.8 years (SD = 1.14). One of the eligibility criteria for the candidates to get admission in Kathmandu University, to which the college is affiliated, is that the age should be 17 years (minimum), so the mean age of the respondents was close to it. The number of students of 18years of age, were more (51).

A previous study suggested that the students of the scholarship quota rated themselves as highly ready for engaging in SDL, which may reflect their high SDL score as compared to the students from the general quota.[10] But in our study, there was no significant difference in the total mean scores of the students under the scholarship and the self financing schemes. In our study, the number of scholarship students was low.

SDL, which is a prerequisite for life-long learning,[12] can flourish in certain learning environments.[3] Self-directed learners need motivation and self identity. They devalue their work if they (mean work) are not validated by some external authority and so, the facilitator must support and reassure them for better outcomes.[6] In PBL, the problem case triggers the students to do independent self directed learning.[13],[14] In one study, students who learned by using a PBL approach described the development of the character of self directed learning in them.[2] PBL motivates students, encourages them to set their own learning goals and gives them a role in decisions that affect their own learning.[3] At MCOMS, a hybrid approach with didactic lectures and PBL has been followed to teach MBBS students.[15],[16] This approach may help in developing SDL in our students, but facilitator training and capacity building may be required, as shown in a study in the United Kingdom.[17] Most of our faculty members have been trained in conventional curricula and may have difficulty in reorienting themselves to the requirements of PBL.

Thirty three students (27.3%) were having an SDL score which was less than 150. Students scoring less than 150 would have to depend on the teacher for the management of their studies, especially to formulate learning objectives and for evaluating the outcomes. According to Murray Fisher et al., these students may not perform well if they are not given opportunities to learn in highly structured situations. We anticipate that the majority of students near the group mean will adapt to our hybrid teaching-learning style. However, students with scores at the extremes may find the adjusting to certain learning environments more problematic.

Students having low SDL scores at the beginning of the course does not mean that they are unable to exhibit or master the behaviours; rather, they may not be given the opportunity to do so.[18] To develop SDL, the learner must have an opportunity to develop and practice skills which include asking questions, critically appraising new information, identifying their own knowledge and skill gaps and reflecting critically on their learning process and outcomes.[11],[14] Special care should be given to these students by the facilitator during the teaching- learning sessions to help them develop their SDL Skills.

SDL development could be purposely integrated into the curriculum.[19] The students who are exposed to a PBL curriculum take greater initiative and control over their learning activities and hence, develop SDL Skills.[14] So in MCOMS, by following the Kathmandu University curriculum, we have enormous potential to help our new medical students in developing SDL skills.

Though only few studies show a positive correlation between the SDL readiness scores and academic grades in students who are trained in the PBL curriculum[14], more research is required to provide evidence of the ability of SDLRS to predict student performance.[1],[12] This study can be planned among the same batch of students after two years (before entering into clinical curriculum) to see the correlation between their SDL readiness scores and their academic performance, as well as the change in their SDL scores after exposure to PBL.

Our study had limitations. Since the study was done in only one medical college, the results cannot be generalized to other medical schools. The study was self responding and so, the recall bias might be present in the study. Some of the first semester students (nine) did not participate in the study and were not forced to respond because the study was planned for voluntary participation.

CONCLUSIONS

Most of the first semester students are ready for self directed learning. Special care should be given to the few students having low SDL scores so that they can develop and practice SDL skills. Studies correlating the SDL score of the students and their academic performance are lacking. It may be necessary to study the correlation of the SDL scores with forthcoming University and licensure examinations before definitive major conclusions could be drawn. More research is required in this field.

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