ORIGINAL ARTICLE

RELIABILITY OF SELF DIRECTED LEARNING APTITUDE SURVEY TOOL

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ABSTRACT

Current reforms in medical education support learners who are self-directed. Measurement tools have been used to measure self-direction worldwide in varied situations. A reliable tool has not been used to measure self-direction ability of medical students. A cross sectional study was carried out to collect data from 220 MBBS and BDS students of Women Medical College Abbottabad, from first to final years between the ages of 18-24 years. All the participants were females. Self-directed learning aptitude survey (SDLAS) was administered. Convenient sampling was done to collect data. Data was analyzed on SPSS version 22 for descriptive statistics and Cronbach's alpha. Cronbach's alpha for the SDLAS scale and its subscales Self-management, Motivation and Self-monitoring were α*= 0.873, 0.771, 0.688 and 0.811 correspondingly. Self-direction of female medical students was reliably measured by self-direction aptitude tool.*

Key Words: *Self-directed learning, undergraduate medical students and self-directed learning, reliability and self direction.*

INTRODUCTION

Self-directed learning has been used interchangeably with other names in literature. It has been labelled as independent learning, self-determination, self-regulated learning and life-long learning.[1,2,3] Metacognition, strategy and control of motivation are the key concepts. It allows students to develop intellectual independence, collaboration, self-regulation and self-management.[4,5] Recent shift in medical education towards student centered learning, horizontal and vertical integration and small group teaching espouses a self-directed approach to teaching and learning, where motivation is mostly internal within the control of learner. Considering the importance of promoting self-directed learning, medical schools need a reliable tool to measure students' aptitude for it.[6,7] The knowledge acquired from such a tool would enable teachers to devise strategies which promote self-directed learning[8]. Self-Directed Learning Aptitude Survey (SDLAS) is a tool to measure self-direction and has been reliably tested. The purpose of this study was to find out Cronbach alpha reliability for Self-Directed Learning Aptitude survey.

METHODOLOGY

A cross sectional study was carried out at Women Medical College Abbottabad from October 2014 till March 2015. Convenient sampling was done to collect. Survey forms were distributed to three hundred students. All the students were females. Return rate was 73%. Students who consented were included in the study. Incomplete forms were rejected. The study was given ethical approval by the institute. Subscales, motivation, self-management, self-monitoring and SDLAS with twenty-six items (questions) were variables of the study. Items were scored as 5= strongly agree, 4= agree, 3=unsure, 2= disagree, 1=strongly disagree. Questions that were part of the subscales were as follows. 9 questions for self-monitoring (questions 6, 4, 13, 19, 23, 25, 21, 24, 16). 8 questions in self-management (question 1, 8, 14, 7, 3, 20, 5, 8) and 9 were in motivation scale (question 2, 15, 11, 22, 26, 9, 10, 17, 12).

RESULTS

Maximum score on the scale was 130, 78 was midpoint and minimum score was 26. SPSS version 22.0 was used for data analysis. SDLAS scale had a mean of 104.6±10 standard deviation (sd). self-monitoring 36.5±4.5, self-management 31.03±3.9 and motivation 37.13±3.7 sd. Cronbach alpha reliability of motivation subscale was 0.69, and that of self-monitoring, self-management and self-direction aptitude scale were 0.81 0.77 and 0.87 in that order. The lowest corrected item to total correlation of 0.13 was for item 15. Other questions had correlation above 0.2. 1.7% of the variance to SDLAS scale was by item 15. The same item contributed 5.5% variance to motivation as seen in the squared multiple correlation column. (Table 1)

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TABLE 1: ITEM-TOTAL STATISTICS FOR SELF-DIRECTION APTITUDE SCALE

Questions	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's alpha if Item Deleted
1	100.82	92.46	.489	.454	.867
8	101.1	92.6	.379	.375	.870
14	100.7	92.5	.472	.423	.867
7	100.72	92.5	.472	.423	.867
3	100.5	93.18	.523	.437	.867
20	100.63	94.44	.407	.375	.869
5	100.51	94.55	.365	.341	.870
18	101.05	90.372	.494	.414	.867
2	100.68	92.88	.413	.335	.869
15	101.23	96.25	.132	.236	.881
11	100.89	93.28	.399	.356	.869
22	100.54	94.84	.345	.323	.871
26	100.2	94.6	.417	.449	.869
9	100.14	95.24	.424	.484	.869
10	100.22	93.88	.491	.421	.867
17	100.33	94.26	.460	.371	.868
12	100.33	92.89	.488	.413	.867
6	100.56	92.31	.460	.41	.87
4	100.68	91.97	.501	.434	.87
13	100.69	93.1	.401	.34	.87
19	100.38	92.78	.54	.44	.87
23	100.44	94.26	.44	.45	.87
25	100.59	93.41	.39	.417	.87
21	100.64	92.93	.428	.50	.87
24	100.54	91.007	.512	.50	.87
16	100.7	91.02	.56	.45	.87

DISCUSSION

This study presents initial findings on reliability of Self direction aptitude of medical students enrolled in the MBBS course in Pakistan. Cronbach's alpha reliability was 0.77 for self-management, 0.69 for motivation and 0.81 for self-monitoring subscales of SDLAS scale in this study. Previous study on the same tool had a reliability of 0.82 for self-management, 0.84 for motivation and 0.86 for self-monitoring subscales.[5] Although reliability of motivation in our study is lower than that of the previous study. A study conducted in Italy found a reliable relation (Cronbach alpha=0.79) between motivation and self-direction[9]. For our students' self-management and self-monitoring had a respectable and very good reliable relation with self-direction aptitude respectively. Studies conducted in Iran and India also identified relationship between self-management and monitoring of learning to improve self-direction of medical students.[10,11] Analysis of items in the scale shows that all items should be kept in the scale except item number 15 "I am a why person". This item had low scores on corrected item correlation and squared multiple correlation hence may not be measuring the same underlying construct. Deleting it would increase reliability to 0.88 for SDLAS scale. Other questions should be kept as they had higher correlations and removing them would decrease reliability. The tool reliably measures the self-direction aptitude of female medical students but low rating on question fifteen shows lack of intrinsic motivation.

A person can have no motivation called amotivation, extrinsic and or intrinsic motivation[12]. An a motivated person has no external or internal driving forces and motivation is not regulated. For an externally motivated student the motivating stimulus may lie outside for example a reward or certificate and control of motivation may be outside the student for example a teacher or the student may itself realize significance of a task, learning of knowledge and the control of motivation is then a combination of internal and external loci[13].

Whereas an intrinsically motivated and a completely self-directed person will be motivated by inherent nature of the task and the satisfaction that such a learning provides. Such students are able to regulate or control their learning him or herself.[14,15] The SDLAS scale can help medical educators in identifying students' learning needs for promoting self-direction and to devise best suited teaching strategies for this purpose. Based on level of motivation and self-direction of the student the teacher can assume different roles. Teachers can use this opportunity to train the students to set their own learning goals and standards to become independent and self-directed learners and create a self-directed learning environment.[16,17,18] They can guide them to become intrinsically motivated learners from extrinsically motivated ones[19]. SDLAS tool can be used to assess self direction and motivation level of students and train them to be self-directed according to their developmental need. SDLAS tool may be able to provide data for student centered curriculum development. Students can use this tool as a metacognitive strategy to become aware of their own self direction need and take measures to improve it. Studies have shown that metacognition is an important strategy to become self-directed learner.[20,21]

The tool is reliable for female MBBS students. The study was conducted at one private medical college and there might be difference between private sector and public sector medical students hence results of the study are not generalizable.

CONCLUSIONS

SDLAS is reliable for measuring self-direction aptitude of female medical students in Pakistan. This study proved the reliable relationship between self-management, self-monitoring and motivation. Further studies should be carried out to compare results between public and private sector students.

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