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Original Research Article

Readiness for self-directed learning among King Abdulaziz University medical students

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ABSTRACT

Background: To determine readiness for self-directed learning (SDL) among medical students enrolled at King Abdulaziz University (KAU) in Jeddah, Saudi Arabia, as well as identify demographic characteristics that might affect or control such readiness.
Methods: Medical students at all levels of training were asked to participate in a study in the form of a self-response questionnaire via emailed link (Gugliemino's Self-Directed Learner Readiness Scale [SDLRS]). This instrument was designed to measure the complex attitudes, skills and characteristics that comprise an individual's current level of readiness to manage his or her own learning. Data were analysed using SPSS, and mean, median and total scores were calculated and compared.
Results: Of more than 1900 medical students at the KAU Faculty of Medicine, 192 students responded to the self-response questionnaire (see appendix). Results suggested that readiness for SDL is below average for more than 99% of medical students
Conclusions: Our study showed that further evaluation of our students' readiness for SDL is required, as well as exploration and implementation of tools for improving skill and knowledge development, to enable students to develop a lifelong learning attitude.

Keywords: Medical students, Self-directed learning, Self-directed learning readiness scale

INTRODUCTION

Self-directed learning (SDL) is one of many skills that medical students must acquire and adopt, to enable lifelong learning throughout their career.

It has recently been incorporated as an integral part of the undergraduate curriculum at King Abdulaziz University (KAU) Faculty of Medicine. Problem-based learning is the most common tool used to develop and practice SDL at present faculty.

Knowles defined SDL as 'a process in which individuals take the initiative with or without the help of others in diagnosing their learning needs, formulating goals, identifying human and material sources, and evaluating learning outcomes.'[1]

SDL provides students with the ability to search for information, and know what to learn and to what depth. SDL also gives students the ability to control their attitude while learning.[2,3]

SDL is embedded in innovative medical curricula and students enrolled in the system must have competency in SDL. Students come from different educational and social backgrounds that may affect their readiness to differing extents.

Therefore, the assessment of students' SDL readiness is considered a key indicator in the ongoing monitoring of the KAU medical program and will also highlight areas for improvement. This study was designed to explore the SDL readiness of KAU medical students.

METHODS

Ethical approval from the Research Ethics Committee at Faculty of medicine was obtained to conduct an online survey in the second quarter of 2016, directed to all medical students enrolled at the KAU Faculty of Medicine, ranging from those in their second year (First years students are excluded as they are in preparatory course for all health sciences) of enrolment to those at the end of their internship.

The survey included basic demographic data on social and educational background and 19 standardized questions from Guglielmino's Self-Directed Learner Readiness Scale (SDLRS). The survey was in English and distributed to medical students via emailed link.

Data collection and statistical analysis

Data were transferred from an Excel spreadsheet into SPSS version 20 for analysis. The questions were studied in accordance with http://www.lpasdlrs.com, the online version for use in research. We scored responses for 19 questions out of total 58, and the scoring was modified to reflect this.

The original and modified scoring is shown in Table 1.

Table 1: SDLRS original and modified scoring.

Readiness for SDL	Modified score	Original score
Below average	19 – 66	58-201 (20-69.3 %)
Average	67 – 75	202-226 (69. 4-78.2%)
Above average	75 – 95	227 – 290 (78.3-100%)

RESULTS

Of more than 1900 medical students, responses were obtained from 192 students (~10%). Most of the responses came from female medical students (>70%) and the majority of students who responded were single. Almost all obtained their secondary school education locally Saudi Arabia with high grades >98% (98% of respondents) while less than 50% had grade A at the medical school. Two-thirds were bilingual in Arabic and English (Table 2).

Social data revealed that most respondents had parents with bachelor graduate educational level, with fathers more likely than mothers to have obtained higher degrees and international certificates. Most respondents had at least two family members in the medical field (Table 3).

Table 2: Demographic characteristics of participants (N = 192).

Variable	n (%)	Significance
Gender		P = 0.0001
Male	52 (27.1%)	
Female	140 (72.9%)	
Marital status		P = 0.0001
Single	174 (90.5%)	
Engaged	13 (6.8%)	
Married	5 (2.6%)	
Secondary school		P = 0.0001
Public	125 (65.1%)	
Private	55 (28.6%)	
International	12 (6.3%)	
Location of secondary school		P = 0.0001
Saudi Arabia	189 (98.4%)	
North America	1 (0.5%)	
Asia	1 (0.5%)	
Africa	1 (0.5%)	
Grade		P = 0.0001
>95%	178 (92.7%)	
>90%	13 (6.8%)	
>85%	1 (0.5%)	
Spoken languages		P = 0.0001
Single	28 (14.5%)	
Bilingual	150 (78.1%)	
Trilingual	13 (6.8%)	
Multi-lingual	1 (0.5%)	
Level at medical school		P = 0.0001
First year	4 (2.1%)	
Second year	18 (9.4%)	
Third year	34 (17.7%)	
Fourth year	37 (19.3%	
Fifth year	34 (17.7%)	
Sixth year	57 (29.7%)	
Internship year	8 (4.2%)	
Grade in medical school		P = 0.0001
A	75 (39.1%)	
B	81 (42.2%)	
C	34 (17.7%)	
D	2 (1.0%)	

Although the majority were enrolled in the Faculty of Medicine by their own choice (>70%), almost 10% reported no awareness of SDL.

Table 3: Social background (N = 192).

Variable	n (%)	Significance
Number among siblings		P = 0.0001
First	52 (27.1%)	
Middle	105 (54.7%)	
Youngest	35 (18.2%)	
Mother's age (years)		P = 0.0001
40 – 50 years	106 (55.2%)	
50 – 60 years	83 (43.2%)	
>60 years	3 (1.5%)	
Mother's educational level		P = 0.0001
Primary	19 (9.9%)	
Secondary	25 (13.0%)	
Elementary	25 (13.0%)	
Bachelor	91 (47.4%)	
Master	13 (6.8%)	
PhD	19 (9.9%)	
Origin of certificate of mother		P = 0.0001
Saudi Arabia	172 (89.6%)	
Non-Saudi Arabia	20 (10.4%)	
Father's age (years)		P =0.0001
40 – 50 years	37 (19.3%)	
50 – 60 years	102 (53.1%)	
>60 years	53 (27.6%)	
Father's educational level		P =0.0001
Primary	7 (3.6%)	
Secondary	23 (12.0%)	
Elementary	20 (10.4%)	
Bachelor	87 (45.3%)	
Master	27 (14.1%)	
PhD	28 (14.6%)	
Origin of certificate of father		P =0.0001
Saudi Arabia	143 (74.5%)	
Non-Saudi Arabia	40 (25.5%)	
Number of healthcare practitioners in the family (mean [SD] [range])	1.51 (1.88) (0.00 – 11.00)	

Table 4: Knowledge regarding learning (N = 192).

Item	n (%)	Significance
Reason for choosing medicine		P = 0.0001
Personal wish	149 (77.6%)	
Peer effect	4 (2.1%)	
Grade	20 (10.4%)	
Family wish	19 (9.9%)	
Are you aware of self-directed learning		P = 0.0001
Yes	175 (91.1%)	
No	17 (8.9%)	
Do you believe self-directed learning improves your learning?		P = 0.0001
Yes	128 (66.7%)	
No	64 (33.3%)	
Do you lack the supporting resources for teaching that influence your self-directed learning?		P = 0.0001
Yes	130 (67.7%)	
No	62 (32.3%)	
Which is the most important factor affecting your self-directed learning		P = 0.0001
Teaching environment (campus vs. hospital)	30 (15.6%)	
Personal ability	64 (33.3%)	
Syllabus and curriculum	41 (21.4%)	
Classroom and audiovisual support	15 (7.8%)	
Tutor	42 (21.9%)	

Table 5: Knowledge regarding learning (n= 192).

Item	Mean score (SD): all participants	Mean score (SD): males (n=52)	Mean score (SD): females (n=140)	p-value (males vs. females)
I'm looking forward to learning as long as I'm living	1.68 (0.83)	1.60 (0.87)	1.71 (0.82)	0.990
I know what I want to learn	2.11 (0.94)	2.08 (0.88)	2.13 (0.97)	0.405
When I see something that I don't understand, I stay away from it	3.51 (1.02)	3.46 (0.96)	3.53 (1.04)	0.509
If there is something I want to learn, I can figure out a way to learn it	1.98 (0.86)	2.02 (0.85)	1.96 (0.86)	0.402
I love to learn	1.68 (0.82)	1.77 (0.85)	1.65 (0.81)	0.660
It takes me a while to get started on new projects	2.31 (0.95)	2.12 (0.78)	2.39 (1.00)	0.014
In a classroom situation, I expect the instructor to tell all the class members exactly what to do at all times	2.75 (1.09)	2.58 (1.04)	2.81 (1.10)	0.677
I believe that thinking about who you are, where you are and where you are going should be major part of every person's education	1.78 (0.93)	1.67 (0.81)	1.81 (0.97)	0.439
I don't work very well on my own	3.36 (1.14)	3.21 (1.07)	3.41 (1.16)	0.173
If I discover a need for information that I don't have, I know where to go to get it	2.41 (0.93)	2.44 (0.89)	2.40 (0.95)	0.456
I can learn things on my own better than most people	2.36 (1.00)	2.38 (0.77)	2.36 (1.07)	0.008
Even if I have a great idea, I can't seem to develop a plan for making it work	2.77 (1.02)	2.62 (0.91)	2.83 (1.05)	0.433
In a learning experience, I prefer to take part in deciding what will be learnt and how	2.32 (0.95)	2.37 (0.84)	2.30 (0.99)	0.282
Difficult study doesn't bother me if I'm interested in something	2.14 (1.08)	2.23 (1.04)	2.10 (0.09)	0.927
No one but me is truly responsible for what I learn	2.27 (1.07)	2.25 (1.08)	2.27 (1.07)	0.942
I can tell whether I'm learning something well or not	1.86 (0.84)	1.88 (0.73)	1.85 (0.88)	0.309
There are so many things I want to learn that I wish there were more hours in a day	1.781 (1.01)	2.04 (1.07)	1.69 (0.98)	0.763
If there is something I have decided to learn I can find time for it no matter how busy I am	2.831 (1.09)	2.94 (0.96)	2.79 (1.14)	0.041
Understanding what I read is a problem for me	3.21 (1.13)	3.05 (0.99)	3.27 (1.17)	0.050

Table 6: SDLRT questionnaire total scores.

Mean (SD) total score	45.11 (7.94)
Level of total score n (%)	
Below average (19 – 66)	191 (99.50%)
Above average (75 – 95)	1 (0.50%)

More than 60% believed that SDL would improve their learning. Lacking the required resources and personal ability were the most frequently reported factors in SDL (Table 4). Table 5 shows readiness for SDL among the respondents and also shows this information with a comparison between females and males. In terms of total score (Table 6), most respondents (99.5%) scored between 19 and 66, which is below average. The questionnaire contained an open field for further respondent comments and these are listed in Table 7.

Team learning, clearly stated objectives and a well-structured syllabus were the most-reported contributing factors identified as enabling more effective adoption of SDL.

DISCUSSION

Medical education mandates that medical students are able to learn by themselves, with flexible competencies that will allow lifelong learning throughout their medical career.[4,5] The recently developed medical curriculum at KAU includes new educational tools requiring the ongoing monitoring and evaluation of both medical students and the medical faculty. Although PBL is the most important tool for this, and has been used extensively, our results suggested that readiness for SDL among medical students is below average.[6] Medical students have reported many challenges with SDL from their perspective; some are system related and others

appear related to personal potential.[7,8] In present study, we observed variation between medical students at different levels and worth in-depth analysis of the data for results to be specific and considered.[9,10]

Table 7: Further comments (N = 192).

Comment	n (%)
'Finding new ways to teach and learn, and transfer these ideas to students is always good for us'	1 (0.5%)
'It will be better in groups so you can learn more and share information'	1 (0.5%)
'Good luck'	10 (5.2%)
'I really need help to find a better way to study by myself'	1 (0.5%)
'Difficulty studying could be due to poor English'	1 (0.5%)
'For me…I found that I learn better when the doctors give the information in a simple way'	2 (1.0%)
'Self-directed learning is a great way to learn provided we have a well-trained tutor'	2 (1.0%)
'I think studying on my own is sometimes better than being with a lot of doctors at my college'	2 (1.0%)
'The problem is not in studying the problem … it is in the tests'	2 (1.0%)
'Sometimes I don't understand the objectives of SDL well, so this affects me in studying with SDL'	9 (4.7%)
'Syllabus'	5 (2.6%)
'I usually don't continue what I started'	3 (1.6%)

CONCLUSION

This study provides initial data about readiness for SDL among medical students at KAU. More than 99% of medical students who responded to the survey scored below average in their knowledge and application of SDL. Further detailed studies, using focus groups from each level and gender, are required to meaningfully expand and apply this knowledge, together with further survey research using the full SDLRS 58-question set.

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