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Research Article

Students' evaluation of health promotion learning outcomes: a case from a Malaysian institute

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ABSTRACT

Background: Health promotion (HP) is getting recognition in most medical school curricula. The aim of this study is to assess students' perception of learning outcomes and the main factors affecting these outcomes.
Methods: This was a prospective cross-sectional which involved all year four medical students who completed the population health posting for two successive academic sessions 2011-2012 and 2012-2013. Self-administered questionnaire was used to assess course characteristics, teaching environment and acquired knowledge, skills and attitude. Response to each survey question was described. Structural Equation Modelling was used to test the relation between course characteristics, teaching environment and knowledge, skills and attitude. Path coefficients with corresponding significance test were presented.
Results: Three hundred and thirty students with mean age of 22.6 years returned the completed questionnaire. There were about 69.1 % female students and 30.9 % males. Most respondents gave positive feedback regarding course characteristics. However, around 47% were not sure about clarity of the objectives. Students provided favourable responses to the statement evaluating lecturer performance and the class environment including opportunities for learning. Majority of respondents showed favourable response to statement assessing the defined attitude, skills and attitude. Lower higher ratings were observed for statements reflecting respondent autonomy, ability to work in difficult situation and managerial abilities. Path model showed that teaching environment impacted knowledge, skills and attitude, while course characteristic impacted the gained attitude only.
Conclusions: Health promotion program is perceived to be sufficient to prepare students for professional life. Teaching environment had more impact on learning outcomes.

Keywords: Health promotion, Medical, Curriculum, Malaysia

INTRODUCTION

Health promotion program is seen as integral part of the undergraduate curriculum to produce competent graduates who practice holistic medicine. As the world witnesses an epidemic of NCDs that claims around 60% of world population annually[1], medical institutions has had to emphasize the role of preventive medicine from the early year of teaching.[2,3] Inclusion of the preventive medicine curriculum took different shape and size from different countries. For instance, the subject of health promotion was introduced as a core subject in undergraduate medical curricula at UK as a response the

move from reliance on inpatient care solely to inclusion of community-based approach.[4]

Health promotion comprises a significant part of Public-health medicine of undergraduate teaching at the University of Sydney besides other subject of disease prevention, surveillance, health management and other components.[5] In response to increased death in the USA ,that is caused by modifiable behaviours such as smoking, unhealthy diet, and lack of physical activity.[6] The Healthy People Curriculum taskforce defined the core competencies needed to prepare clinician for health promotion roles.[7]

Malaysia is one of the developing countries who are aiming to achieve developed status by the year 2020. The improvement in the gross national product per capita, improvement of living conditions and accessibility to foods and other goods were associated with increase in life expectancy.[8,9] These changes were accompanied by increasing NCDs and the death attributed to these diseases reached around 69.5 % of the total mortality of Malaysia in 2010.[10]

The Faculty of Medicine, University technology MARA (UiTM), Malaysia has adopted dynamic approach in designing the curriculum to respond to the needs of the rapidly changing socioeconomic paradigm of the country, so that the graduates will be able to address the appealing needs of their country and communities.

Students' reflection is crucial in defining the strength and the weakness of the program and informing the curriculum adviser to overcome the caveats and build on. There is a prevailing notion from published reports that there are deficiencies and lack of systematic way of conducting this course[11] and that the teaching of this subject is patchy and inadequate.[12]

Students seemed different form lecturer in their rating of importance on including the program earlier in the curriculum.[13] The aim of this study therefore is to assess students' opinion about the knowledge, attitude and skills they gained from the health promotion program at the faculty of medicine along with their evaluation of the course and educational environment they encountered. The study also aimed at identifying components that most affect acquisition of coded knowledge, attitude and skills.

METHODS

Health promotion curriculum

Population health and preventive medicine component was included in the newly designed problem based curriculum of UiTM, in which the student is introduced to the concepts of epidemiology, disease prevention, statistical analysis and community research. Health promotion program is part and parcel of population health and preventive medicine; it is incorporated with community health research in a course of four weeks of year four medical curriculum.

It is composed of minimal didactic hours (3-4 hours), self-directed learning and implementation of health promotion campaign at the end of the third week of the posting. The health promotion campaign includes, health screening, health talks, exhibition, games and aerobics.

Instrument

The current questionnaire was adopted mainly from the Student Evaluation of Educational Quality (SEEQ) - SHORT VERSION 14 and was modified to suit the objectives of the current study. It is composed of five domains. The first domain," course" taps the overall course characteristics in terms of worthiness of the course to the students, example of the items "I found the course intellectually challenging and stimulating ". The second domain, "Teaching", assesses student opinion about teaching environment including lecturers and teaching quality. The other three domains are constructed to reflect the desired learning outcome of the population health curriculum.

The knowledge domain included questions to tap the gained knowledge regarding scope of health promotion, behavioural changes and factors affecting health behaviour along with health education process. Questions regarding knowledge started with a common statement of 'At the end of the posting, I have understood'. The attitude domain is mainly gauging the acquired values during the course that affect the students' ways of expressing themselves when carrying out health promotion activities. Students endorsed questions started with statement "After completing the posting, I realized the importance of". The skills domain taps the expected skills a student would acquire in the period of the undergraduate HP program. Questions started with common statement 'After completing the posting'.

Procedure

This was a prospective data collection which involved all year four medical students who completed the population health posting for two successive academic sessions 2011-2012 and 2012-2013. The study was designed to capture the perception of the student at the end of each posting. The questionnaire was distributed at the last day of the posting after the students had sat for the exam. This was important as bias of favourable response might be expected if the questionnaire would have been distributed before the exam.

Statistical analyses

Data were entered and analyzed using SPSS version 20. Frequencies and percentage were used to describe responses to each survey question. Item mean and SD was also calculated. Structural equation modelling was

used to test the relation between course characteristics and teaching environment with knowledge, skills and attitude. Path coefficients with corresponding significance test were presented.

RESULTS

Three hundred and thirty students with mean age of 22.6 and SD 0.8 years returned the completed questionnaire out of 360 targeted in this study. There were about 69.1 % female students and 30.9 % males who gave information about sex.

Course

Table 1 shows the response to each survey question in regards to course characteristics. Majority of the students agreed and strongly agreed with statements regarding the value of the course, characteristics of the course and achievement of the learning outcomes and course objectives. Around 45.5 % felt that the workload was light and the other 32.5 % and 22 % were neutral and disagreed with statement respectively. However 47% were not sure about clarity of the objectives and more than a third (36.9%) agreed that objectives were clear.

Teaching

Responses to questions about teaching quality and environment are shown in table 2. It is observable that the students provided favourable responses to the statement evaluating lecturer performance and the class environment including opportunities for learning.

Knowledge, attitude and skills

Table 3 shows students' rating about achievement of desired knowledge, attitude and skills as outcomes of the program. Responses were all favouring good outcome with response to knowledge about determinants of disease was the lowest (78.9%). In regards to attitude, majority of respondents showed favourable response to gaining the defined attitude. In terms of skills, questions regarding collaboration and communication with others were highly endorsed by the respondents. Lower higher ratings were observed for statements reflecting respondent autonomy, ability to evaluate health needs and integration of evidence based-data.

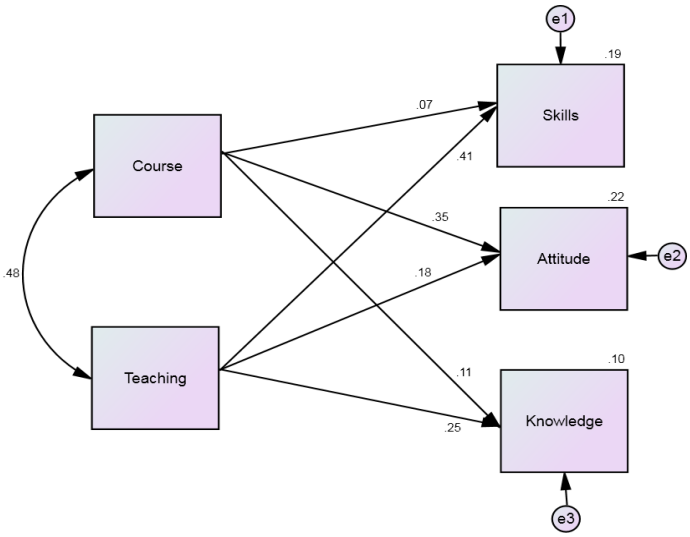

Figure 1: Hypothesized Model.

Relation of course characteristics, teaching environment, and knowledge, attitude and skills

Figure 1 shows the hypothesized model that explains the relation between different domains under the study.

It is observable that course characteristic didn't have a significant impact on gained knowledge and skills, only acquired attitude. On the other hand quality of teaching had a significant impact on gained knowledge, attitude and skills.

Table 1: Distribution of answers about course characteristics.

Course characteristics	SD-D, n (%)	Not siren (%)	A-SA, n (%)	Mean(SD)
I have learned something, I consider valuable.	2 (0.6)	8 (2.4)	324 (97)	2.96 (0.21)
The course was useful.	7 (2.1)	14 (4.2)	313 (93.7)	2.92 (0.34)
The gained knowledge and experience is useful to my career as a doctor.	4 (1.2)	18 (5.4)	312 (93.4)	2.92 (0.31)
The course provided me with new ideas.	9 (2.7)	20 (6)	305 (91.3)	2.89 (0.39)
I found the course intellectually challenging and stimulating.	9 (2.7)	23 (6.9)	301 (90.4)	2.88 (0.40)
The course stimulates student's innovation and creativity.	8 (2.4)	27 (8.1)	299 (89.5)	2.87 (0.40)
I think I have achieved the learning outcomes.	2 (0.6)	48 (14.5)	282 (84.9)	2.84 (0.38)
My interest in the subject has increased as a consequence of this course.	17 (5.1)	48 (14.4)	269 (80.5)	2.75 (0.53)
Objectives have been achieved.	6 (1.8)	45 (13.6)	281 (84.6)	2.83 (0.42)
The content was appropriate to my needs.	47 (14.1)	39 (11.7)	247 (74.2)	2.6 (0.724)
The Course workload was light.	73 (22)	108 (32.5)	151 (45.5)	2.23 (0.78)
The course objectives were clear.	53 (16.2)	154 (47)	121 (36.9)	2.21 (0.69)

Table 2: Distribution of answers about teaching environment.

Teaching environment	SD-D, n(%)	Not sure, n (%)	A-SA, n (%)	Mean(SD)
Lecturers were friendly towards students.	0 (0)	5 (1.5)	327 (98.5)	2.98 (0.122)
In general, the overall performance of the lecturer was very good.	1 (0.3)	10 (3)	321 (96.7)	2.96 (0.202)
The lecturers had a respectful relationship with the student.	1 (0.3)	13 (3.9)	318 (95.8)	2.95 (0.22)
Students were invited to share their ideas and knowledge.	5 (1.5)	13 (3.9)	315 (94.6)	2.93 (0.30)
The lecturers were responsive to student needs and problems.	6 (1.8)	13 (3.9)	313 (94.3)	2.92 (0.32)
Lecturers were committed to the course.	12 (3.6)	11 (3.3)	308 (93.1)	2.89 (0.40)
Students were encouraged to ask questions.	11 (3.3)	14 (4.2)	308 (92.5)	2.89 (0.40)
I felt welcome in seeking help/advice in or outside of class.	1 (0.3)	26 (7.8)	306 (91.9)	2.92 (0.28)
Work and efforts were acknowledged.	10 (3)	34 (10.2)	288 (86.7)	2.84 (0.44)
Lecturers were punctual.	11 (3.3)	39 (11.7)	282 (84.9)	2.82 (0.46)
Lecturers were adequately accessible.	17 (5.1)	46 (13.8)	270 (81.1)	2.76 (0.53)
The lecturers presented material in an easy manner.	34 (10.3)	46 (13.9)	251 (75.8)	2.71 (0.55)
Enough time was given to raise issues.	16 (4.8)	66 (19.8)	251 (75.4)	2.66 (0.65)

Table 3: Distribution of answer about knowledge, attitude and skills.

Knowledge gain	SD-D, n (%)	Not sure, n (%)	A-SA, n (%)	Mean(SD)
Health education, its approaches and methods.	3 (0.9)	15 (4.5)	314 (94.6)	2.94 (0.27)
Communication in health education.	2 (0.6)	18 (5.4)	311 (94)	2.93 (0.27)
The scope of health promotion.	2 (0.6)	21 (6.3)	309 (93.1)	2.92 (0.28)
The factors affecting health behaviour.	5 (1.5)	31 (9.4)	295 (89.1)	2.88 (0.37)
The meaning of behaviour and change.	5 (1.5)	58 (17.5)	268 (81)	2.79 (0.44)
The determinants of disease.	8 (2.4)	62 (18.7)	261 (78.9)	2.76 (0.47)
Attitude				
Treating community with respect and dignity.	2 (0.6)	10 (3)	319 (96.4)	2.96 (0.23)
Being aware of own limitations.	2 (0.6)	31 (9.4)	298 (90)	2.89 (0.32)
Working with the community and other health care professionals	0 (0)	12 (3.6)	319 (96.4)	2.96 (0.18)
Respecting and understanding interactions of a multiracial and multicultural society	4 (1.2)	10 (3)	317 (95.8)	2.95 (0.27)
Considering continuous professional development as an essential, lifelong obligation.	0 (0)	14 (4.2)	316 (95.8)	2.96 (0.20)
Skills				
I feel I am able to work with the community in order to promote healthy life-style.	4 (1.2)	18 (5.4)	309 (93.4)	2.92 (0.31)
I feel I am able to manage available resources, collaborate with other health professionals.	1 (0.3)	27 (8.2)	301 (91.5)	2.91 (0.29)
I feel I am able to communicate effectively with community and community head.	7 (2.1)	47 (14.2)	277 (83.7)	2.82 (0.44)
I feel I am able to plan and execute a health promotion program.	3 (0.9)	66 (19.9)	262 (79.2)	2.78 (0.43)
I feel I can work in difficult conditions.	13 (3.9)	56 (16.9)	262 (79.2)	2.75 (0.51)
I feel I am able to evaluate the health needs of a community.	8 (2.4)	78 (23.6)	245 (74)	2.72 (0.50)
I Feel I am able to Integrate Evidence-based data into my practice.	17 (5.1)	76 (23)	238 (71.9)	2.67 (0.57)
I feel I am able to manage project and work independently.	101 (30.2)	137 (41)	96 (28.7)	1.99 (0.76)

Table 4: Path coefficients.

Regression coefficient		Unstandardized			standardized	P
		Estimate	S.E.	C.R.		
Course	Knowledge	0.058	0.031	1.89	0.113	0.059
Course	Skills	0.021	0.018	1.16	.066	0.246
Course	Attitude	0.305	0.049	6.239	0.349	<0.001*
Teaching	Knowledge	0.208	0.05	4.121	0.246	<0.001*
Teaching	Skills	0.214	0.03	7.187	0.406	<0.001*
Teaching	Attitude	0.265	0.08	3.292	0.184	<0.001*

*Path coefficient is significant at 0.05

DISCUSSION

Health promotion program is a core subject that is included in the new problem based learning curricula in most of world institutes.[15] Researches on evaluating the curriculum design include the expert, curriculum designer and students. Reflection is a fundamental strategy to gain insight about the performance of the faculty which can be employed in the design/improvement and development of next cohort.[16]

UiTM Malaysia emphasizes the value of self-learning by undergraduate students under faculty guidance, and our students were uniform in their satisfaction with the achievement of learning outcomes. This was clearly observable when our students provided favourable responses to the statement evaluating lecturer performance and the teaching environment including opportunities for learning. These results could be explained by the fact that the all lecturer of this course are medical doctors who are adequately trained to impart knowledge, enhance problem solving skills, and inculcate professional attitude.

Surprisingly, 47% of the respondents were not sure about clarity of the course objectives. It might be early for medical student to estimate the future application of HP. There may also no career opportunities in HP that have been blooming and appealing to medical graduate compared to clinical medicine. Lack of public HP campaign or governmental program may blur the vision of students about future and impairs the clarity of program objectives.

The result that most of students expressed good response about knowledge reflect the accumulation of knowledge gained through spiral mode of learning where it starts from year one through year four of the medical curriculum. Public health subjects usually includes topics of disease determinants, causation and role of life style in the epidemic of NCDs

There positive feedback about gained skills might contradict the prevailing notion that undergraduate curriculum don't integrate topics leaving public health as a lateral topic where student didn't see the link to clinical medicine.[17,18]

However, students in this study seemed more confident to work as team or with others than working independently. This may reflect that students felt more confident when working with experienced personnel and with group. This fact may be attributed to that the students had enough self-confidence as they worked in a group in the class where the role of lecturers were observatory and to keep them in track rather than acting on their behalf in professional manner; that is why student felt more confident in relation to work in groups.

The positive feedback is also attributed to the hybrid design of the curriculum; although e-learning material was minimal , the course was diverse and included face to face instruction, tutorial, student-led seminars in addition to opportunities for the student for innovation in choosing the program them, design the activity, T-shirts and other requirements. Students also given leadership role in officiating the program and delivering a health talk to the audience.

Surprisingly, this study showed that course characteristic didn't affect the gained knowledge and skills; quality of teaching impacted the outcome significantly. As mentioned above, it seems that the impact of the lecturer-related characteristic is more than the course design itself. This may highlight that medical students are particularly impacted by the role model they encounter than the easiness of the course and its objectives. Our results are consistent with some studies which showed that teachers' knowledge, characteristics, qualities and class opportunities are directly related to students' achievement.[19-21]

The need for a competent medical professional is pivotal to reverse the escalating life styles disease. It has been recognized that any endeavour to change the health care paradigm and model of patient care should involve equipment of medical professionals with new methodologies about disease prevention and health promotion.[7] Based on the results of current study; one can understand that Health promotion program at UiTM is an experience that aims to change the attitude of Malaysian upcoming era of specialists.

We have recognized some limitations of this study. First, it lacks comparison with other medical school in

Malaysia that adopts different approach to implementing HP; this would limit the space for reader to decide on which curriculum would improve the student ability. A Cross sectional study may not reflect within-student change, it reflect the current perception, a longitudinal follow of those cohort perception about benefits of this program in their medical practice would reflect better indication about effectiveness of the program for graduating doctors.

CONCLUSION

Health promotion program is perceived to be sufficient to prepare students for professional practice. It achieved the stipulated learning outcomes. Teaching environment had more impact on learning outcomes.

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