



Self awareness and reflective skills in the promotion of personal and professional development of future medical professionals

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ABSTRACT

Introduction: Self-awareness and reflective-skill are important components of personal and professional development of medical students. **Objective:** The objective of this study was to determine whether self awareness and reflective skill could be improved by direct teaching intervention. **Method:** This was a cross sectional intervention study conducted among 75 third year medical students of UKM Medical Centre Malaysia in 2010. Malaysian Emotional Quotient Inventory (MEQI) was used to measure self-awareness and reflective writing scripts were used to measure the reflective skills of the respondents before and after teaching intervention. Experimental group comprised of 30 students while the control group constituted the rest 45 students selected randomly. The factors contributing to self awareness with gender and learning styles were determined. **Result:** There was no significant improvement observed in self-awareness of the respondents but reflective skills was significantly improved ($p=0.007$) following intervention. A non-significant relationship between self-awareness and gender ($p=0.588$) as well as self-awareness and learning styles ($p=0.435$) was also noticed. **Conclusion:** It is concluded that intervention programs improved students' reflective skills but not their self-awareness. Effectiveness of the intervention programme is an important factor. Continuous effort should be focused to train students in an effective way in order to be more self-reflective, self-regulative as well as self-corrective, to ensure a high level of personal and professional development in their daily practices.

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Introduction

Self-awareness is defined as the awareness of one's own feelings and ability to recognise and manage these feelings in a way, which one feels that one can control (1) Self-awareness is the insight into how physicians' emotional

intelligence influences patient care and their performances. Emotional quotient (EQ) comprises of many sub-domains, one of which is self-awareness. For medical students, self-awareness is seen as helping them to hold responsibility for learning, encouraging self-motivation and independence in learning. Self-

awareness facilitates them to be successful life-long learners and able to monitor their own learning and performance.

Several factors contribute to the level of self-awareness. Many studies demonstrated that females generally score higher in EQ as compared to males (2, 3). Student's learning styles contribute to self-awareness, where a positive relationship was established between a deep approach to learning and self-assessment skill (4). Individuals with better communication skills are demonstrated to have high self-awareness (5) and higher confidence level among themselves (6).

Reflective skill is described as an ability to identify personal errors and make evidence-based decisions. Self-awareness and reflective skills are closely related in which self-reflection involves learning processes, whereas self-awareness becomes the objective of the process (7).

This study was intended to determine whether self-awareness and reflective skill among medical students could be improved by direct teaching intervention in order to promote personal and professional development of future medical professionals.

Method

This was a cross sectional intervention study conducted in 2010 involving third year medical students of Universiti Kebangsaan Malaysia (UKM) Medical Centre of academic session 2009/2010. Systematic random sampling technique was used to select 94 students sample.

Students who completed the Malaysian Emotional Quotient Inventory (MEQI) test in May 2009 and who completed two reflective writings in the time given and attended intervention programme (for the intervention group) during the study was included in the study. Students who refused to give written consent to participate and failed to submit two reflective writings by the deadline given and failed to attend intervention programme were

excluded from the study protocol. Of 94 students, the study protocol was completed by 75 students giving a response rate of 79.79%, of which 30 students were selected in the intervention group and 45 students were in the control group.

At the beginning of the study, all students filled up a questionnaire through which we obtained their demographic information. Self-awareness score were derived from the MEQI test that the students completed in 2007, when they were in Year-1. Students' learning styles were determined using Honey and Mumford's Learning Styles Questionnaire (8). Students were instructed to submit reflective writings of not more than 300 words on their overall performance and achievement in the recent end-semester exam, including their study progress and improvement.

Later, the intervention group attended two sessions of small group discussion which included a movie commentary and comparison of reflective writings. During the movie commentary, the students watched a two-hour medical movie entitled 'Wit' and then discussed in detailed the strengths and weaknesses of the main characters in the movie. In the second intervention, the students were guided to differentiate two reflective writings on the same topic which represented the extreme spectrum of reflection, deeply reflective versus non-reflective.

In the final stage, all the students were instructed to undergo the online MEQI test once again and submit a second reflective writing on their attributes. All reflective writings were assessed by two independent assessors. The information obtained from the socio-demographic data, MEQI and score of reflective writing with or without intervention were analyzed using SPSS version 17.0. The mean score of MEQI and reflective writing between the intervention and the control group was compared.

Result

Table 1 showed students' profile in terms of gender and learning style. Majority (72%) of the students were females and were reflector learners (77.3%).

Table 1. Students' profile in terms of gender and learning styles.

Variables		Frequency	Percentage
Gender	Male	21	28
	Female	54	72
Learning styles	Reflector	58	77.3
	Activist	6	8
	Theorist	6	8
	Pragmatist	5	6.7

Table 2 revealed the mean self-awareness and reflective skill scores of the respondents before and after teaching intervention. There is statistically significant improvement of reflective skills in intervention group following intervention ($p=0.007$; <0.05) but not in self-awareness skills.

Table 2: Self-awareness and reflective skill of the students between intervention and control group before and after teaching intervention

Skills	Group	n	Pre-score Mean (SD)	Post-score Mean (SD)	<i>p</i> value
Self awareness (by MEQI test)	Int	30	66.47 (5.86)	67.02 (6.12)	0.551
	Ctr	45	65.09 (4.86)	66.36 (5.25)	0.158
Reflective skills (by Reflective writing test)	Int	30	10.05 (3.59)	11.72 (3.07)	*0.007
	Ctr	45	8.68 (2.94)	9.30 (2.99)	0.151

n = number; * ($p<0.05$); SD = Standard Deviation
Int = Intervention, Ctr = Control

Table 3: Association between self-awareness and gender

	Male (n=21)	Female (n=54)	<i>p</i> value
Self-awareness score, mean \pm SD (Derived from first MEQI)	65.12 \pm 4.86	65.84 \pm 5.47	0.598

SD = Standard Deviation

Table 3 showed the association between self-awareness and gender. The average score of self-

awareness for all respondents, as derived from the MEQI in 2009, was 65.41%, much lower than the norm of Malaysian population. There was no significant difference between self-awareness and gender.

Table 4 showed the association between self-awareness and learning styles. It revealed that students who were theorists had highest mean score of self-awareness (mean = 69.04 ± 6.12). However, there was no statistically significant difference between learning styles and self-awareness.

Table 4: Association between learning styles and mean score for self-awareness

Learning style	n	%	Mean score \pm SD
Theorist	6	8	69.04 \pm 6.12
Activist	6	8	65.88 \pm 4.80
Pragmatist	5	7	65.50 \pm 5.11
Reflector	58	77	65.28 \pm 5.27

SD = Standard Deviation; $p=0.435$

Discussion

The importance of promoting personal and professional qualities through holistic approach of training (9) including development of self-awareness and reflective skills among medical and health care professionals are becoming more apparent.

Self-awareness is a temporary state that can be changed by teaching interventions (10). There was slight improvement of mean score of self-awareness in both control and experimental groups. However, the improvement was not statistically significant ($p>0.05$). Some students in the intervention group had attended the intervention programme such as movie review and small group discussion (SGD) sessions two months prior the second evaluation. The long interval might affect the results since self-awareness may fluctuate during the two months. Another factor would be the effectiveness of the intervention programme. The programme of 2-hour movie review and 2-hours SGD might not be able to improve self-awareness significantly.

Reflective skill is an essential part of personal and professional development while professionalism has become the obvious objective in medical and health-profession education (11-14). Reflective skills of the respondents in this study significantly improved in the intervention group following intervention. The intervention involving reflection on movie characters and how to assess and differentiate between good and poor reflective writings had most probably facilitated them to have better reflective skills. The control group also did improve slightly as they matured with their experiences as time passed. In a systemic review conducted by Satterfield et al. on emotion skills training for medical students, which looked into five studies using the randomized control trial, all showed positive outcomes (15). The use of reflective writing to facilitate reflective practice is well documented (16-21). Important aspects of reflection comprised of its use before, during and after experiences. Reflection can be developed individually but guided reflection with a supervisor or mentor is required so that underlying beliefs and assumptions can be challenged within a caring relationship (22).

Besides looking for improvement of reflective skills and self-awareness -a sub-domain of emotional intelligence following intervention, this study explored association between self-awareness with gender and learning styles. Association between-self awareness and gender revealed that, mean total MEQI score of females was 65.85 with SD \pm 5.47, which was slightly higher compared to the mean score 65.12 with SD \pm 4.48 as scored by males (Table-3). But there was no significant difference between self-awareness and gender. Austin et al. (2005) demonstrated that there was gender difference in EQ where females scored higher than male (2) which is consistent with our study findings. According to Simon Cassidy (4), there was relevance of learning style to student self-assessment skill. In this study, the theorists were found to have the highest mean score of self-awareness, although there was no statistically significance between learning styles and self-awareness (Table-4).

Medicine is a profession that requires high standards of behavior (23) for which development of self-awareness and reflective skills of medical students is crucial. Students need new knowledge and concepts in order to grow and develop. Series of effective teaching intervention using multiple approaches are required in order to be more self-reflective, self-regulative as well as self-corrective of future medical professionals.

Conclusion

Self-awareness and reflective-skill are important components of personal and professional development of medical students. This study concluded that intervention programs improved medical students' reflective skills through direct teaching interventions but not their self-awareness. Effectiveness of the intervention programme is an important factor. Continuous effort should be focused to train students in an effective way to ensure a high level of personal and professional development in their daily practices.

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