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RESEARCH ARTICLE

An evaluation of self perceived professionalism among health professions' students

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Abstract

The modern healthcare practice has made it imperative to involve patients at all levels of decision making; this shift has made professionalism as one of the core values to be inculcated in future healthcare professionals. Within the context, this study aimed to investigate 'self-perceived professionalism' among future health professionals.

The study population comprised of students from four healthcare professional programmes, i.e. Medicine, Pharmacy, Dentistry, and Nursing; at one of the pioneer private medical institutions in the country. The authors carried out a cross sectional study using a self-administered validated Professionalism Assessment tool, to assess thirteen attributes of professionalism on a five-point Likert scale ranging from 1 (not important at all) to 5 (absolutely essential). Both descriptive and inferential statistics were used to analyse the data, using the SPSS version 22 with a p-value ≤ 0.05 as the level of significance.

A total of 856 students from a sample size of 1,050 accepted (81.5%) and successfully completed the questionnaire. Among these, 278 (32.4%) medical, 171 (20.0%) dental, 183 (21.4%) nursing, and 224 (26.2%) were pharmacy students. Based on the total professionalism scores, nursing students were ranked highest, showing highest level of perceived professionalism (mean: 221.9, SD: 21.9). Among various professionalism attributes, confidentiality, competence, communication, and shared decision making were ranked most important attributes to be taught in the students' curriculum.

Based on the findings, there were differences and gaps highlighted between various health professions' students with regards to some essential attributes. This suggests that there is a need to address issues related to developing professionalism during students' training, and exposure to real life experiential learning could facilitate this process.

Keywords: *Health Professions Education, Professionalism, Understanding, Perceptions*

Introduction

Professionalism is an imperceptible concept (Mueller, 2009), whereby professional attitudes and behaviours are known to represent the level of professionalism presented among healthcare professionals (HCPs) (Morrow *et al*., 2011). The modern healthcare practice has made it imperative to involve patient at all levels of decision making and this shift has made professionalism one of the core values to be inculcated in future HCPs. The abilities to make good decisions in clinical and research environments, engagement in sound interpersonal communications, and sensitivity to individual and cultural differences are essential elements of a HCP's ethical and professional conduct (Bridges *et al*., 2011).

The primary rationale for professionalism and collaboration among HCPs is to promote patient safety (Ballard, 2003). In addition, due to the increasing emphasis on patient-centred care nowadays, all health professionals are required to have professional attributes such as empathy to understand the perspective of the

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patient and have excellence in healthcare provider-patient relationship (Williams *et al*., 2014). Those who maintain a high level of integrity and professionalism could impact better health outcomes with faster recovery from disease, stress and anxiety levels (Williams *et al*., 2014). Furthermore, the public perceptions towards today's healthcare system are influenced by the level of professionalism shown by the HCPs (Swart, 1993). Thus unlike other professions, healthcare professionalism places greater emphasis on the welfare of an individual patient, prioritising the interests of the patient above those of the HCPs (Francis, 2004).

While the value of professionalism has been outlined in the above paragraphs, the scientific evidence pertaining to modern healthcare practices highlights that technicism and economic interests have often taken priority in healthcare decisions, at the cost of the real needs of the individuals, families and communities (Glenn, 2012). Therefore, the connection between 'safety' and 'professionalism' is important to be seen in the greater interest of patient and public safety in healthcare, which potentially means strengthening the 'culture of professionalism' in healthcare education.

Professionalism is regarded as an essential attribute in healthcare education around the world, which is reflected in the attitudes, behaviours, character and standards of practice and familiarity with the codes of ethics and standards established by professional healthcare bodies (Lie, 2009). Although as a subject, it is widely taught in various ways across all healthcare professions' education curricula, the best practices for teaching this are still debatable. Nevertheless, it is essential and fundamental to know health professions students' understanding towards the subject prior to devising any interventions.

Professionalism is quite complex and subjective when it comes to assessment (Sawdon *et al*., 2017). Similar to other fields, in a healthcare context there are differences on how best it should be measured and in what ways an attribute reflects professionalism. Therefore, assessments should be relevant to the level of education and the training context (Mueller, 2015). As the topic is of concern and interest among researchers around the world, many tools have been made available recently to evaluate professionalism among healthcare students. It is impossible to have an explicit definition of professionalism-related attributes, therefore, most of the assessment tools developed and utilised in various studies are customised towards a few attributes of interest. Like the rest of the world, professionalism as a concept may be well entwined among health professions' education in Malaysia. However given the importance in both local and global context, it is imperative to evaluate future health professionals' perspective on the subject. Therefore, the objectives of this study was to evaluate self-perceived professionalism among various health professions' students, as the authors believe not many studies have been published comparing the subject between various healthcare professions' students.

Methods

Study design and population

This cross-sectional study was carried out among first to final-year undergraduate health professions' students, enrolled in Medicine, Dentistry, Pharmacy, and Nursing programmes at the International Medical University (IMU), Kuala Lumpur, Malaysia. At IMU, two programmes namely Medicine and Dentistry are of five-year duration, whereas Nursing and Pharmacy are four-year bachelor's programmes. The study data were collected during the period of June to September 2015. This study was approved by the International Medical University Research and Ethics Committee (Project ID No: BP 1-01/12-(44)2015), and was conducted per the principles expressed in the Declaration of Helsinki.

Professionalism Assessment Tool

A validated, self-administered Professionalism Assessment tool developed by Ratanawongsa *et al.* (2006), was used in this study, with prior permission from the authors. The said questionnaire consisted of 13 items made up of healthcare professionalism attributes followed by four sub-questions to assess students' perceptions towards the relevance of each attribute towards their profession. The 13 professionalism attributes listed in the questionnaire were altruism, respect, sensitivity, accountability, confidentiality, communication and shared decision making, integrity, compassion and empathy, duty, competence, managing conflicts of interests, commitment of excellence and ongoing professional development, and self-awareness.

Each question was assessed on a five-point Likert scale ranging from 1 (not important at all) to 5 (absolutely essential). The total score for the scale ranged from 65 (lack of professionalism) to 260 (very professional). The total score for the domain ranged from 5 (lack of professionalism) to 20 (very professional).

This self-administered questionnaire was pre-tested on 30 students before the data collection process to ascertain its reliability. The internal consistency (reliability) of the questionnaire was assessed using the Cronbach's *alpha* test. The Cronbach coefficient of more than 0.9 indicates excellent internal consistency of study scales (Patel, Schwartz & Bussel, 2008). The Cronbach coefficient was calculated as 0.941. Hence, it can be concluded that the questionnaire produced results that were internally consistent.

Sampling and data collection

The calculated sample size (using a 95% confidence level and 5% margin of error) for this study was 200 students from each programme. However, in order to gain the general picture of professionalism among health professions' students, all students enrolled in the four programmes were approached to participate in this study. The researchers usually approached students under various cohorts of each programmes after their major

teaching activities, e.g. lectures. After teaching sessions, the researcher, with the help of the class representatives, introduced and explained the purpose of the study to the participants, and clarified if any doubts or information was needed. The researchers were clear about not leading the students in their answers but to explain the questions when it was necessary to clear any doubts. The students were advised that participation in this study was completely voluntary and the data collected would be kept completely anonymous and confidential. Finally, a study information sheet explaining the purpose of the study along with the informed consent were distributed prior to the data collection. A self-administered questionnaire was then distributed to those who agreed to participate, to be completed in the same sitting in the presence of researcher.

Statistical analysis

Data collected from the study were analysed using the SPSS (SPSS Inc, Chicago, IL, USA) software version 22 with p-value ≤ 0.05 as level of significance (Caprapro, 2007). The descriptive statistics such as frequency, percentages, means, and standard deviations (SD) were calculated. The *chi*-square test was used to determine the association between the independent variables (demographic characteristics) and dependent variables (responses to questions). To unveil the correlation between these variables, the Spearman's test was used. The *t*-test and ANOVA were used to determine the difference between the independent variables (type of programme, year of study, gender, age groups) and dependent variables (domains of professionalism).

Results

Socio-demographic characteristics

Out of 1,050 students who were approached to participate in the study, 856 accepted (81.5%) and successfully completed the questionnaire. Based on the data gathered, almost equal proportion of students from the four programmes participated in this study (at least 20% from each programme). The detailed demographic characteristics of participating students are summarised in Table I.

Level of professionalism

Overall, the mean total score for all participating students was 217.3 (SD: 23.9). Nursing students had the highest level of professionalism (mean: 221.9, SD: 21.9), followed by dental students (mean: 220.8, SD: 25.2) and medical students (mean: 218.5, SD: 22.8). Pharmacy students had the lowest level of professionalism (mean: 209.3, SD: 24.1) compared with students from the other three programmes. Regarding gender, female medical and nursing students had higher level of professionalism compared with male students. However, in case of dentistry and pharmacy programmes, male students had higher level of professionalism compared with female students (Table II).

The level of professionalism increased in medical, dentistry and pharmacy programmes, as students advanced through their course of study. In case of nursing students, the level of professionalism decreases as students advanced through their course of study (Table II & Figure 1).

Table I: Socio-demographic characteristics of the study participants (N = 856)

Variables	Overall n (%)	Medical n (%)	Dentistry n (%)	Nursing n (%)	Pharmacy n (%)	*p*-value
Gender						
Male	230 (26.9)	103 (12.0)	55 (6.4)	23 (2.7)	49 (5.7)	0.001
Female	626 (73.1)	175 (20.4)	116 (13.6)	160 (18.7)	175 (20.4)	
Age in years						
17-20	299 (34.9)	59 (6.9)	47 (5.5)	125 (14.6)	68 (7.9)	0.001
21-23	480 (56.1)	180 (21.0)	97 (11.3)	55 (6.4)	148 (17.3)	
24 or greater	77 (9.0)	39 (4.6)	27 (3.2)	3 (0.4)	8 (0.9)	
Ethnicity						
Malay	89 (10.4)	37 (4.3)	0 (0.0)	48 (5.6)	4 (0.5)	0.001
Chinese	582 (68.0)	179 (20.9)	158 (18.5)	45 (5.3)	200 (23.4)	
Indian	97 (11.3)	40 (4.7)	11 (1.3)	35 (4.1)	11 (1.3)	
Other	88 (10.3)	22 (2.6)	2 (0.2)	55 (6.4)	9 (1.1)	
Year of study						
Year 1	224 (26.1)	70 (8.2)	47 (5.5)	71 (8.3)	36 (4.2)	0.001
Year 2	282 (25.8)	67 (7.8)	49 (5.7)	98 (11.4)	68 (7.9)	
Year 3	158 (16.9)	51 (6.0)	25 (2.9)	14 (1.6)	68 (7.9)	
Year 4	128 (16.9)	49 (5.7)	27 (3.2)	0 (0.0)	52 (6.1)	
Year 5	64 (14.3)	41 (4.8)	23 (2.7)	0 (0.0)	0 (0.0)	

Table II: Socio-demographic characteristics & Professionalism Scores

Item		Mean	N	SD	Total Mean (SD)
Gender					
Medical	Male	216.0	103	23.3	M = 216.4 (25.8)
	Female	220.0	175	22.5	F = 217.6 (23.2)
Dentistry	Male	223.0	55	25.9	
	Female	219.7	116	24.9	
Nursing	Male	213.6	23	17.6	
	Female	223.1	160	22.3	
Pharmacy	Male	211.3	49	32.3	
	Female	208.7	175	21.3	
Age groups					
Medical	17-20	213.2	59	22.9	17-20 = 214.4 (23.0)
	21-23	219.1	180	23.5	21-23 = 218.5 (24.3)
	≥ 24	223.9	39	17.8	≥ 24 = 220.8 (24.5)
Dentistry	17-20	212.1	47	23.8	
	21-23	225.1	97	22.4	
	≥ 24	220.2	27	33.2	
Nursing	17-20	220.4	125	21.8	
	21-23	224.6	55	22.3	
	≥ 24	233.3	3	9.1	
Pharmacy	17-20	205.9	68	22.1	
	21-23	211.2	148	25.3	
	≥ 24	203.2	8	14.2	
Professional year					
Medical	Year 1	215.3	70	21.9	Year 1 = 215.8 (24.1)
	Year 2	219.8	67	22.7	Year 2 = 216.9 (25.0)
	Year 3	219.7	51	23.9	Year 3 = 217.9 (24.4)
	Year 4	223.4	49	23.4	Year 4 = 218.9 (21.6)
	Year 5	214.6	41	21.8	Year 5 = 219.1 (21.9)
Dentistry	Year 1	212.4	47	29.1	
	Year 2	214.5	49	25.6	
	Year 3	240.4	25	13.0	
	Year 4	223.1	27	18.2	
	Year 5	227.1	23	20.2	
Nursing	Year 1	221.9	71	22.1	
	Year 2	223.2	98	21.0	
	Year 3	212.8	14	25.9	
Pharmacy	Year 1	209.2	36	22.7	
	Year 2	206.8	68	28.8	
	Year 3	209.4	68	22.5	
	Year 4	212.7	52	20.3	

Note: Total score range: 65 (No professional behavior) – 260 (high professional behavior)

Professionalism domains

Out of 13 domains, nursing students had the highest scores for seven domains, dental students had highest scores for five domains, and medical students had highest score for only one domain. Whereas, pharmacy students did not dominate any of the domains (Table III). Overall, the students perceived 'Confidentiality' (of patients and other protected information) as the most essential attribute to be taught in the students' curriculum (Figure 2). This was followed by 'Competence' and 'Communication & Shared decision making' which also had high student agreement responses. Students perceived 'Managing conflicts of interest' (*i.e*. balancing ethical principles underlying relationships with patients and the business of medicine) and 'Altruism' (*i.e.* responsiveness to the needs of patients and society that supersedes self-interest) as the least important attributes of professionalism to be taught in the students' curriculum.

Medical and dental students had similar scores for 12 out of 13 domains. For the one domain that is 'Duty' (reliably meeting one's commitments and

Figure 1: Professionalism scores across the years

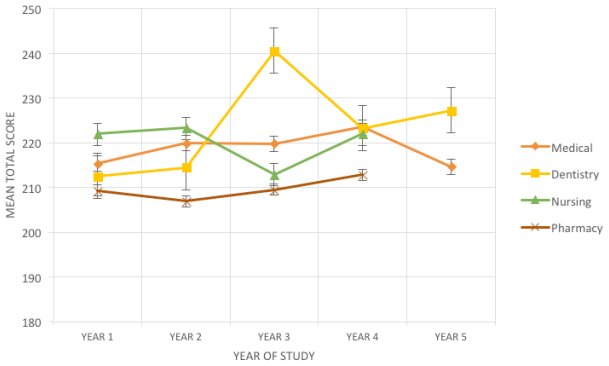

Figure 2: Professionalism domains

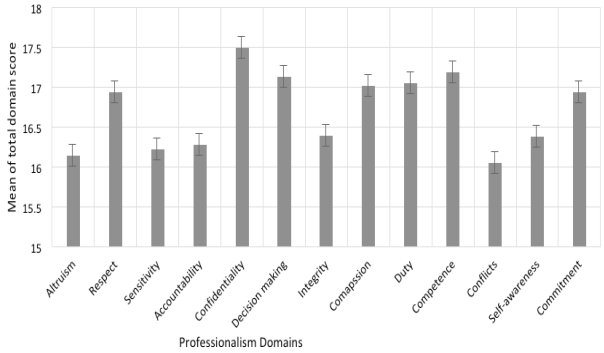

Table III: Professionalism attributes and students behaviour

Dependent Variable	Programme (a)	Programme (b)	Mean Difference (a – b)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Altruism	Medical	Pharmacy	0.471	**0.016**	0.09	0.85
	Dentistry	Pharmacy	0.716	**0.001**	0.28	1.15
	Nursing	Pharmacy	0.699	**0.001**	0.27	1.13
Respect	Medical	Pharmacy	1.030	**0.001**	0.60	1.46
	Dentistry	Pharmacy	0.926	**0.001**	0.44	1.41
	Nursing	Pharmacy	1.055	**0.001**	0.58	1.53
Sensitivity	Medical	Pharmacy	1.203	**0.001**	0.76	1.65
	Dentistry	Pharmacy	0.937	**0.001**	0.44	1.44
	Nursing	Pharmacy	1.083	**0.001**	0.59	1.57
Accountability	Dentistry	Pharmacy	0.778	**0.001**	0.31	1.25
	Nursing	Pharmacy	0.843	**0.001**	0.38	1.31
Confidentiality	Medical	Pharmacy	0.818	**0.001**	0.41	1.23
	Dentistry	Pharmacy	0.887	**0.001**	0.42	1.35
	Nursing	Pharmacy	0.820	**0.001**	0.37	1.27
Communication & Shared decision making	Dentistry	Pharmacy	0.482	**0.036**	0.03	0.93
Integrity	Medical	Pharmacy	0.699	**0.002**	0.25	1.15
	Dentistry	Pharmacy	0.848	**0.001**	0.34	1.36
	Nursing	Pharmacy	1.169	**0.001**	0.67	1.67
Compassion	Medical	Pharmacy	1.245	**0.001**	0.72	1.77
	Dentistry	Pharmacy	1.549	**0.001**	0.96	2.14
	Nursing	Pharmacy	1.187	**0.001**	0.61	1.77
Duty	Dentistry	Medical	0.466	**0.040**	0.91	0.02
	Nursing	Medical	0.627	**0.005**	1.06	0.19
	Dentistry	Pharmacy	0.726	**0.002**	0.26	1.19
	Nursing	Pharmacy	0.887	**0.001**	0.43	1.34
Competence	Medical	Pharmacy	0.761	**0.001**	0.36	1.16
	Dentistry	Pharmacy	1.075	**0.001**	0.63	1.52
	Nursing	Pharmacy	0.838	**0.001**	0.40	1.28
Managing conflicts of interest	Medical	Pharmacy	0.630	**0.004**	0.21	1.05
	Dentistry	Pharmacy	0.658	**0.007**	0.18	1.14
	Nursing	Pharmacy	0.914	**0.001**	0.45	1.38
Self-awareness	Nursing	Medical	0.975	**0.001**	01.45	0.50
	Dentistry	Pharmacy	0.941	**0.001**	0.44	1.44
	Nursing	Pharmacy	1.375	**0.001**	0.88	1.87
Commitment	Medical	Pharmacy	0.944	**0.001**	0.51	1.38
	Dentistry	Pharmacy	0.944	**0.001**	0.45	1.43
	Nursing	Pharmacy	1.237	**0.001**	0.76	1.72

Mean scale range for each domain: 5 (No professional behavior) to 20 (High professional behavior)

responsibilities), dental students had significantly higher scores compared with medical students (p=0.040), as shown in Table VI. Nursing students had significantly higher score compared with medical students for two domains ('Duty' and 'Self-awareness'). Pharmacy students scored significantly lower than students from the other three programmes for almost all domains (Table IV).

Discussion

Although the present study took place at one of the private medical institutions in Malaysia with a response rate of more than 80%, the findings could be useful in driving various key messages with regards to the professionalism development among healthcare professions' students. As the majority of the respondents were females, confirming the trends in health professions' education globally (Wetterich & da Costa Melo, 2007; Eo, Bublitz & Et, 2012; Moberly, 2018), female students also scored higher on overall professionalism among medical and nursing students. In comparison, male students from pharmacy and dentistry programmes scored higher than their counterparts. The 'feminine' attributes such as compassion and empathy, caring and communication (Janzen *et al*., 2013) could have contributed towards higher professionalism among female students, as similar results have also been reported in studies around the world (Paterson & Crawford, 1994; Martin, Yarbrough & Alfred, 2003; Lui *et al*., 2008; Kobra, Vahid & Fahimeh, 2012; Wan Chik *et al*., 2012). However, there were also studies that reported no significant differences between the genders

Table IV: Professionalism attributes and comparisons between health professions' students

Dependent variables	High Professional Behavior	Medical (n = 278)	Dentistry (n = 171)	Nursing (n = 183)	Pharmacy (n = 224)
Altruism	Proportion (%)	32.4	33.3	33.3	26.3
	p-value	0.335			
Respect	Proportion (%)	41.4	49.1	43.2	33.0
	p-value	0.012			
Sensitivity	Proportion (%)	42.1	42.7	49.2	30.8
	p-value	0.002			
Accountability	Proportion (%)	42.1	46.2	48.1	33.9
	p-value	0.018			
Confidentiality	Proportion (%)	51.4	56.7	59.0	41.5
	p-value	0.002			
Communication & Shared Decision Making	Proportion (%)	41.7	55.0	45.9	37.9
	p-value	0.006			
Integrity	Proportion (%)	42.8	43.9	39.7	27.2
	p-value	0.001			
Compassion & Empathy	Proportion (%)	39.9	51.5	48.1	30.3
	p-value	0.001			
Duty	Proportion (%)	47.8	56.7	52.5	36.2
	p-value	0.001			
Competence	Proportion (%)	43.9	47.9	45.9	31.7
	p-value	0.003			
Managing conflicts of interest	Proportion (%)	39.2	45.6	42.1	29.9
	p-value	0.009			
Self-awareness	Proportion (%)	36.7	49.7	48.6	33.9
	p-value	0.001			
Commitment to Excellence & Ongoing Professional Development	Proportion (%)	44.6	52.6	50.8	39.3
	p-value	0.029			

High professional behaviour = options 4 (Very Important) + 5 (Absolutely Essential). *Chi*-Sq test was applied to obtain *p*-value

and levels of professionalism among healthcare students (Eddy *et al*., 1994; Lin *et al*., 2010). The contrast in these findings may be due to the variation in the methodology and targeted population of each study, as well as highlighting the fact that the subject may have variability in concept among various societies.

Overall, high agreement responses towards professionalism attributes confirms that future practitioners view this as an important factor in professional practice; as it can establish development of a competent HCP that maintains effective patient-practitioner relationships, is responsible and respects patients' autonomy, accountability, trust and discretion (Zijlstra-Shaw, Roberts, & Robinson, 2013; General Medical Council, 2016). When equating between various groups of students, nursing found to be the highest, while pharmacy as the lowest; interestingly, the later did not dominate in any of the professional domains. This could be attributed to the lack of real life experiential learning, the continuously evolving nature of the pharmacy profession and the fact that many courses in pharmacy programmes are taught by people with no HCP background (Noble *et al*., 2014; 2014b). Thus role modelling is essential in developing the necessary awareness of appropriate action in different contexts (Morrow *et al*., 2011).

As professional development is a longitudinal process, these study findings across the year of education training remained consistent with the earlier studies (Nath, Schmidt & Gunel, 2006; Poirier & Gupchup, 2010; Wilson, Prescott & Becket, 2012). Studies have shown a decline in professionalism with the increase of patient contact starting the third-year of dental training (Sherman & Cramer, 2005; Chen *et al*., 2007; Boyle *et al*., 2010; Babar *et al.*, 2013). However, the present study found some contrast results, whereby, third and fifth-year dental students had higher scores compared to other study years in the dental programme. This could also be accountable for differences in curriculum and experiential learning (Boyle *et al*., 2010; Morrow *et al*., 2011).

While considering individual attributes of professionalism, study findings provided some valuable data. Among all the attributes, 'Confidentiality' and 'Respect' were ranked highest by students, valuing them as extremely important for professional practice as it can ensure uplifting patient's trust to seek treatment (Ginsburg *et al*., 1995; Jenkins, Merz & Sankar, 2005), as well as successful health outcomes (Braunack-mayer & Mulligan, 2003; Jenkins *et al*., 2005). Subsequently, 'Competence' was ranked second as it is fundamental for any professional training to ensure basic skills and medical knowledge of the profession, enabling HCPs to be able to make decisions with the best scientific evidence (Echeverri, Brookover & Kennedy, 2014; Hägg-Martinell *et al*., 2014; Kavas *et al*., 2015).

Interestingly for 'Commitment to Excellence and Ongoing Professional Development', significant differences with respect to genders were noted, whereby female students were more in agreement than their male counterparts. In the case of nursing, this could plausibly be due to the female-dominated nature of the profession, prevalent stereotypes and gender bias inherent in nursing education, (McLaughlin, Muldoon & Moutray, 2010). Similarly, studies have shown more willingness among female pharmacists to invest more time in continuous professional development (Tsoi, Boer & Koster, 2014), and were found to be more motivated by rewards (Driesen, Simoens & Laekeman, 2008). Similar trends were also seen in valuing 'Communication and Shared Decision Making' between the nursing and pharmacy students, as female professionals may exhibits better communication skills (WHO, 2009; Abdulridha, 2012; Shafakhah *et al*., 2015). Student groups valued 'Confidentiality' as it reflects an imperative for professional excellence for all HCPs to maintain patients' confidentiality (Matlakala & Mokoena, 2011).

Importantly, the majority of the students shown agreement towards the importance of content delivery on professionalism and the need towards its incorporation in the healthcare curriculum. However, interestingly first and last year medical students' perception on the importance and degree of professionalism attributes been taught in the curriculum, obtained the lowest agreement. The finding is in accordance to another study whereby pre-clerkship medical students exhibited positive attitudes towards professionalism but lacked knowledge and experience of how these attitudes might function in practice (Kavas *et al*., 2015). However, in contrast senior students knew more about attributes of professionalism, therefore should have had the highest scores due to their experience of clinical interactions with patients and co-workers during their practical and attachment period (Byszewski *et al*., 2012).

To summarise, the present study could provide a comparative analysis between various health professions' students, while highlighting strengths and weaknesses among individual groups. It was also collectively able to provide an understanding on how professionalism is perceived and viewed by health professions' students. Among a few key messages to be drawn from these findings is that 'professionalism' as a concept must be introduced at the very beginning of professional programmes and must be continuously assessed and evaluated. While it is difficult to teach professionalism as a subject in conventional ways, early exposure to experiential learning, role modelling and use of problem based scenarios involving professionalism dilemmas would be more useful (Du Preez, Pickworth & Van Rooyen, 2007; Cruess *et al*., 2014; Al-Eraky, 2015). The concepts of professionalism are paramount in any professional programme; however, the contents are usually implicit and delivered as 'hidden curriculum', therefore efforts must be made to improve students' exposure and training on the subject, in order to ensure ethical, professional and responsible health professionals for the societies.

Study limitations

The present study involved healthcare students from a single university hence it would be difficult to extrapolate the findings to a wider and more diverse healthcare students' population in the country. Furthermore, the data obtained from this study were only based on students' own perceptions and observations which may not be the actual reflection of their professionalism behaviour.

Conclusion

Professionalism development among healthcare students progressed through time and could be influenced by factors such as gender, ethnicity, cultural backgrounds and educational experiences. In the healthcare education and practice, professional conduct is extremely important, thus effective incorporation of professionalism attributes into educational training with continuous assessment and feedbacks could facilitate development of professional identity among healthcare students. Healthcare educators have greater responsibilities towards timely educational intervention to ensure the provision of ethical and professional future healthcare practitioners.

Future recommendations

Larger scale studies should be carried out to better understand the issues involved. Studies are also needed to evaluate the impact of mentors, roles modelling and educational experiences in the development of professionalism among health professions' students.

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