RESEARCH ARTICLE

Perceived Emotional Intelligence and Its Association with the Demographic Characteristics among Pharmacy Students: A Cross-Sectional Study

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Abstract

Objectives: Emotional intelligence helps to fulfill the competencies required by pharmacy students for personal and professional growth. There is a scarcity of Malaysian literature on this subject, particularly involving pharmacy students. The objectives of this study were to measure emotional intelligence of pharmacy students and to determine its association with the demographic characteristics of the participants. **Methods:** Data were taken from a survey completed by undergraduate pharmacy students using a prospective, cross-sectional design. Survey items were adopted from a self-administered questionnaire designed by National Health Services London Leadership Academy. The questionnaire measured 5 competencies of emotional intelligence including self-awareness, managing emotions, managing oneself, empathy, and social skill. **Results:** Of 450 participants, 420 responded to the survey giving a response rate of 93.3%. The overall mean score of the participants for all the emotional intelligence competencies was 30. Specifically, participants scored highest in managing emotions (ME) with the total score of 31.5 while the lowest score of 27 was recorded for social skill. The median scores of participants for individual questions ranged from 2.5 to 4 on a 5-point Likert scale. Female participants had higher self-awareness scores than their male counterparts ($p < 0.05$). The final year students had a higher median score in all the competencies of emotional intelligence than their respective sub-groups ($p < 0.05$). **Conclusion:** The findings indicate that emotional intelligence among pharmacy students was average. Participants scored highest in managing emotions and lowest in social skills. This study provided preliminary data for future research to form a basis to include emotional intelligence in pharmacy curricula.

Key words: Emotional intelligence, pharmacy, students, curricula, Malaysia

INTRODUCTION

In recent times, the pharmacy profession has moved inexorably closer to a patient-centred care. The role of pharmacists has expanded in terms of services fuelled by quality initiatives, and a commitment to improved cost-effectiveness and health outcomes. Literature suggests that developing pharmacy students' emotional intelligence may increase their chances of becoming better managers of their patients' drug therapy, as well as of pharmacy personnel.[1]

Emotional intelligence is defined as "the capacity of recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions both in us and in our relationships".[2] Yusoff *et al* described emotional intelligence as the ability to perceive, express, understand, motivate, control, and regulate emotion.[3] Emotional intelligence helps to fulfill the competencies require by pharmacy students for personal and professional growth. Emotionally intelligent people can easily face the challenge of environmental change without any detrimental effect on their daily life.

It is essential for the pharmacy students to develop emotional intelligence as to learn on how to manage one's behavior in the pharmacy profession which is full of demands. With the expansion in the pharmacy profession, pharmacists are being asked to practice more efficiently in limited resource settings, while maintaining the highest level of patient safety. Moreover, a range of evidence has consistently supported the positive relationship between emotional intelligence and pharmacy leadership.[4] More importantly, as the concept of inter-disciplinary team work is evolving in the health care, the idea of developing emotional intelligence among pharmacy professionals is of particular interest.

Many instruments to measure emotional intelligence have been reported in the literature in recent times.[5] The key differences among these questionnaires are the set of competencies of emotional intelligence that these instrument measure and the total number of items in the questionnaire. For example, the EQ-i 2.0® (Multi-Health Systems, Inc., 2011) is 133 item questionnaire that measures emotional intelligence based on the scores of self-expression, self-perception, decision making, interpersonal, and stress management. Similarly, EIQ16, a 136-itme questionnaire, measures four branches and sixteen competencies of emotional intelligence. The Matrix Emotional Intelligence Test (MEIT) uses 40 questions, based on Goleman's four quadrants Emotional Intelligence Competency Model, to measure emotional intelligence (Goleman). However, after a thorough discussion, authors decided to use a 50-item emotional intelligence questionnaire designed by the National Health Services (NHS) London Leadership Academy in view of the simplicity and the availability of the questionnaire.

There are several studies conducted on pharmacy students to measure different competencies of emotional intelligence.[6-8] However, a single study was retrieved during the literature review conducted among Malaysian pharmacy students[9] The aim of this research was to enrich the relevant literature from Malaysian perspective and to highlight the need to develop relevant courses nurturing the emotional intelligence of pharmacy students to meet the challenges of rapidly evolving pharmacy profession. The objectives of this research were to measure emotional intelligence among pharmacy students and to determine its association with the demographic characteristics of the participants.

METHODS

The study employed a prospective, cross-sectional survey design to measure the emotional intelligence among pharmacy students. The sampling frame included all pharmacy students enrolled full-time in the bachelor of pharmacy degree program at the University Sains Malaysia, a public sector university, in Malaysia. The list of the enrolled students was obtained from the respective lecturer of each corresponding year. The university offers a 4-years bachelor of pharmacy program with an approximately 120 students in each academic year. The study was conducted for a period of 1 month in October 2015.

A self-administered questionnaire, designed by National Health Services (NHS) London Leadership Academy, was used to measure the emotional intelligence in this study. The questionnaire was distributed to the students during the academic semester. One class representative from each professional year was invited to participate in data collection from their respective batches. These coordinators were informed about the aims and the methodology employed in this study. The coordinators approached all the enrolled students during the study period and briefed them about the nature and the purpose of the study before inviting them to complete the self-administered questionnaire. These coordinators also served as the source of information for the students to clarify any doubts about the questionnaire.

The NHS Leadership Academy emotional intelligence questionnaire was formatted as a paper based survey. The questionnaire was designed by the academy to examine the various competencies of emotional intelligence. The questionnaire was reviewed by the concerned pharmacy

lecturers at the University Sains Malaysia. The academy questionnaire consisted of 50 items measuring different competencies of emotional intelligence including self-awareness, managing emotions, managing oneself, empathy, and social skill. Participants' responses were rated using a 5-point Likert scale based on participants' reflection towards the item. The demographic components of the participants were added in the questionnaire to determine their gender, year of study, ethnicity, and the mode of entry into the pharmacy program.

The statistical analysis was carried out by using Statistical Package for Social Sciences (SPSS) software version 20.0. Descriptive analysis was used to express the results in frequency and percentages. In view of the non-normality of the data, Mann-Whitney U test and Kruskal-Wallis H tests were applied to determine the differences in the median scores of the participants. A p-value of less than 0.05 was considered as statistically significant.

The ethical approval for conducting this study was given by the Institutional Review Board of Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, University Sains Malaysia. An explanatory statement was provided to the students along with the questionnaire to inform them about the objectives and the nature of this study. Consent form was signed by the participants before completing the survey. The data gathered from the participants were kept highly confidential and anonymous.

RESULTS

A total of 450 pharmacy students were approached, of which, 420 responded to the survey giving a response rate of 93.3%. Of 420 participants, 80 (19%) were males and 340 (81%) were females. The number of participant from each professional year was relatively similar ranging from 97 (23.1%) in the fourth year to 115 (27.4%) in the third year. Majority of participants were Malays (n=221, 52.6%) followed by Chinese (n=148, 35.2%) and Indian (n=33, 7.9%). A large proportion of students entered into pharmacy undergraduate program after matriculation (n=352, 83.8%) while 47 (11.2%) students gained Malaysian higher school certificate before entering into pharmacy program at the studied university (Table 1).

Median scores of participants' responses to different components of emotional intelligence are presented in Table 2. The overall mean score of the participants for all the emotional intelligence competencies was 30. As can be seen from the Table, none of the emotional

intelligence competency was the strength of participants. Among different competencies of emotional intelligence, participants scored highest in managing emotions (ME) with the total score of 31.5 while the lowest score of 27 was recorded for social skill. For self-awareness and empathy, participants scored equal marks (score=31) while for motivating oneself, participants score 29 marks. The median scores of participants for individual questions ranged from 2.5 to 4 on a 5-point Likert scale.

Association of participants' median scores with their demographic characteristics is presented in Table 3. Female participants had higher self-awareness scores than their male counterparts (Median: 3.5 vs 3, p<0.05). Similarly, female participants also had a higher median score for empathy than males (Median: 3.5 vs 3, p<0.05). The final year students had a higher median score (range: 3.5 – 4) in all the competencies of emotional intelligence than their respective sub-groups (p<0.05). It was observed that the Malays scored higher for competencies like self-awareness, empathy, and social skill, however, the difference with the other races was not significant. Students who completed their A-levels before entering to the pharmacy program had higher scores for self-awareness (median score=3.5) and motivating oneself (median score = 3.5) than the students who enter the program through different qualifications (p<0.5). For managing emotions, empathy, and social skill, no significant difference was found in the median score of

Table 1: Demographic characteristic of the participants.		
Variable	Frequency	Percentage (%)
Gender		
Male	80	19
Female	340	81
Year of study		
1	110	26.2
2	98	23.3
3	115	27.4
4	97	23.1
Ethnicity		
Malay	221	52.6
Chinese	148	35.2
Indian	33	7.9
Others	18	4.3
Mode of Entry		
Matriculation	352	83.8
Higher school	47	11.2
A-Level	7	1.7
Others	14	3.3

Table 3: Association of participants' median scores with their demographic characteristic

Variable	SA (Median)	Rank	ME (Median)	Rank	MO (Median)	Rank	Empathy (Median)	Rank	SS (Median)	Rank
Gender*										
Male	3	190.25	3	213.50	3	192.50	3	194.88	3	199.38
Female	3.5	215.26†	3	209.79	3	204.74	3.5	214.18†	3.5	213.12
Year of study*										
1	3	199.15	3	192.27	2.5	183.5	2.5	192.35	3	206.5
2	3	209.28	3	198.75	3	207.65	3	216.85	3	198.32
3	3.5	213.87	3	208.54	3	195	3	202.48	3	198.83
4	3.5	221.37†	4	244.65†	4	255.58†	3.5	232.60†	3.5	238.67†
Ethnic*										
Malay	3	215.6	3	212.79	3	206.09	3	214.84	3	212.69
Chinese	3	202.88	3	200.73	3	215.77	3	203.18	3	206.26
Indian	3	201.55	3.5	221.45	3	210.95	3	199.09	3	194.5
Others	3	217	3	212.67	3	200.5	3	208.33	3	209.05
Mode of Entry*										
Matriculation	3	209.7	3	212.31	3	211.35	3	210.03	3	210.95
STPM	3	209.13	3	194.51	3	201.88	3	205.32	3	214.29
A-Level	3.5	227†	3	206	3.5	225.5†	3	220.21	3	194.50
Others	3	217.6	3	221	3	210.5	3	232.56	3	198.49

* Mann Whitney Test ** Kruskal Wallis Test † Significant difference was observed within the respective sub-group, $p < 0.05$

Note: SA = Self-awareness, ME=Managing emotions, ME=Motivating oneself, SS=Social skil

Table 2: Median scores of participants' responses to different components of emotional intelligence.

SA	Median Score	ME	Median Score	MO	Median Score	Empathy	Median Score	SS	Median Score
Q 1	3	Q 2	3	Q 3	3.5	Q 4	3	Q 5	2.5
Q 6	3.5	Q 7	3	Q 8	3	Q 9	3	Q 10	2.5
Q 11	3	Q 12	3.5	Q 13	2.5	Q 14	3	Q 15	3
Q 16	3	Q 17	3	Q 18	3	Q 19	3	Q 20	3
Q 21	3	Q 22	3.5	Q 23	2.5	Q 24	3.5	Q 25	2.5
Q 26	2.5	Q 27	3	Q 28	3	Q 29	3.5	Q 30	3

Q 31	3	Q 32	3.5	Q 33	3	Q 34	3	Q 35	2.5
Q 36	3.5	Q 37	3	Q 38	3	Q 39	3	Q 40	3
Q 41	3	Q 42	3	Q 43	2.5	Q 44	3	Q 45	2.5
Q 46	3.5	Q 47	3	Q 48	3	Q 49	3	Q 50	2.5
Total	31	Total	31.5	Total	29	Total	31	Total	27

Note: SA = Self-awareness, ME=Managing emotions, ME=Motivating oneself, SS=Social skill; Total Score interpretation: 35-50 = strength; 18-34 = needs attention; 10-17 = development priority

participants entering through different qualifications.

DISCUSSION

The emotional intelligence is an extremely important element in pharmacy education as it has an influence on establishing the future relationship with patients and other health professionals.[10] In this study, we conducted a survey to measure the emotional intelligence among pharmacy students and to determine its association with the demographic information. This study revealed several interesting findings of emotional intelligence among pharmacy students in Malaysia. To the best of our knowledge, this is the first study to report on the use of NHS Leadership Academy questionnaire in measuring emotional intelligence among undergraduate pharmacy students in Malaysia. The mean emotional intelligence score for the entire sample is average. This may be a serious concern given that pharmacy profession requires professionals with well-developed emotional intelligence. Overall, participants scored higher on questions relating to managing emotions. Management of emotions in social and academic context is essential in a variety of interpersonal and career-related domains. It is important for the health professionals to develop skills relating to managing emotions to cope with stressful situations in clinical settings. Though the participants in this study scored higher in this competency, there is still a need to give attention to the weaker areas of this domain. One way to achieve this goal is to train pharmacy students to be aware of how the perception of patients' emotions influences their practice and their communication with the patient as it creates a huge impact on building alliances.[11] Goleman defined social skills as an ability to move individuals in a specified direction whether it is about patient adherence or an agreement on a new hospital service.[2] Our findings show that pharmacy students had the lowest score for social skill competency. It is a common observation that pharmacy students often focus solely on clinical and therapeutic knowledge to meet the requirements of pharmacy curriculum while ignoring skills that effectively contribute to their development as a competent pharmacist.[12] This finding is in line with previous Malaysian study where participants scored lowest for social skill domain.[13] Pharmacy courses should be designed in a way to incorporate a set of skills including interpersonal communication, public speaking, and empowerment in communication into the assessment methods of the courses run in the faculty. Evidence suggesting the increase in emotional intelligence due to relevant courses is presented in reports elsewhere.[1-14] Nurturing of emotional intelligence via mindful exercises, professional mentoring, and role modeling during academic training of pharmacy students may be useful in enhancing the competencies of pharmacy students.[15]

The findings suggest that there was a significant association between the year of study and the emotional intelligence. The results show that final year students had relative higher emotional intelligence than their respective groups. This result could be viewed from two perspectives. First, the final year students have studied more courses including social and administrative pharmacy courses which may have helped them in gaining more knowledge about managing emotions while dealing with the patients and other health professionals. Second, these students are also exposed to clinical settings as a part of final-year hospital rotations which gives the chance to apply their knowledge gained through social courses. Therefore, it is suggested that introductory social pharmacy courses should be introduced in early academic years incorporating conceptual learning and behavioural practice.

It was also noticed that female students had higher scores related to self-awareness and empathy than male students. Our finding is supported by previous studies in which female participants were reported to have higher emotional intelligence than males.[16,17] Generally, females are believed to have higher emotional intelligence due to social or biological factors. Emotions are processed differently in the cerebellum of males and females as a larger area of the brain is involved in processing emotions in the latter ones. Thus, it is essential to develop emotional intelligence among males during the academic training by paying special attention towards and encourage them to actively participate in skill training module and group activities designed to enhance emotional intelligence of pharmacy students.

The results of this study must be interpreted with caution as it is based on a sample of one pharmacy faculty. It would be valuable to conduct a nation-wide study to validate the findings of this study. Since we use self-reporting measures, we cannot ignore the possibility of social desirability bias. The use of cross-sectional design was a limitation in itself as it may only assess relationship based on one point in time and may not account for the dynamics of relationship over time. Given the scarcity of literature in describing and measuring emotional intelligence among pharmacy professionals, there are numerous opportunities for further studies. Future research may target longitudinal studies to see the changes in emotional intelligence as student progress. Moreover, researchers could design and assess a course specifically to enhance emotional intelligence of students to incorporate into Malaysian pharmacy curriculum.

CONCLUSION

This study provides a valuable insight into emotional intelligence and its association with the demographic information of pharmacy students. The overall emotional intelligence mean score for the entire sample was average. Participants scored highest in managing emotions and lowest in social skills. Female participants had higher self-awareness scores than males. The final year students had higher scores in all the competencies of emotional students than the junior pharmacy students. More studies are warranted to validate the findings of this study to form a basis to plan and implement courses required to foster emotional intelligence of pharmacy students.

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