The Attitudes of Medical, Nursing and Pharmacy Students to Inter-Professional Learning

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Abstract

Inter-professional learning (IPL) has the potential to promote collaboration among healthcare professionals in providing quality healthcare. For the IPL to have a positive influence on inter-professional collaboration the healthcare students must be willing to learn together. Attitudinal factors have been identified as the major factor hindering the implementation of IPL. In Malaysia, little is known about attitudes of healthcare students towards IPL. The aim of the study was to examine the attitudes of undergraduate medical, pharmacy and nursing students towards IPL. The medical, pharmacy, and nursing students at the University of Malaya, Malaysia self-administered the Readiness for Inter-Professional Learning Scale (RIPLS) questionnaire. Out of 850 undergraduate students approached, 836 completed the questionnaire giving a response rate of 98%. The internal reliability of RIPLS was acceptable (α = 0.84). Between groups analysis with ANOVA showed there was a statistically significant difference between the healthcare groups on the subscale “teamwork and collaboration” (F2, 833 = 16.35, P< 0.001). Post-hoc comparisons with Tukey test indicated medical students (M=36.21, SD = 5.50) had significantly the least score on this subscale compared to pharmacy (M= 38.21, SD= 4.31) and nursing students (M=38.47, SD= 4.73). Significantly higher proportion of medical students agreed that they have to acquire much more knowledge and skills than other healthcare students. Overall, the findings showed that pharmacy and nursing students were significantly more willing to be engaged in IPL compared to medical students. The results also suggest that a favourable attitude towards IPL exists among the medical, nursing and pharmacy students and this provides support for the introduction of IPL in their undergraduate curriculum.

Introduction

In a changing healthcare system the ways services are provided require matching changes in the training of healthcare professionals. It has been shown that inter-professional learning (IPL) during the undergraduate courses are related to changes in students’ knowledge and awareness of the roles and responsibilities of other professions, understanding of teamwork and contributions of the different professions [1-5]. Internationally, educations for
healthcare professionals are moving towards the implementation of inter-professional education (IPE) for both undergraduate and postgraduate curriculum [6]. Hammick [7] defines the term IPE as “learning together to promote collaborative practice.” It makes sense for the different healthcare professionals to learn together to promote collaborative practice because their knowledge, skills and professional attitudes are mostly complementary and overlapping [8] and that almost everyone who seeks medical care may interact with more than one health professional [9]. The ultimate goal of IPL is therefore to improve collaboration among the healthcare team to provide quality of care.

For the IPL to have a positive influence on inter-professional collaboration the healthcare students must be willing to learn together. Attitudinal factors have been identified as the major factor hindering the effective implementation of IPL [10]. Other obstacles identified include difficulties in timetabling, the different length of professional programme, distinct assessment methods of the various disciplines, lack of commitment and support from administrators as well as planning and resource difficulties [11-13].

Several instruments are specifically developed to evaluate attitudes towards IPL, which include Interdisciplinary Education Perception Scale (IEPS) [14], the Inter-professional Attitudes Questionnaire [15], and the Readiness for Inter-professional Learning Scale (RIPLS) [10]. The two most widely used instruments are RIPLS [11, 16-18] and IEPS [19-20]. The RIPLS was developed to assess the readiness of healthcare students for IPL whereas IEPS is an outcome instrument, which is useful for measuring the changes in attitudes resulting from IPL. Thus, RIPLS is more useful for assessing attitudes before IPL activities take place. The original RIPLS consists of 19-items with three subscales labelled by the original developer as teamwork and collaboration, professional identity and roles and responsibilities. RIPLS has been tested and found to have acceptable face content and construct validity as well as internal consistency [10-11, 18, 21]. It has been mostly used to measure students’ attitude towards IPL in undergraduate context [11, 18].

The attitudes of healthcare students to IPL have been studies in countries such as New Zealand, Ireland, and United Kingdom [11, 13, 18, 22-23]. However, little is known about the attitudes of healthcare students towards IPL in Malaysia. The aim of this study was to evaluate the medical, nursing and pharmacy students’ attitudes toward IPL.

Methods

Setting

The ethic committee of the University of Malaya Medical Centre, Malaysia approved the study. The survey was conducted in the Faculty of Medicine, University Malaya Kuala Lumpur which offers several undergraduate programmes including medical, nursing and pharmacy. The questionnaires (in English) were distributed to the medical, nursing and pharmacy students before their lectures. The questionnaires were collected at the end of lectures. Where this was not possible, a member of the research team collected the questionnaire at some other time as agreed. Student that completed and returned the questionnaire was considered as providing consent to participate. Students who did not complete or return the questionnaire were considered as non-responders.

Following pilot testing, the definition of shared learning was included in the first page of the questionnaire to ensure all respondents understood similar concept. Shared learning in the context of the study was defined as “a learning arising from interactions between students of two or more healthcare groups to promote collaborative practice.”

Instrument

The study instrument consisted of four sections. The first section collected demographic information such as sex, race, students’ group (medical, nursing or pharmacy), current year of study, age, and previous experience in the healthcare setting. The next three sections were the three subscales of RIPLS labelled by the original researcher [10]: teamwork and collaboration (9 items), professional identity (7 items) and roles and responsibilities (3 items). The 19 items require a Likert scale response with “5=strongly agree” and “1= strongly disagree.”

Reliability

The internal consistency of RIPLS was 0.86. The Cronbach alpha value for the subscale of roles and responsibilities was 0.90, professional identity was 0.79 while the value for the subscale roles and responsibility was 0.18. As suggested by McFadyen [24], the weak internal consistency for the last subscale implies that the items may
not be appropriate in examining undergraduate students as the roles and responsibilities may still not be very clear at the undergraduate levels.

Data analysis
Data were managed and analysed with the use of the Statistical Package for the Social Sciences (SPSS) for Windows (version 14.0). Likert scale data for the two subscales namely teamwork and collaboration and professional identity was treated as interval data since Carifio and Perla [25] show that Likert scales (i.e. a collection of Likert items) produce interval data. Summed scores were generated separately for two subscales (teamwork and collaboration; professional identity). To provide consistency so that high scores reflect favourable attitudes, coding was reversed for negatively worded items. Since the subscale of roles and responsibilities (3 statements) has low internal consistency; the responses on each of the three items was analysed separately with Kruskal Wallis H-test. One-way between groups analysis of variance (ANOVA) was used to test for the difference between the groups with respects to scores of the two subscales. When the overall difference was statistically significant, post-hoc comparisons with Tukey test was used. The data were also re-analysed with non-parameteric tests to confirm there was no difference in the results. All the results were considered significant at p<0.05.

Results
Sample characteristics and response rates
A total of 850 undergraduate students were enrolled in the medical, nursing and pharmacy programmes at the University of Malaya in Academic session 2009/2010. Out of these, 836 students completed the questionnaire, representing an overall response rate of 98%. A response rate of 100% was achieved for both Pharmacy and nursing students. Table 1 shows the number of students within each group who completed the questionnaire and their demographic characteristics. Two third of the sample was females and about half of the sample was of Malay race. The majority of nursing students reported that they had prior exposure to health care services. Prior to their enrollment into the nursing degree programme, 95% of them have worked as nurses. The mean age for the three groups was statistically different (F2, 826=2091, P< 0.01). The nursing students (M=35.8, SD 4.2) were significantly older compared to the medical and pharmacy student.

| Characteristics                          | Medicine (n=521) | Nursing (n=78) | Pharmacy (n=237) |
|-----------------------------------------|------------------|---------------|-----------------|
| Sex                                     |                  |               |                 |
| Male                                    | 227 (44)         | 5 (6)         | 47 (20)         |
| Female                                  | 294 (56)         | 73 (94)       | 190 (80)        |
| Race                                    |                  |               |                 |
| Malay                                   | 274 (53)         | 57 (73)       | 107 (45)        |
| Chinese                                 | 204 (39)         | 4 (5)         | 119 (50)        |
| Indians                                 | 28 (5)           | 12 (15)       | 6 (3)           |
| Others                                  | 15 (3)           | 5 (6)         | 5 (2)           |
| Current Year of Study                   |                  |               |                 |
| Year 1                                  | 118 (23)         | 0 (0)         | 65 (27)         |
| Year 2                                  | 116 (22)         | 38 (49)       | 57 (24)         |
| Year 3                                  | 99 (19)          | 40 (51)       | 57 (24)         |
| Year 4                                  | 93 (18)          | 0 (0)         | 58 (25)         |
| Year 5                                  | 95 (18)          | 0 (0)         | 0 (0)           |
| Previous experience in Healthcare services |                  |               |                 |
| Yes                                     | 21 (4)           | 74 (95)       | 4 (2)           |
| No                                      | 500 (96)         | 4 (5)         | 233 (98)        |
| Mean age in years (SD)                  | 20.9 (1.6)       | 35.8 (4.2)    | 20.4 (1.3)      |
Subscale - Teamwork and Collaboration

This subscale relates to the attitudes on the need for effective team-working and positive relationship between healthcare students. Summed scores were generated for the nine statements with high scores reflecting favourable attitudes.

The majority of students from all groups agreed or strongly agreed to the nine statements in this subscale. However, there was statistically significant difference in the scores for the three groups (\(F_{2, 833} = 16.35, p < 0.001\)) (Table 2). Post-hoc comparisons indicated that medical students’ total score was significantly lower than that of nursing and pharmacy students while there was no statistically significant difference in the scores between nursing and pharmacy students.

Subscale 2- Professional Identity

This subscale contains items relating to “professional identity” and consists of seven statements, which are divided into two aspects: “positive professional identity” and “negative professional identity. Summed scores were generated for this subscale. To provide consistency so that high scores reflect strong professional identity, coding was reversed for negatively worded items.

There was statistically significant difference in the scores for the three groups (\(F_{2, 83} = 9.12, p < 0.001\)). Post-hoc comparisons indicated that pharmacy students’ total score was significantly higher than that of medical students while there was no statistically significant difference in the scores between medical and nursing students.

Table 2 shows the mean scores for the two subscales for three groups of healthcare students.

| IPL subscales                  | Medical (n=519) | Nursing (n=77) | Pharmacy (n=235) | P value |
|-------------------------------|----------------|---------------|------------------|---------|
| Teamwork and Collaboration    | 36.2(5.5)      | 38.5(4.7)     | 38.2(4.3)        | P<0.001 |
| Professional Identity         | 27.1(4.4)      | 28.0(4.3)     | 28.5(3.5)        | P<0.001 |

Subscale 3 Roles and responsibilities

Table 3 shows the responses on each of the three items of the subscale “roles and responsibilities.” A Kruskal-Wallis test revealed a statistically significant difference in responses to the first statement “the function of nurses and therapists is mainly to provide support for doctors” across the three groups \(\chi^2_{(2, 836)} = 50.6, p < 0.001\). The medical students recorded a higher median score (Median=5), than the other two groups, which recorded median value of 2.

Similarly statistically significant difference was seen across the three groups for the statement “I am not sure what my professional role will be” \(\chi^2_{(2, 836)} = 94.0, p <0.001\). A significantly higher proportion of nursing students either strongly disagreed or disagreed with the statement than medical and pharmacy students. For the item “I have to acquire much more knowledge and skills than other healthcare students” there was also significant difference across the three groups \(\chi^2_{(2, 836)} = 17.5, p <0.001\). A higher proportion of medical students agreed with the statement than the other two groups.
Table 3. Responses for items in roles and responsibilities sub-scale

| Statements                                      | Student group | Percent Rating |
|------------------------------------------------|---------------|----------------|
| The function of nurses and therapists is mainly | Medicine      | 5.0 12.7 34.6 31.5 16.2 |
| support for doctors                             | Nursing       | 46.2 10.3 15.4 7.7 20.5 |
| I am not sure what my professional role will be | Medicine      | 38.8 35.8 18.8 5.8 0.8 |
| I have to acquire much more knowledge and skills| Medicine      | 3.5 6.5 26.5 39.6 23.8 |
| other healthcare students                       | Nursing       | 20.5 10.3 25.6 17.9 25.6 |
|                                                | Pharmacy      | 3.4 8.4 42.0 36.1 10.1 |

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

Discussions

The population of 836 healthcare students constituted almost all the medical, nursing and pharmacy students enrolled at the institution for the academic year 2009/2010. The sample size was relatively large and the response rate was high. This is encouraging and should provide high level of confidence in robustness of the results. Overall our findings indicate that undergraduate medical, nursing and pharmacy students have favourable attitudes towards “teamwork and collaboration” and should therefore be opened to the notion of shared learning. However, among the three groups, medical students had significantly the least favourable attitudes towards “teamwork and collaboration” compared to nursing and pharmacy students. Our results concur with several studies in which most healthcare students have been shown to have positive perceptions to IPL at the undergraduate levels of their professional programme particularly on the subscale teamwork and collaboration [2, 17, 22]. At least two other studies [11, 26] also reported that of the healthcare students, medical students seemed to have the least favourable attitude towards a willingness to share knowledge with other healthcare groups. Students with less favourable attitudes at the start of the course are found to benefit the least from it [22]. Changing of these attitudes will be difficult but is one of the challenges that need to be overcome in order to introduce effective IPE programme in the curricula [11].

A Belfast study [18], which also used RIPLS, has shown that medical students have stronger professional identity compared to nursing students. It has been suggested that medical students experience more traditional approach to learning that is discipline-based and this seems to encourage the development of a strong professional identity. This may make it more difficult for them to share learning with other healthcare students. In contrast, our study seems to suggest that medical students do not have stronger professional identity than nursing students. This may be explained by the fact that majority of the nursing students in our study have previous experience in the healthcare setting. It is possible that based on their experiences; they already have preconceived ideas of their disciplines even at the beginning of their undergraduate training.

The internal reliability of two out of the three subscales was in excess of 0.80. A value exceeding 0.7 is reported to be adequate [27]. However, the Cronbach alpha value of 0.17 for the subscale “roles and responsibilities” was considered poor and therefore we did not sum up the scores for this subscale but instead reported the responses separately for the three items. McFadyen [24] suggests that this sub-scale may not be appropriate in evaluating new undergraduate students. Studies have shown that RIPLS can be a useful instrument to measure students’ attitudes to IPL before embarking shared learning type of educational activities [11, 17-18]. Our findings also showed it may be appropriate to use RIPLS to explore attitudes toward IPL in the University of Malaya, as the overall internal reliability of the scale was shown to be similar to that of Parsell and Bligh [10].
The medical students considered that they had more knowledge and skill to acquire than other healthcare students and almost half of them agreed that the role of nurses and therapists are mainly to provide support for doctors. This is in agreement with the findings of Horsburgh [11], which seem to suggest that medical students tend to view other healthcare students as their inferior. The perception may be a possible barrier towards effective implementation of IPE.

Our study has uneven proportion of males to female students, with two thirds being females. However, this occurrence reflects the actual distribution of males:females students in Malaysian universities. Additionally, the populations of the study came from only one institution in Malaysia and this could also influence the generalisability of the findings. Another possible limitation of the study is that other variables, for example, the personality of the individuals, which could have affected the results, have not been examined. In terms of future research, qualitative study is required to clarify our understanding of attitudes towards IPL among the different healthcare students. Since the ultimate goal of IPL is to improve collaboration and improve the quality of care, future studies should also explore the impact of IPL on quality of care.

Conclusion
Assessing the attitudes of learners is important in order to develop IPL strategies. This study provides the first baseline attitudinal data of healthcare students for three health professions in Malaysia. Our findings have shown that overall medical, nursing and pharmacy students have favourable attitudes to IPL. This is encouraging if the administrators wish to introduce and implement IPL in the undergraduate curriculum to be in line with current trend in healthcare education. It was also shown that medical students as a group had the least favourable attitudes towards IPL. This should be investigated further to describe and understand their needs and factors influencing their attitudes.

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