Original Research Article

Key elements of the Inter Professional Education (IPE): Perceptions amongst pre-registration students in the different health professions in Sri Lanka.

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ABSTRACT

Aims: Inter-professional education (IPE) is important in developing good working relationships between different health professionals. The key elements of IPE have entitled as clinical situations, skills expected in IPE and teaching / learning methods. Health professional students in Sri Lanka experience informal inter-professional learning opportunities during clinical years. The aim of this research was to explore student perceptions on these key elements of IPE.
Study design:A cross sectional study.
Place and Duration of Study: The study was conducted with the students who have had prior clinical training for a period of 1 year, from 8 health professional groups (Medical, Physiotherapy, Nursing Diploma, Nursing Degree, Medical Laboratory Science, Pharmacy, Audiology, Speech & Language Therapy) at different health educational institutions.
Methodology:A total of 686 students were invited to complete a self-administered questionnaire. The data was entered and analyzed using SPSS. The part of the data was analyzed using descriptive statistics. The response rate for the survey was 84.8%.
Results: The findings suggest that the key elements of IPE are important to improve the aims of IPE. Most health care students agree that management of an acute situation, community based care and rehabilitative care are the most important clinical situations where students can learn to work as a team, one of the main aims of inter-professional learning. Respect for each other and communication skills were identified as the most imperative skills that can be improved through interprofessional learning. Most students strongly agree that demonstration and work based tasks in wards are key teaching methods for achieving the aims of IPE.
Conclusion: This study suggests some focused approaches for IPE in Sri Lanka and students may need more clarity on the aim of IPE.

Keywords:Inter professional education, health professionals, teaching, learning, clinical situations, skills

1. INTRODUCTION

Interprofessional education, which is designed to promote teamwork among different health professions, is described as occurring when ‘‘two or more professions learn with, from and about each other to improve collaboration and the quality of care’’ [1]. The introduction of IPE into the training of healthcare professionals has become an important object for

governments and universities internationally. In this paper, the key elements identified from the students' perspective to improve collaboration and patient care are exposure to different skills expected in IPE, different teaching / learning methods and clinical situations.

Different skills expected in IPE are needed to work collaboratively in a health care team and these skills can be improved through IPE. In this paper; decision making skills, respect for each other, understanding how group work, communication skills, teaching skills, understanding professional roles and responsibilities, recognizing limitation as a professional and leadership skills were identified as different skills. The communication skills between members of different health professionals affect effective multidisciplinary teamwork [2,3]. Groups with greater cohesiveness are associated with better clinical outcomes and higher patient satisfaction [4]. Leadership skills are important for team leaders to facilitate interdisciplinary group work [3,5].

There are different teaching/ learning methods to use in interprofessional learning. In the present study; Lectures, demonstration and/ or practice of procedural skills, small group discussions (SGD), work-based tasks at ward, role plays and simulation-based learning sessions and integrated ward rounds were identified as different teaching/learning methods. IPE aims to encourage different professionals to learn together to improve collaborative practice and the health care of patients. Therefore, it has more potential for enhancing collaborative practice than a program of multi professional education (such as a joint lecture) or uni-professional education [6]. Interdisciplinary problem-based learning (PBL) [7,8] and the service/learning models are examples of two team approaches to education [9,10,11,12].

Clinical situations where different professions work as a team show the importance of Inter professional practice [13]. In this paper; Management of acute situations, Clinical decision making, performing procedures, Work in the theatre, Work in the labor room, Work in the hospital clinic, In-hospital rehabilitative care and Community-based care were identified as different clinical situation where different professionals work as a team. Nurses and other healthcare professionals can assist for advance palliative care in diverse critical care [13,14]. Morey et al. [14] described that the effectiveness of an interprofessional teamwork training program on collaborative behavior in emergency departments. Calkins et al. [15] and Wagner [16] identified the importance of working together with different health professionals in chronic disease management including Pharmacist team members [17,18,19]. The multidisciplinary teams involved in dementia care [20] including Physical therapists [21] and Occupation therapists [22] help the patients to deal with challenges faced in daily living.

Health professional students interact poorly with each other during their basic health professional education in Sri Lanka. But these different health professionals meet at the same health care setting (hospital). They have to work together to develop good working relationships between different professionals. Therefore, these students do receive informal exposure to interprofessional learning and would be aware of issues surrounding such experiences. Therefore, it would be valuable to investigate key elements of the Inter Professional Education (IPE) amongst pre-registration students in the different health professions in Sri Lanka. This information will be useful to understand the issues impacting on health professional teams and the needs and challenges for inter-professional learning.

2. METHODOLOGY

2.1 Subjects

A cross sectional study was conducted with the students who have had prior clinical training for a period of 1 year, from 8 health professional groups; Medical, Physiotherapy, Nursing

(Diploma), Nursing (Degree), Medical Laboratory Science (MLS), Pharmacy, Audiology, Speech & Language Therapy at different health educational institutions. Second year students those who have already started their clinical training were selected as they listen to patient stories and communicate with one another about their roles within the health care system. A total of six hundred and eighty-six (686) students were invited to complete the self-administered questionnaire. The different health professional students were selected to capture all health professions being trained at diploma / degree level in Sri Lanka. Medical and physiotherapy students were selected at Faculty of Medicine, University of Colombo. Nursing diploma students were selected at National Training School, Colombo. MLS, Pharmacy and Nursing degree students were selected from Faculty of Medical Sciences, University of Sri Jayewardenepura. Audiology and speech therapy students were selected from Faculty of Medicine, University of Kelaniya.

2.2 Data collection instrument

The data was collected using a self-administered questionnaire which mainly consisted of a list of clinical situations where different professions work as a team (responses were recorded as 4=essential, 3=very important, 2=somewhat important & 1=minimally important), a list of skills expected in working in a health care team and a list of teaching/ learning methods that may be used for interprofessional learning (responses were recorded as 4=Extremely, 3=to a larger extent, 2=somewhat & 1=Minimally). These key elements are derived from the aims of IPE as per competency-based education, the different teaching / learning methods based on the SPICES model (Student centered, Problem based, Integrated, Community based, Elective and Systematic model) [23] and as per the studies in IPE, the clinical situation would be based on literature on interprofessional practice and our experiences as healthcare professionals.

2.3 Statistical analysis

The data was entered in the SPSS and analyzed using descriptive statistics and analytical statistical methods. Kruskal – Wallis H test was used to compare score responses of above key elements (ordinal variables) of different independent professional groups.

3. RESULTS

3.1 Response rate

A total of six hundred and eighty-six (686) students were invited to participate in the study, of which n = 582 filled in the questionnaire, giving an overall response rate of 84.8%. Respectively 196 medical students, 225 nursing (diploma) students, 60 physiotherapy students, 60 pharmacy, 60 nursing (degree) students, 30 Medical laboratory students, 25 Audiology students and 60 speech and language therapy students were invited for the study. According to the proportions, 157 (80.1%) medical students, 180 (80%) nursing (diploma) students, 56 (93.3%) physiotherapy students, 54 (90.0%) pharmacy students, 46 (76.6%) nursing degree students, 27 (90.0%) Medical laboratory students, 18 (72%) Audiology students and 42 (70.0%) speech and language therapy students were responded. 73.02% of respondents were female while 24.91% were male.

3.2 Skills expected in working in a healthcare team

S: Skills
S1: Decision making skills
S2: Respect for each other

S3: Understanding how groups work
S4: Communication skills
S5: Teaching skills
S6: Understanding professional roles and responsibilities
S7: Recognizing limitations as a professional
S8: Leadership skills

Skills expected in working in a healthcare team are considered to see, the degree to which these skills can be improved through IPE (Table 1). All the team work skills had relatively higher mean scores while “Respect for each other”, ‘‘Understanding how groups work’’ and “Communication skills” showed the highest values while the least value was shown in ‘‘Teaching skills’’.

Medicine and MLS groups showed significant less mean values for the “decision making skills” compared with other professional groups. MLS groups showed significant less mean value for the “Leadership skills and recognizing limitations as a professional”. MLS students rated comparatively low mean values for the all the skills.

There was no statistical significant difference between professional groups for the respect for each other, understanding how groups work, communication skills, teaching skills and understanding professional roles.

Table 1. Skills expected in working in a healthcare team

	Mean ± SD									
	Medicine	**Nursing (Diploma)**	**Physiotherapy**	**Pharmacy**	**Nursing (Degree)**	**MLS**	**Audiology**	**Speech & Language Therapy**	**Total**	**p-value**
S1	2.7 ± 0.8	3.5 ± 0.7	3.4 ± 0.6	3.5 ± 0.6	3.2 ± 0.7	2.7 ± 0.9	3.2 ± 0.8	3.7 ± 0.6	3.2 ± 0.8	.04*
S2	3.4 ± 0.6	3.5 ± 0.6	3.6 ± 0.6	3.6 ± 0.6	3.6 ± 0.6	3.0 ± 0.9	3.6 ± 0.6	3.7 ± 0.4	3.5 ± 0.6	.08
S3	3.3 ± 0.5	3.4 ± 0.6	3.5 ± 0.6	3.6 ± 0.4	3.6 ± 0.5	3.1 ± 0.8	3.5 ± 0.6	3.7 ± 0.5	3.5 ± 0.6	.1
S4	3.3 ± 0.6	3.6 ± 0.9	3.5 ± 0.6	3.5 ± 0.5	3.5 ± 0.6	3.1 ± 0.7	3.5 ± 0.5	3.8 ± 0.4	3.5 ± 0.7	.09
S5	2.8 ± 0.8	3.1 ± 0.8	3.1 ± 0.7	3.0 ± 0.7	2.9 ± 0.7	2.5 ± 1.0	2.9 ± 0.8	3.3 ± 0.7	3.0 ± 0.8	.08
S6	3.2 ± 0.6	3.4 ± 0.7	3.5 ± 0.6	3.5 ± 0.6	3.3 ± 0.7	2.8 ± 0.9	3.4 ± 0.8	3.7 ± 0.4	3.4 ± 0.7	.1
S7	2.9 ± 0.7	3.2 ± 0.8	3.2 ± 0.6	3.3 ± 0.7	3.1 ± 0.7	2.5 ± 0.8	3.4 ± 0.7	3.6 ± 0.6	3.1 ± 0.8	.04*
S8	3.1 ± 0.7	3.5 ± 0.7	3.1 ± 0.8	3.0 ± 0.8	3.2 ± 0.6	2.6 ± 1.0	3.1 ± 0.7	3.4 ± 0.8	3.2 ± 0.7	.02*

Total	3.1 ± 0.7	3.4 ± 0.7	3.4 ± 0.8	3.4 ± 0.8	3.3 ± 0.6	2.8 ± 1.0	3.3 ± 0.7	3.6 ± 0.8

** significant at the 0.05 level*

3.3 Different teaching / learning methods that may be used for IPE

TL: Teaching and Learning
TL1: Lectures
TL2: Demonstration and/ or practice of procedural skills
TL3: Small Group Discussions (SGD)
TL4: Work-based tasks at ward e.g. discussing a treatment plan with a different health professional
TL5: Role plays and simulation-based learning sessions
TL6: Integrated Ward Rounds

In this study, students rated differently how effectively different teaching/ learning methods can be used for IPE (Table 2). Demonstration, SGD and Integrated ward rounds had higher mean scores while Work-based tasks at ward was the highest. “Lectures” was the lowest rated teaching / learning method. Medical students rated low values for classed based teaching learning methods (TL: 1-3 & 5) and higher values for wards based methods (TL:4 & 6).

Nursing, Physiotherapy, Speech therapy and pharmacy students rated higher values for most of the teaching methods while Audiology and MLS students rated comparatively low values for corresponding teaching methods. Physiotherapy, pharmacy, speech and language therapy, nursing diploma and degree groups showed significantly higher mean values for the ward-based teaching methods (TL:4 & 6). Other professional groups did not show any significant difference for the classed based teaching learning methods.

Students suggested several other teaching / learning methods can be used for the IPE including workshops and presentations, community based field trips, wards classes, problem based learning (PBL), ward rounds with all health professional students, group discussions and seminars in hospital settings.

Table 2. Different teaching / learning methods that may be used for IP learning

	Mean ± SD									
	Medicine	Nursing (Diploma)	Physiotherapy	Pharmacy	Nursing (Degree)	MLS	Audiology	Speech & Language Therapy	Total	p-value
TL1	2.0 ± 0.8	3.2 ± 0.8	2.6 ± 0.8	2.9 ± 0.9	2.8 ± 0.8	2.4 ± 0.7	2.6 ± 0.7	2.9 ± 0.7	2.7 ± 0.9	.09
TL2	2.8 ± 0.9	3.7 ± 0.4	3.4 ± 0.6	3.4 ± 0.7	3.5 ± 0.4	3.0 ± 0.9	3.0 ± 0.9	3.5 ± 0.6	3.3 ± 0.8	.09
TL3	2.5 ± 0.8	3.5 ± 0.6	3.2 ± 0.7	3.3 ± 0.6	3.6 ± 0.4	2.8 ± 0.9	3.0 ± 0.8	3.1 ± 0.9	3.1 ± 0.8	.1
TL4	3.2 ± 0.7	3.5 ± 0.6	3.6 ± 0.5	3.6 ± 0.5	3.7 ± 0.8	3.1 ± 0.8	3.4 ± 0.6	3.6 ± 0.5	3.4 ± 0.6	.03*
TL5	2.6 ± 0.8	2.9 ± 0.8	3.0 ± 0.8	3.1 ± 0.6	3.5 ± 0.6	2.8 ± 1.0	3.0 ± 0.6	3.1 ± 0.7	2.9 ± 0.8	.06
TL6	3.1 ± 0.8	3.3 ± 0.7	3.5 ± 0.6	3.5 ± 0.6	3.5 ± 0.6	3.0 ± 1.2	2.9 ± 0.7	3.4 ± 0.7	3.3 ± 0.8	.02*
Total	2.7 ± 0.8	3.3 ± 0.7	3.2 ± 0.7	3.3 ± 0.6	3.4 ± 0.6	2.9 ± 0.9	3.0 ± 0.7	3.3 ± 0.7		

** significant at the 0.05 level*

3.4 Clinical situations where different professions work as a team

CS: Clinical situation
CS1: Management of acute situations e.g. Cardiopulmonary resuscitation, trauma, burns, seizures, unconscious patients, poisoning
CS2: Clinical decision making e.g. long-term care planning, discharge planning
CS3: Performing procedures e.g. lumbar puncture, blood culture, taking a biopsy, ascitic tap
CS4: Work in the theatre e.g. surgery, anesthesia, post-operative care
CS5: Work in the labour room including neonatal care
CS6: Work in the hospital clinic e.g. referrals
CS7: In-hospital rehabilitative care
CS8: Community-based care e.g. immunization of children, ante-natal clinics, Rehabilitation

Clinical situations where different professions work as a team is presented in Table 3. Clinical situations (CS) 1 and 4 had higher mean scores while mean score was the lowest for CS 3 and 6. Medical, Nursing and Physiotherapy students rated higher scores for the most of the clinical situations. Audiology and speech therapy students rated higher values for above situations though they do not directly involve for those whereas MLS and Pharmacy students rated low values as they have little opportunities to engage in clinical situations.

Medicine group showed the lowest statistically significant mean value comparing with other professional groups for “clinical decision making’’ and ‘‘Work in the hospital clinic”. Medicine, Nursing and Physiotherapy groups showed higher statistically significant mean values for the “Management of acute situation and Work in the theatre”. Medicine and Nursing groups showed higher mean values for “performing procedures and Work in the labour room” which

are not significant. MLS group showed the lowest statistically significant mean value comparing with other professional groups for the Community-based care.

Students noted some clinical situations in the questionnaire that they would prefer to learn as an IPE activity. Students suggested “Management of emergency (ICU) situations”, clinical pharmacology, “management of psychiatric diseases and rehabilitation of long term management of patients (Cardiovascular accidents, management of neurological patients)” are important situations where different professions work as a team and enhance IPE activity.

Table 3. Clinical situations where different professions work as a team

	Mean ± SD									
	Medicine	**Nursing (Diploma)**	**Physiotherapy**	**Pharmacy**	**Nursing (Degree)**	**MLS**	**Audiology**	**Speech & Language Therapy**	**Total**	**p-value**
CS1	3.7 ± 0.4	3.6 ± 0.5	3.6 ±0.6	3.4 ±0.8	3.8 ± 0.5	2.7 ±1.2	3.3 ±0.6	3.3 ±0.9	3.5 ±0.7	0.03*
CS2	2.4 ± 0.8	3.2 ± 0.7	3.3 ± 0.6	3.3 ±0.6	3.4 ± 0.7	2.5 ± 0.1	3.3 ±0.6	3.3 ±0.6	3.0 ±0.8	0.04*
CS3	2.9 ± 0.8	3.3 ± 0.7	2.4 ± 0.8	2.7 ± 1.0	3.2 ± 0.6	3.19 ±0.8	2.3 ±0.9	2.3 ±0.9	2.9 ±0.8	0.06
CS4	3.4 ± 0.6	3.5 ± 0.6	3.4 ± 0.7	2.8 ± 1.0	3.6 ± 0.5	2.8 ±0.9	3.2 ±0.9	3.2 ±0.9	3.3 ±0.7	0.1
CS5	3.3 ± 0.7	3.4 ± 0.9	2.9 ± 0.7	2.7 ± 1.0	3.5 ± 0.7	2.5 ±1.1	3.1 ±0.8	3.1 ±1.0	3.2 ±0.9	0.09
CS6	2.6 ± 0.8	3.1 ± 0.8	3.0 ± 0.8	2.8 ± 0.8	3.0 ± 0.7	2.4 ±1.0	3.5 ±0.7	3.5 ±0.6	2.9 ±0.8	0.02*
CS7	2.9 ± 0.9	2.2 ± 0.7	3.3 ± 0.7	2.7 ± 0.9	3.3 ± 0.7	2.1 ±0.9	3.7 ±0.4	3.7 ±0.6	3.1 ±0.8	0.07
CS8	3.0 ± 0.7	3.3 ± 0.7	3.3 ± 0.7	3.0 ± 0.8	3.3 ± 0.7	2.4 ±0.8	3.5 ±0.6	3.5 ±0.7	3.2 ±0.8	0.01*
Total	3.0 ± 0.7	3.2 ± 0.7	3.1 ± 0.7	2.9 ± 0.9	3.4 ± 0.6	2.6 ±1.0	3.3 ±0.7	3.3 ± 0.8		

** significant at the 0.05 level*

4. DISCUSSION

4.1 Skills in IPE

Most health professional students in the present study rated higher mean scores for ‘communication skills’ and ‘respect for each other” which were important skills expected in working in a health care team.

Communication skills are also considered as some important skills in IPE and had higher mean score in the present study. The need for good interprofessional communication to help patient care in an effective manner is critical [6]. Clear communication among team members can alleviate some of the stress in the multidisciplinary team [3]. Some research

indicated that such communication and collaboration can be problematic as an example; the effective interprofessional collaboration can be undermined by a lack of understanding of roles of different professionals, limited communication and poorly coordinated teamwork [24,25,26]. Therefore, Weber and Karman [3] used the Tuckman model of group development for effective communication among team members. Mariano [2] described that the universities and other education programs need to allocate time to educate health students on communication skills and demonstrate that the potentially “unrealistic” scenario seen at the IPE session could become a reality in inter-professional practice [27]. But, the study done by Brown et al. [28] stated that the communication skills training program in IPE did not improve patient satisfaction scores.

Understanding group work and respect to each other skills are also considered as some important skills in IPE and had higher mean score in the present study. But no statistical significant differences were identified between the different professional groups for those skills. This is may be due to the lack of knowledge about the importance of IPE among students. But the past studies had shown that the greater cohesiveness are associated with better clinical outcomes and higher patient satisfaction [4].

Except MSL students, other professional groups rated significantly higher mean values for the leadership skills. The leadership skills are useful to facilitate and lead the multidisciplinary group work [3] with encouraging the team's functionalities [5].

4.2 Teaching / learning methods in IPE

In the present study, it is identified that the physiotherapy, pharmacy, speech and language therapy and nursing groups showed significantly higher mean values for the “Integrated ward classes” which is important for IPE.

Medical students’ rated higher values for wards based teaching activities and low rates for classed based teaching activities. This may be due to lack of interest for the class based activities with other professional groups. Similar finding was shown by MacDonald [29] that medical professionals are reluctant to participate in learning tasks such as role play, small group sessions and Problem based learning (PBL) [29] but it is suggested that without these interactive learning tools, practicing IPE would be difficult.

Most students in the present study rated traditional lectures are less important to improve IPE activities and problem-based learning (PBL) and small group sessions were suggested to improve IPE. This finding is consisting with a study by Hall and Weaver [5]which stated that methods to teach interdisciplinary practice differ greatly from traditional lectures and PBL can be used to resolve the problems and helps students to work together [7,8,6]. Small group interactions were also served as an effective introduction to IPE [27]. But Hall and Weaver [5] stated that it will be a challenge to introduce these concepts to faculty in practical and useful ways.

4.3 Clinical situations

In the present study, all the health professional students rated significantly higher mean score for management of acute situation and Community-based which play a major role to enhance IPE activity. The literatures had also shown that the inter-professional practice in management of acute situations is important [13,14] as multidisciplinary teams must work effectively under highly complex, stressful, and uncertain conditions [30].

Student's rated low values for the performing procedures and work in the hospital clinic as the most of the students may have less exposure to the above clinical situations during their second year clinical placement.

In the present study, students suggested other clinical situations which can be used to improve IPE such as chronic disease management require multi-disciplinary team service. The similar findings found that most successful intervention in chronic disease management is ensured by working together with different health professionals [15,16] and nurses involved with additional experience or training in clinical and behavioral treatment [31]. The importance of Inter professional practice with pharmacist team members also may contribute to the care of chronic illness by optimizing drug regimens to reduce adverse effects [17,18] and increase efficacy [19]. Some students irrespective of their professions suggested that management of psychiatric disease is an important clinical situation where different profession work as team. Young et al. [32] also reported that the positive IPE outcomes in the area of mental health practitioner competencies are related to the delivery of patient care. The multidisciplinary teams involved in dementia care [20] and Physical therapists assist dementia patients to optimize their physical conditioning [21] while Occupational therapists help the patients to improve activity of daily living [22]. Therefore; it is important to add these different skills in health professional's curricula to practice in future. The students rated lower mean score for "performing Procedure" is less important to improve IPE and higher score for "working in theatre & community care are important clinical tasks to improve IPE. Some research findings were also shown as an example of inter professional practice that nurses, palliative care physicians, and family physicians play a vital role in working together to enhance usual palliative home care in the field of community based care [13].

5. CONCLUSION

The findings suggest that key elements of the IPE are important to improve the aims of the inter-professional learning. Most health care students agree that management of acute situation and community based care are the most important clinical situations which can be used to work as a team for inter-professional learning. Respect for each other and communication skills are most imperative skills can be improved through inter-professional learning. Physiotherapy, Pharmacy, MLS and Nursing students believe that teaching skills, recognizing limitation as a professional and leadership skills cannot be improved through IPE. Most students highly agree that demonstration and work based tasks at wards are key teaching methods for achieving the aims of inter professional learning while Medical, audiology and MLS students show that teaching/ learning methods are less important to improve IPE. The above results illustrated that the extensive amount of time, dedication and skill required by the faculty to successfully implement the interprofessional education program.

CONSENT

All authors declare that 'written informed consent was obtained from the participants.

ETHICAL APPROVAL

The ethical clearance was obtained from the Ethics Review Committee, Faculty of Medicine, University of Colombo (EC/ 13/ 016).

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