Interprofessional Education: A Basic Need of Healthcare Department in Pakistan

Saif Ur Rehman*, Fahad Ali and Muhammad Usman Ahmad

Lahore College of Pharmaceutical Sciences 18-km Raiwind Road, Lahore, Pakistan

Abstract: Inter professional education (IPE) is the core concept of healthcare department in most of the developed countries on both student and professional level. There is no objection on its necessity. Top ranking universities of the world, especially of developed countries are working on IPE. But some of developing countries like Pakistan are almost unaware of this concept. No one is having the basic concept of IPE, except few, and they are not practicing in IPE so far. Talking about Punjab, there is no awareness for the concept of IPE. It is the need of our healthcare department that we must introduce IPE to improve healthcare quality. This survey was conducted to check the readiness for IPE among pharm D and MBBS students in different institutes of medicine and pharmacy of Lahore. Team went to different pharmacy and medical colleges and asked the students to fill in a questionnaire having 19 items, which was rated by the students on Likert scale. The result shows a conflict in the opinion of pharmacy and medical students. Team also interviewed the respondents shortly. This interview showed many reasons explained by medical students for their response but the most prominent one was the superiority complex. The need of the hour is to introduce IPE in universities for changing the attitude of medical students towards IPE.

Keywords: Interprofessional Education, Interprofessional Learning, Medical Sector, teamwork and collaboration, professional identity, role and responsibilities.

INTRODUCTION

A funded group of educators, administrators, and evaluators from the United States, as a member of Interprofessional Education Consortium (IPEC), demonstrated that IPE is a holistic concept and is defined as a learning process that prepares professionals and students through interdisciplinary education and provide them diverse fieldwork experiences to work in collaboration with communities to meet the multifaceted needs of society. It provides the knowledge, skills, and values that healthcare professionals need to serve the community in a collaborative way [1]. Clark also defines the IPE from another perspective that elaborates the significance of teamwork, where collaborative interaction among different professions contributes modifications and integrations as a result of input from other professions [2]. There are two concepts worth discussing first, interprofessional education (IPE): Occasions when two or more professions learn from, with and about each other to improve collaboration and the quality of care and the other one is, Interprofessional learning (IPL): Learning arising from interaction between members (or students) of two or more professions. This may be a product of interprofessional education or happen spontaneously in the workplace or in education settings [3]. Interprofessional collaboration is the process of developing and maintaining effective interprofessional working relationships with learners, practitioners, patients, clients, families and communities to enable optimal health outcomes [4].

Another study shows its importance as, Interprofessional education is not confined to only study forums, it also explains the learning of all other aspects of life relating to that profession. It provides the bases of learning about all features of professional collaboration at national and international level that explores the other professions and teaches students about collaborative competences, it includes:

- One's understanding of role and duties towards other professions.
- Limitations and constraints of one's role in own profession.
- Recognition and observation towards the role of other professions in one's own profession and one's own profession relating to others.
- Learning to work collaboratively and patiently to understand the other profession's plans,
- Learning assessments to achieve a common goal by overcoming misunderstandings, shortcomings and the differences [5].

Four core competencies have been published by IPEC which are as follows [6]:

- Values & Ethics: working with other professionals maintains an environment of respect and value for the fellow being.

*Address correspondence to this author at 24-Ishaq Colony B-block Sabzazar Lahore, Pakistan; Tel: +923024538382; E-mail: surrehman908@gmail.com

ISSN: 1927-3037/17

- Roles & Responsibility: patients and people are served in a better way while using knowledge of one's own profession along with the help of other professionals.

- Communication skills: communicate at the community, family, patient level along with other professionals in order to achieve a common objective i.e. betterment of healthcare department.

- Teams and Teamwork: delivering patient-centered care that is safe, timely, efficient, effective, and equitable is due to teamwork and collaboration provided by means of IPE.

Generally if we talk about Interprofessional education among medical students then it would be inappropriate to teach basics at this level because medical students have already a wide conceptual scientific literacy relating to their field but if we teach them main streams of one's profession and sharing own professional skills to others would be a great deal to promote and to get benefit from this type of learning that share educational, practical and professional key points and skills that would be a great benefit to patients if all relating professionals are willing to learn, work and collaborate together. At this collaborative level IPE is working in the areas that provide a forum where students can learn communicational skills, physical handling of their patients, key clinical skills and simulated ward and clinical settings. With the advancement in the field of health care profession, it is need of the hour to work collaboratively to compete the vast advancements of pathological problems; IPE is the only way to get through this. IPE is now providing awareness to fulfill the competences of future, alone one profession is not enough to get through the problems or to satisfy the expectations of patients. To provide the optimal health assurance to patients IPE has become necessity of the hour [7].

'Learning Together to Work Together' for Health is the basic principle for the working of IPE. This is the concept introduced by WHO. The concept along with necessity, practice, outcomes and strategies to work on IPE has been discussed in a report which is verified and published by WHO [8]. IPE is an old concept but has the same or more worth along with which it was introduced. It was primarily based on the principle introduced by WHO as follows: "learning together to work together" [9]. Jean Yan (member of the WHO) explained that the need of IPE is stimulated and enhanced due to global health workforce shortage [10].

In 2010, again the team of John Gilbert and Jean Yan, working on WHO framework promoted interprofessional education as the basis of collaboration and teamwork during which related healthcare professionals worked with such coherence that by relying upon one another, they produced the betterment in the healthcare quality. Results showed that IPE influenced positively over collaboration and teamwork and increased the healthcare quality which was depicted by patient's outcome and healthcare delivery. The WHO Framework for Action demonstrated methods and mechanisms in order to deliver and promote interprofessional education, including training of specialists to promote IPE, providing specific collaborative environment, and governing mechanisms to ensure patients safety [10]. In order to promote teamwork, WHO promoted IPE among undergraduate students. The reason for this step was to develop a professional identity among undergraduate students and to have an experience with other healthcare departments and social sectors from undergraduate level. Basis of this scheme was also to bring various healthcare departments together and to interact in various practical ways [11]. Due to which IPE is advancing in various countries like United Kingdom, Canada, Australia, America and the Nordic Countries [12]. Mickan and colleagues analyzed 10 case studies in which they revealed the reasons of low response in developing countries are; lack of knowledge, functioning issues, local and national policies and skills to understand the queries about IPE [13]. The concept of IPE was more often responded from developed countries than developing countries. One of this type of researches has been conducted in Karachi, Pakistan. Teams interviewed physicians of AGHA KHAN University Hospital and the results showed that most of the respondents were aware of the term IPE and were willing to work on it. Physicians' understandings regarding the IPE ability to improve communication, teamwork, healthcare coordination and quality were also tested. The study was general and there was no other work of this sort reported in Pakistan except a few [14].

METHODS

The theme of the research was a survey based checking the readiness of interprofessional education learning (RIPL) among the students of two main healthcare departments i.e. medicine students and pharmacy students. This is a common method previously tested and used to check RIPL value in students and practitioners [15]. Their responses show

their interest in working with the other healthcare teams. A comparison is established between the responses of the two groups showing their relative readiness towards interprofessional education. Skills, knowledge and willingness of medical and pharmacy students, were supposed to be checked in the survey in which respondents were asked to fill a questionnaire consisting of 19 items. The questionnaire was taken from a previous research conducted at the University of Saskatchewan, Saskatoon, Canada [16]. Same method of checking the RIPL of students has been used in 1999 which shows that this questionnaire method is patent to access the RIPL value of students [15]. The concept of IPE has been checked by three main antecedents: "teamwork and collaboration", "professional identity" and "role and responsibilities". Antecedent 1 of the Performa consisted of the questions checking the behavior of students, for the students of other departments, about their respect, trust, sense of limitations of one's profession and their readiness for collaboration and teamwork for the other department. This antecedent also checked the students care and responsibility towards the healthcare quality and humanity indirectly. Antecedent 2 also checked the interest of students towards IPE and the extent to which a healthcare student want to give time to this practice and which type of occasion he/she wants to join the other healthcare professional. Antecedent 3 was for checking the readiness of a student toward his own profession.

The team surveyed the students of different medical and pharmacy colleges in order to check the readiness of Interprofessional education; the scale was taken from a previous research. The comparison method was used to check the RIPL value between pharmacy and MBBS students. As the patency of this method is explained as by JM Bland [17]. 150 respondents from 5 pharmacy universities and 150 from 5 medical colleges were asked to fill the Performa after giving a brief introduction of the topic. The IPE is not a popular study mechanism in Pakistan so there is a need to introduce it to the respondents; the survey team did this practice. Respondents were randomly selected from different years of study but the students of fourth and fifth year were preferred due to their more knowledge and experience in their professional studies. The survey was conducted without discrimination of gender and age. All the medical and pharmacy college visited in this survey are the topmost colleges in Lahore from government and private sector. Almost all the colleges that were visited during the survey responded properly except Superior University Lahore from both medical and pharmacy departments and not allowed the team to survey. The target assigned to the team was to make a group of 30 students to fill the responses from each college, either medical or pharmaceutical. But due to shortage of time, varied response by the management teams of different colleges and other restrictions, there came a varied number of filled responses but in order to maintain the ratio for comparison the gross total number of filled responses was maintained to 130 each sect i.e. 260 total responses were made to fill in. Pharmacy colleges visited during this survey and the number of responses filled in by the students there are as follows:

(1) Lahore College of pharmaceutical sciences (4),

(2) Akhtar Saeed College of pharmacy Lahore (24),

(3) University of Punjab (22),

(4) University of Lahore (37),

(5) University of veterinary and animal sciences, Lahore (43).

The number of medical colleges and the number of respondents are:

(1) Ameer ul din medical college Lahore (28),

(2) Fatima Jinnah medical college Lahore (18),

(3) University of Lahore (31),

(4) Akhtar Saeed medical and dental college Lahore (32),

(5) Sheikh Kahlifa bin Zaid medical college Lahore (21).

After a brief introduction, the respondents were asked to fill the Performa within 4-5 minutes. Students rated the items by the number variable, 1-7 from strongly disagree to strongly agree. The survey team also had a short interview session of about 2-3 minutes of some respondents, which helped to determine the basic reason of the response. This practice proved fruitful in determining the basic reasons of the response showing the gap between the healthcare and education department for IPE. The whole population of 260 respondents was divided in two main groups; one was labelled as medical students and the other one as pharmacy students. These two groups were further divided in five parts each, labelled with the name of

institution from which the data was collected. All the subgroups of medical students were compared with the subgroups of pharmacy students, which showed the relative readiness and competencies of both the groups towards interprofessional education.

RESULTS

Collected data was analyzed with the SPSS version 23. There were seven values of rating the items in order to measure the readiness of Interprofessional education. The first part of questionnaire contained the content that was intended to explain the perceptions of both Pharm D and MBBS students about their making a way out to collaborate and work together on educational and professional levels. This segment consisted of total nine items that statistically explained the behavior of sample queries about teamwork and collaboration.

Table 1: Reliability Statistics of Antecedent 1

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.925	.925	9

Table 2: Reliability Statistics of Antecedent 2

Cronbach's Alpha	N of Items
.718	8

Table 3: Reliability Statistics of Antecedent 3

Cronbach's Alpha	N of Items
.349	2

First test applied on the data was to check the reliability of the variables that it checks if the items selected are checking for the same variable or different. Results in the Table **1** shows the Cronbach's Alpha value of 0.925 which is more than 0.7. The higher value of the test infers that the scale used for checking the readiness of interprofessional education is highly reliable and measures the same variable for both MBBS and pharm D responses. Lower values of Cronbach's Alpha than 0.5 show that the scale is not reliable. But the results shows that the scale chosen is highly reliable. The Cronbach's Alpha value of antecedent 2 is also acceptable and proves that this scale is also reliable and workable, while the Cronbach's Alpha value of antecedent 3 is slightly lower than the standard required. This antecedent consists of two items only, which can be neglected. The test shows that the scale consisting of total 19 items contains 17 items fully reliable and 2 values of Cronbach's Alpha of the scale are slightly lower than the standard. Overall scale is reliable.

Paired Sample Correlation and T Test

Paired Sample T Test was applied on the values of responses of both pharm D and MBBS students in order to check the difference between responses of the both groups. The results of the test between both groups of interest show the result deviation of very less statistics as explained in the tables.

Table **4** shows very less deviation in results, which ensures the collaborative perceptions in IPE. This table shows the standard deviation between both terms. It must be noted that the term 'IPE' used in the Tables **4**, **5** and **6** accounts for the responses of pharm D students while the value IPE2 shows the response of MBBS students.

Paired sample correlation between the responses of both study groups can be seen from the Table **5**. The significant value in the correlation of both groups is 0.593, which is very large value than 0.05 and this shows that the results are insignificant. There is no correlation between the both study groups. Both groups are independent of each other. The Table **5** explains about the difference in the perceptions of pharm D and MBBS students.

Table **6** test statistics with 95% confidence interval shows that there is significant difference between the opinions of MBBS and Pharm D students. T test is strong tool of finding the variation and supporting the study. Results for T Test are highly significant with p value of 0.001 which means there is significant variation in the response of pharmacy and MBBS students. Results are supporting the study objectives. The variation between the perceptions of both groups under consideration, calculated by the statistical analysis of the response, is the major hurdle in the way of promoting IPE in Pakistan.

DISCUSSION

IPE is the most significant and core concept of the healthcare department and is a vital step to be taken in the evolution of healthcare department. It is a matter of routine in western countries to use IPE practices. But in developing and under developing countries like

Table 4: Paired Sample Statistics

Sample:		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	IPE	4.53	130	1.138	.114
	IPE2	5.03	130	.832	.084

Table 5: Paired Samples Correlations

Pair 1:	N	Correlation	Sig.
IPE & IPE2	130	-.054	.593

Table 6: Paired Samples T Test

Pair 1:	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
IPE - IPE2	-.504	1.445	.145	-.792	-.216	-3.471	98	.001

Pakistan, it is not introduced properly. Especially in Punjab where literacy rate has been increasing catastrophically for last decade but still there are some points where we have to focus a lot, so that candidates can also improve their skills and expertise by sharing their work and collaborate with other professions particularly more relating to their field of interest and study by introducing IPE which has not been appreciated as much it could have been. By initiating practicing trials of IPE on educational and professional levels, we can improve the health care department by fulfilling patient's needs, which can be handled more effectively by working, and learning together. But there is no denial of its importance so as a pioneer we have introduced the concept in various medical and pharmacy colleges of government and private sector in Lahore during data collection and the short interviews from the respondents.

Results of Data collection and interviews showed that there is a vast difference between the opinions of the pharmacy and medicine students. For the exploration of the reasons, interview sessions were established. Short interviews of the respondents were conducted and results were validated by this practice. The results of interviews showed that the pharmacy students can be easily moved towards IPE, and most of them were willing to practice IPE but the problem area is the MBBS students. They are not willing for practicing IPE (inferred from the interviews of the respondents i.e. pharm D and MBBS students). Some of the main reason for not practicing IPE in Pakistan is that the MBBS students are the victim of SUPERIORITY COMPLEX. A thinking which has been developed here is that the MBBS doctors are the most superior of all the other people of healthcare profession. It is a common mentality here that the MBBS doctor is the most important person in the healthcare society while others (pharmacist, nurses, dispensers etc.) are not having such a value. That's why a sense of being superior to others does not allow them to work collaboratively with pharm D students on equal grounds. So first of all we have to discourage the superiority complex of the doctors and then, we have to introduce the IPE in various healthcare departments to work with them collaboratively and effectively.

In Australia, south wales, the acute hospital service proposed that 'in order to promote patient centered care there must be a system for clinical education within a multidisciplinary environment which promotes interdisciplinary learning'. This practice can prevent further problems. It is necessary for IPE community to develop and explain some measures for the promotion and development of IPE in terms of when it should happen (e.g. before or after qualification), place of its occurrence (e.g. in classroom or clinical settings), its structure (e.g. as team projects or teamwork simulations), to whom it should be delivered (which professions), by whom it should be delivered (e.g.

clinical or university facilitators), and why. We need further and more conceptual explanations of the mutual relationship of IPE, teamwork, collaboration and the healthcare system [18].

In medical sciences many problems are still unsolved and that can be done by putting two school of thoughts in one forum and removing their misunderstandings and contradictions to evaluate the importance of team work and collaboration and by this practice we can get effective results, discover more in medical sciences, can resolve scientific problems and discover more drugs and even we can improve already existing drugs by studying after effects and it can help a lot in diagnostic and health department. Another main reason to why IPE should be introduced is that the collective approach and ability of working in groups has been proven and recognized as a positive response towards improving health care department needs. As a huge and impressive benefit to health department, health community and for better health outcomes, it is a need of the hour to promote the IPE approach in continuing education that has now gained international recognition and is recognized to provide preventive, curative, rehabilitative, and other health-related services. [14]

CONCLUSION

This research showed the RIPL opinion of the students of MBBS and pharm D only in Lahore. But the results could not elaborate whether the IPE is acceptable in other regions of Pakistan or not, in other provinces and areas which are not checked through survey can be surveyed. The collective research can be established showing that Pakistan is willing for practicing wholly or not. This will be the collective report of the whole Pakistan. This practice can be prove effective in order to realize the problems of other regions of the country, which are explored now a days, in this aspect. Pakistan is also facing crisis for providing proper care and attention by the health practitioners. By introducing IPE, we can make the quality of healthcare better in the regions where healthcare services are deficient.

This research is only based upon the opinion of pharm D and MBBS students, so RIPL value can be measured in other sects of healthcare department, among nurses, dispensers, therapists, nutritionists, vets, etc. by this practice a complete healthcare department practicing IPE can be established which will be more effective than the previous one. This is a cross sectional type research which is based on a specified time span. But by converting this research into longitudinal one we can measure the RIPL value in different timespans showing the eagerness rate (increasing or decreasing) in the region. We can implement the method in various branches of healthcare departments. As the opinion of the practitioners is very important to enhance IPE practice, so it is important to check the RIPL value among different health practitioners. At the end, it can be concluded that IPE is the basic need of healthcare department in Pakistan. All we require is to just introduce and apply the mode of learning in Pakistan. So that Pakistan may have a well built and strong healthcare department like other developed countries.

APPENDIX

APPENDIX-A

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Teamwork and Collaboration								
1.	Learning with Pharm D professionals will help me become a more effective member of a health and social care team.	1	2	3	4	5	6	7
2.	Patients would ultimately benefit if health and social care professionals i.e. Pharm D and MBBS worked together.	1	2	3	4	5	6	7
3.	Shared learning with other health and social care students like Pharm D will increase my ability to understand clinical problems.	1	2	3	4	5	6	7
4.	Communication skills should be learned with other health and social care professionals like Pharm D.	1	2	3	4	5	6	7

5.	Team-working skills are vital for all health and social care professionals to learn.	1	2	3	4	5	6	7
6.	Shared learning will help me to understand my own professional limitations.	1	2	3	4	5	6	7
7.	Learning between Pharm D and MBBS professionals before qualification and for professionals after qualification would improve Working relationships after qualification/collaboration practice.	1	2	3	4	5	6	7
8.	Shared learning will help me think positively about other health and social care professionals i.e. Pharm D.	1	2	3	4	5	6	7
9.	For small-group learning to work, professionals need to respect and trust each other.	1	2	3	4	5	6	7
Professional Identity								
1.	I don't want to waste time learning with other health and social care professionals like Pharm D.	1	2	3	4	5	6	7
2.	It is not necessary for postgraduate health and social care professionals like Pharm D and MBBS, to learn together.	1	2	3	4	5	6	7
3.	Clinical problem solving can only be learnt effectively with professionals from my own school/organization.	1	2	3	4	5	6	7
4.	Shared learning with other health and social care professionals like Pharm D help me to communicate better with patients and other Professionals will.	1	2	3	4	5	6	7
5.	I would welcome the opportunity to work on small group project with other health and social care professionals like Pharm D.	1	2	3	4	5	6	7
6.	I would welcome the opportunity to share some generic lectures, tutorials, or workshops with other health and social care professionals like Pharm D.	1	2	3	4	5	6	7
7.	Shared learning and practice will help me clarify the nature of patients' or clients' problems.	1	2	3	4	5	6	7
8.	Shared learning before and after qualification will help me become a better team worker.	1	2	3	4	5	6	7
	Role and Responsibilities							
1.	I am not sure what my professional role will be/is.	1	2	3	4	5	6	7
2.	I have to acquire much more knowledge and skill than other professionals in my own faculty/organization.	1	2	3	4	5	6	7

APPENDIX-B

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Teamwork and Collaboration								
1.	Learning with MBBS professionals will help me become a more effective member of a health and social care team.	1	2	3	4	5	6	7
2.	Patients would ultimately benefit if health and social care professionals i.e. Pharm D and MBBS worked together.	1	2	3	4	5	6	7
3.	Shared learning with other health and social care professionals like MBBS will increase my ability to understand clinical problems.	1	2	3	4	5	6	7
4.	Communication skills should be learned with other health and social care professionals like MBBS.	1	2	3	4	5	6	7
5.	Team-working skills are vital for all health and social care professionals to learn.	1	2	3	4	5	6	7
6.	Shared learning will help me to understand my own professional limitations.	1	2	3	4	5	6	7

7.	Learning between Pharm D and MBBS before qualification and for professionals after qualification would improve Working relationships after qualification/collaboration practice.	1	2	3	4	5	6	7
8.	Shared learning will help me think positively about other health and social care professionals i.e. MBBS.	1	2	3	4	5	6	7
9.	For small-group learning to work, professionals need to respect and trust each other.	1	2	3	4	5	6	7
Professional Identity								
1.	I don't want to waste time learning with other health and social care professionals like MBBS.	1	2	3	4	5	6	7
2.	It is not necessary for undergraduate/postgraduate health and social care professionals like MBBS, to learn together.	1	2	3	4	5	6	7
3.	Clinical problem solving can only be learnt effectively with professionals from my own school/organization.	1	2	3	4	5	6	7
4.	Shared learning with other health and social care professionals will help me to communicate better with patients and other Professionals.	1	2	3	4	5	6	7
5.	I would welcome the opportunity to work on small group project with other health and social care professionals MBBS.	1	2	3	4	5	6	7
6.	I would welcome the opportunity to share some generic lectures, tutorials, or workshops with other health and social care Professionals like MBBS.	1	2	3	4	5	6	7
7.	Shared learning and practice will help me clarify the nature of patients' or clients' problems.	1	2	3	4	5	6	7
8.	Shared learning before and after qualification will help me become a better team worker.	1	2	3	4	5	6	7
Role and Responsibilities								
1.	I am not sure what my professional role will be/is.	1	2	3	4	5	6	7
2.	I have to acquire much more knowledge and skill than other /professionals in my own faculty/organization.	1	2	3	4	5	6	7

REFERENCES

[1] Suter E, Arndt J, Arthur N, Parboosingh J, Taylor E, Deutschlander S. Role understanding and effective communication as core competencies for collaborative practice. Journal of Interprofessional Care 2009; 23(1): 41-51. http://dx.doi.org/10.1080/13561820802338579

[2] Clark PG. A typology of interdisciplinary education in gerontology and geriatrics: Are we really doing what we say we are? Journal of Interprofessional Care 1993; 7(3): 217-28. http://dx.doi.org/10.3109/13561829309014986

[3] Freeth D, Reeves S, Koppel I, Hammick M, Barr H. Evaluating interprofessional education: A self-help guide.

[4] Reeves S. The rise and rise of interprofessional competence. http://dx.doi.org/10.3109/13561820.2012.695542

[5] Barr H. Competent to collaborate: towards a competency-based model for interprofessional education. Journal of Interprofessional Care 1998; 12(2): 181-7. http://dx.doi.org/10.3109/13561829809014104

[6] Panel IE. Core competencies for interprofessional collaborative practice: Report of an expert panel. Interprofessional Education Collaborative Expert Panel 2011.

[7] Baker A. Crossing the quality chasm: a new health system for the 21st century. BMJ: British Medical Journal 2001; 323(7322): 1192.

[8] World Health Organization. Health Professions Networks, Nursing and Midwifery. Human Resources for Health. Framework for Action on Interprofessional Education & Collaborative Practice. Geneva, Switzerland: WHO 2010.

[9] World Health Organization. Learning together to work together for health: report of a WHO Study Group on Multiprofessional Education of Health Personnel: the Team Approach [meeting held in Geneva from 12 to 16 October 1987.

[10] Yan J, Gilbert JH, Hoffman SJ, Rodger S, Ishikawa Y. WHO Study Group on Interprofessional Education and Collaborative Practice. J Interprof Care 2007; 21(6): 587-9.

[11] Wilhelmsson M, Pelling S, Ludvigsson J, Hammar M, Dahlgren LO, Faresjö T. Twenty years experiences of interprofessional education in Linköping–ground-breaking and sustainable. Journal of Interprofessional Care 2009; 23(2): 121-33. http://dx.doi.org/10.1080/13561820902728984

[12] Anderson ES, Lennox A. The Leicester Model of Interprofessional Education: Developing, delivering and learning from student voices for 10 years. Journal of Interprofessional Care 2009; 23(6): 557-73. http://dx.doi.org/10.3109/13561820903051451

[13] World Health Organization. Interprofessional collaborative practice in primary health care: nursing and midwifery perspectives.

[14] Vakani F, Sheerani M. assessing interprofessional continuing education and planning ahead. Pakistan Journal of Neurological Sciences (PJNS) 2014; 9(1): 15-7.

[15] Parsell G, Bligh J. The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS). Medical Education 1999; 33(2): 95-100.

[16] Del Bigio S, Mulhall S, Shevchuk Y, Mansell H. Perceptions of teamwork and interprofessional education in undergraduate pharmacy students. Pharmacy Education 2016; 16.

[17] Bland JM, Altman DG. Measuring agreement in method comparison studies. Statistical Methods in Medical Research. 1999; 8(2): 135-60.

[18] Garling P. Special Commission of Inquiry Into Acute Care Services in New South Wales Public Hospitals: Inquiry Into the Circumstances of the Appointment of Graeme Reeves by the Former Southern Area Health Service. NSW Department of Premier and Cabinet 2008.

Received on 02-06-2017 Accepted on 29-06-2017 Published on 30-08-2017

DOI: https://doi.org/10.6000/1927-3037.2017.06.02.3