

Evolution of Students' Readiness for Inter-Professional Learning Amongst Undergraduate Students in the Health Profession

Mèche P¹, Meyenberg CL¹, Douchamps L¹, Wyndham-White C¹, Ibrahimovic A¹ and Jeannot E^{1,2*}

¹School of Health Sciences – Geneva, University of Applied Sciences and Arts of Western Switzerland, Switzerland

²Institute of Global Health, Faculty of Medicine University of Geneva, Switzerland

*Corresponding author: Emilien Jeannot, Email: emilien.jeannot@unige.ch

Received: 11 August 2017; Accepted: 25 September 2017; Published: 29 September 2017

Abstract

This study, aims to examine evolution of the readiness between the first and third semesters in nursing, medical imaging technicians, dieticians, midwives and physiotherapists students, towards IPE prior to undertaking IPE activities and curricula. The design was a questionnaire survey administrated at two time points. The students were invited to complete the RIPLS questionnaire, after the first and third semesters of their bachelor curriculum. After the first semester of their bachelor curriculum, 140 students participated in the study and 125 after the second year. Longitudinal analysis, showed that strength of readiness significantly increased for all of the five disciplines, but this increased was statistically significant only for nursing ($p < 0.001$), dieticians ($p = 0.0002$) and physiotherapists ($p = 0.0016$). The study shows that all disciplines are increasing their enrolment to interprofessional education in their curriculum. This observation, underlines the importance of using the most realistic scenarios and educational activities proposed, for all disciplines.

Introduction

Given the potential impact for interprofessional education (IPE) on team based delivery and patient outcomes, progressive steps are necessary in developing interprofessional initiatives, supporting collaboration across healthcare disciplines in academic institutions [1]. Interprofessional education is thought to be important in helping to develop good working relationships between different professionals by promoting positive interprofessional attitudes and behaviors [2]. The potential of IPE to have a positive influence on interprofessional attitudes, is likely to depend to an extent, on the readiness of healthcare students to learn together, rather than in their uniprofessional groups, underpinning the importance of timing in the introduction of IPE curriculum in training [3].

Background

In Switzerland, the aging population, advances in medical sciences and healthcare delivery, must move towards an integrated healthcare system. This system of health requires effective interprofessional collaboration between different healthcare professions, capable of working together with the patient. In Geneva, at the School of Health Sciences, an IPE curriculum was implemented since 2012 for the complete training program for all five health professions, with the aim to promote Interprofessional Education (IPE) and collaboration (IPC) between future health care professionals [4]. Through a joint venture, between the health care school of the University of Applied Sciences of Western Switzerland and both Faculties of Medicine and Pharmacy of the Geneva University, a three module interprofessional education course for all healthcare students, was designed and

implemented. The design and content of the three modules, were based on the interprofessional competence framework, of the Canadian interprofessional Health Collaborative.

The major medical themes and skills required to cover the teaching of the competences, were identified through a Delphi study in our local Geneva healthcare network. The results revealed the following themes as the most important ones: patient communication, case management of chronic conditions, therapeutic patient education, health promotion and prevention, ethics and treatments [5].

Method

Study design

The design was a questionnaire survey administrated at two time points.

IPE curriculum and intervention description

At the School of Health Sciences, IPE is offered as a yearly 15 days didactic program. Simulated practice workshops, health promotion and prevention projects were shared between students of the five departments and the medical faculty. Training was focused on communication and collaboration between future caregivers. Students confront their responsibility, role and professional identity. While focusing on the patient's safety, students learn to understand each other's skills and limits within an interdisciplinary healthcare team. Training was dispensed by an interdisciplinary academic team to approximately 1000 students per year (250 doctors, 350 nurses and 100 medical radiology technicians, dieticians, midwives and physiotherapists). 10 ECTS of the 180 Swiss Bachelor of health credits are validated with IPE. In the first year, students join an IPE team (10 students) and focus on fictional clinical cases through courses, teamwork and e-learning.

The second year, part of the training was based on methodology and instrumentation of health projects management. Students implement and evaluate their project in the context of the socio-sanitary health network of Western Switzerland. Meanwhile, they are trained in IPE practices at the Interprofessional Simulation Center (ISC), inaugurated in November 2013 (Université de Genève, 2013). This study aims to examine evolution of the readiness of first and two year students, of all five departments towards IPE, after undertaking an IPE curriculum.

Sample and recruitment

Students from the following programs were included: nursing, midwifery, physiotherapy, dieticians and medical imaging technicians. The same students were invited to complete the RIPLS questionnaire at 2 points:

- After the first semester year of their bachelor curriculum
- After the third semester of their bachelor curriculum

In order to evaluate attitudes towards IPE, the RIPLS scale was used. An email was directly sent to students with the link to a web interface. Non-respondents received three mail reminders, in order to complete the questionnaire and obtain the highest response rates possible.

Instruments

To evaluate evolution of IPE readiness of our students, this study have used a standardized self-reporting scale. The readiness for interprofessional learning scale (RIPLS) was developed in 1999 [6], for use with health and social care undergraduate students and healthcare professionals.

We have developed a French version-adapted to the educational context of the Swiss IPE undergraduate students. This scale contains only 18 items, but the three sub-scales are identical to the original version of RIPLS. We have deleted item 19 "I have to acquire much more knowledge and skill than other students / professionals in my own faculty / organization", because all students followed the same IPE curricula. Demographic factors (sex) and student type are also collected.

Data analysis

The study was analysed using Stata software version 13. Descriptive statistic (Mean and standard deviation), were used to summarize the demographic characteristics and RIPLS data. Internal consistency of the RIPLS questionnaire and each of the three subscales was assessed, using Cronbach's alpha. Inferential statistics, T-test and one way analysis of variance (ANOVA), including post hoc Tukey Honestly Significant Difference. Differences were compared between gender and the five different disciplines. The Bonferroni test was employed at the post hoc analysis to identify the pairs which contributed towards the overall difference. All tests were two tailed, unless otherwise stated, with results considered significant if the p values are >0.05 . Effect size were also calculated for quantifying the differences between mean scores.

Ethics

This study was approved by the Geneva University Hospital Ethics Committee

Results

After the first semester of their bachelor curriculum, 140 students have participated in this study with a response rate of 48 %. Nearly 80% were females. Nurses were widely represented in our sample, accounting for 58%, while other departments represent for each, between 10-12% of the population. Physiotherapists were the least well represented, with only 7%.

After the third semester of their bachelor curriculum, 125 students have participated in this study with a response rate of 45 %. There was no significant statistical differences between the first and second year groups, regarding the distribution of responses by gender and departments. As expected in a repeated questionnaire study, response rates declined over the programme study, across all disciplines.

The results of the ANOVA analysis revealed no significant statistical distribution differences, between the gender regarding the RIPLS scores, between departments and groups; first semester versus third.

Table 1 shows the evolution of RIPLS scores between the first and third semester, for the five departments. The analysis showed that strength of readiness, increased for all of the five disciplines, but it

was only statistically significant significantly over time for nurses ($p < 0.0001$), dieticians ($p = 0.0002$) and physiotherapists ($p = 0.0016$).

Discussion

The results of this study, suggest a strong readiness among the healthcare students in a Swiss University to engage in IPE, on entry into their respective professional programs and after two years of curricula. Hence, we can suppose that students commencing a new professional course, will display high levels of enthusiasm for IPE. baseline (after the first semester of bachelor) RIPLS for students in this study, were almost identical to those found in another sample of Swiss undergraduate students [7] and other international samples including nursing, midwifery, physiotherapy, nutrition and dietetics [3,8].

Previous studies have found that nursing students were more, if not the most, likely to espouse the philosophy of interprofessional learning compared to other healthcare professionals [8]. We do not find exactly the same results in our study regarding nurses, who have the lowest RIPLS scores and physiotherapists who had the highest, in our sample which is in opposition to other studies [3,9].

The statistical significant increase concerning the RIPLS score by nurses, can be explained by the fact that these students are present in all public health and health promoting / prevention projects undergone during their third semester of their curricula. This gives a gratifying effect on their role, in these projects. Introduction of IPE within 5 disciplines and overall motivations and adherence for IPE, may be emphasized in nursing, physiotherapy, dietetics, more than in midwifery and medical imaging technician students. Another explanation, is that medical imaging technician students, were integrated later than other disciplines in public health projects, during the third semester.

Our study offers no evidence of the influence of the gender, results even highlight that female students have marginally higher mean scores. This contrasts with other studies, that found that females were more enthusiastic than male students in engaging in IPS activities [10].

This study has a number of limitations, although facilitating easy recruitment of participants; convenience sampling could have potentially influenced student's representation. As study participation was voluntary with no remuneration, it's possible that the students who enrolled, were strongly motivated, either for, or against interprofessionalism.

Another limitation is the small percentage rate of respondents (48 % in the first semester, 46 % in the third) and the limited numbers from each discipline, especially concerning the nurse students, accounting for over half of our sample. Therefore, caution should be taken when interpreting these results, so as not to generalize for this discipline. Moreover, we do not know if these are the same students, who answered

Table 1: RIPLS change between baseline and year 2 of the curriculum by student discipline.

Student discipline	Mean (SD)		Year 2 (N=125)	Overall change	P
	Baseline year 1 (N=140)				
All	Mean	69.9	73.1	3.2	<0.001
	SD	1.09	0.55		
Nurse	Mean	66.4	71.2	4.8	<0.001
	SD	1.6	0.72		
Medical radiology technicians	Mean	69.3	70.6	1.3	0.0951
	SD	2.36	1.09		
Dieticians	Mean	71.2	73.2	2	0.0002
	SD	1.41	0.72		
Midwives	Mean	71.8	72.6	0.8	0.3478
	SD	2.16	2.08		
Physiotherapists	Mean	73.5	75.8	2.3	0.0016
	SD	1.28	1.3		

the first and the second RIPLS questionnaire. The small percentage rate of men (only 20%) was also a sample limitations.

The reasons for the decline of participation, between the first and third semester, were multiple; a number of students dropped out or interrupted their studies, precise numbers of which, were not available.

Using the RIPLS scale was increasingly criticized in the scientific literature and challenged by different authors, like Mahler who quoted: RIPLS in its present version, cannot be regarded as a sound instrument to be used to compare and benchmark findings. Moreover, it cannot be used to assess or improve IPS interventions based on results produced [11]. This conclusion was shared by other authors, indicating that at present there is no highly reliable tool to measure outcomes of IPE and collaborative practice, in pre-qualification health professional students. Based on reported validity evidence and reliability data, the psychometric integrity of RIPLS is therefore limited [12].

Conclusion

This study shows that all disciplines are increasing their enrollement in interprofessional education in their curriculum. Furthermore, scenarios and educational activities proposed, must match in the most realistic possible way to reality, for all disciplines.

Upgraded search for relevant, specific projects and case studies, should be undergone for midwife and medical imaging technician students, in order to approach closer realism of their future professional activities. This will also ensure, the maintenance of motivated teaching staff in the different disciplines, in order to develop involvement in IPE to be carried out in these respective disciplines.

References

1. Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). *Cochrane Database Syst Rev*. 2013; 3:CD002213.
2. CAIPE. Interprofessional Education in Pre-registration courses. In CAIPE (Ed). 2012.
3. Coster S, Norman I, Murrells T, Kitchen S, Meerabeau E, Sooboodoo E, et al. Interprofessional attitudes amongst undergraduate students in the health professions: a longitudinal questionnaire survey. *Int J Nurs Stud*. 2008; 45:1667-1681.
4. Meche P, Meyenberg CL, Douchamps L, Theubet A, Emilien J. Design and implementation of an interprofessional education course for undergraduate students at the University of Applied Sciences Western Switzerland: the Geneva experience. *J Interprof Care*. 2015; 29:279-280.
5. Junod Perron N, Cerutti B, Picchiottino P, Empeyta S, Cinter F, van Gessel E. Needs assessment for training in interprofessional skills in Swiss primary care: a Delphi study. *J Interprof Care*. 2014; 28:273-275.
6. Parsell G, Bligh J. The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS). *Med Educ*. 1999; 33:95-100.
7. Meche P, Meyenberg CL, Douchamps L, Wyndham-White C, Ibrahimovic A, Jeannot E. Students' Readiness and Perception of Interprofessional Learning in an Undergraduate Swiss Healthcare Student Context: A Cross Sectional Study. *J Allied Health*. 2016; 45:e11-14.
8. Williams B, Webb V. A national study of paramedic and nursing students' readiness for interprofessional learning (IPL): Results from nine universities. *Nurse Educ Today*. 2015; 35:e31-37.
9. Williams B, Boyle M, Brightwell R, McCall M, McMullen P, Munro G, et al. A cross-sectional study of paramedics' readiness for interprofessional learning and cooperation: results from five universities. [Multicenter Study]. *Nurse Educ Today*. 2013; 33:1369-1375.
10. Wilhelmsson M, Ponzer S, Dahlgren LO, Timpka T, Faresjo T. Are female students in general and nursing students more ready for teamwork and interprofessional collaboration in healthcare? *BMC Med Educ*. 2011; 11:15.
11. Mahler C, Berger S, Reeves S. The Readiness for Interprofessional Learning Scale (RIPLS): A problematic evaluative scale for the interprofessional field. [Editorial]. *J Interprof Care*. 2015; 29:289-291.
12. Oates M, Davidson M. A critical appraisal of instruments to measure outcomes of interprofessional education. [Review Validation Studies]. *Med Educ*. 2015; 49:386-398.