Original Article Open Access

Comparison of Students' Perception of Preparedness for Interprofessional learning readiness in apprenticeship and apprenticeship on site in Schools of Nursing and Midwifery of Islamic Azad Universities in Isfahan, Iran in 2018

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Article Info

Article history:
Received 30 Jun 2019
Accepted 12 Feb 2020
Published 16 March 2020
Keywords:
Interprofessional education
apprenticeship
apprenticeship on site

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Abstract

Background & Objective: Interprofessional education (IPE) is one of the new approaches in the education of students in health-related disciplines. This type of training can increase interprofessional collaborations, thereby improving patient care quality. This study aimed to compare the perception of IPE in students apprenticeship and apprenticeship on site in schools of nursing and midwifery of Islamic Azad University in Isfahan, Iran in 2018.

Materials and Methods: This descriptive-correlational research was performed on 284 fifth and sixth-semester (before apprenticeship on site) and eighth-semester (during the apprenticeship on site) nursing and midwifery students, selected by convenience sampling. Data were collected using the readiness for interprofessional learning scale (IRPLS). Moreover, data analysis was performed in SPSS version 22.

Results: In this study, 255 students were female (89.8%) and the rest were male (10.2%). The mean score of students' perception of IPE apprenticeship was 76.62 (6.83) and apprenticeship on site was 80.21 (5.49), respectively. According to the results, no significant difference was observed between the groups in terms of the mean score of perception of IPE in all subscales of the questionnaire (P<0.001). Before apprenticeship on site, the students had a favorable perception in the areas of teamwork and collaboration (100%), interprofessional education readiness (99.3%), professional identity (95.1%), and roles and responsibilities (66.9%). However, while the perception of students during the apprenticeship on site was favorable in the areas of IPE readiness and teamwork and collaboration (100%), professional identity (97.9%), and roles and responsibilities (94.4%), their mean score was significantly higher in the subscale of roles and responsibilities, compared to the other participants.

Conclusion: According to the results of the present research, the students had favorable IPE readiness. However, they were more prepared in the subscale of teamwork and collaboration, compared to the areas of professional identity and roles and responsibilities.

Introduction

Health science education is one of the most fundamental social, cultural, and economic structures of societies, one of the most favorable consequences of which is improving the health of society members and maintaining sustainable growth and development (1). Given the alternation in population pattern, the load of diseases, the growing trend of chronic diseases, and the necessity of providing complex and multilateral services, there is a need to change the education approach of healthcare learners (2-5). The ultimate goal of healthcare students and staff is to provide better and more efficient patient care services. Therefore, any educational method or approach that could help us to achieve this goal is of paramount importance (6, 7). In fact, a particular specialty or professional group alone cannot meet the complex health care needs, and teamwork and the cooperation of various healthcare professionals are required to meet increasing human needs (2). Despite the importance of teamwork in various health care professions, members of these teams rarely train together and act as a separate profession (6, 8-10). A cause of inefficient teamwork is the poor understanding of other professions. On the other hand, interprofessional collaboration is

considered as one of the effective educational principles, so that many researchers have emphasized the importance of teamwork and collaboration between health team members (6, 8, 11). The World Health Organization (WHO) has outlined and defined multiprofessional education in its Alma Ata resolution. According to WHO, multiprofessional education is a process by which students or health care professionals with different backgrounds interact with each other over a period of time to learn to promote treatment, prevention, treatment, rehabilitation, and other health services through increased collaboration (2, 11). One year later, the WHO presented a report entitled "learning together to work together in health" and introduced the multiprofessional education as the best strategy, emphasizing its use in educational organizations (2, 4).

Interprofessional education (IPE) is considered as one of the approaches in educating learners in the health system that increases interprofessional collaboration and improves the quality of patient care (8, 12). IPE occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care (13, 14). A key component of IPE is the factors affecting the learning of students (15). An educational system is validated by the motivation and learning of its students, and the success of a curriculum depends on students' readiness, attitude, needs, and understanding of its importance and necessity in addition to its structure and content (8). Preparedness of students plays an important role in new educational models since emotional readiness and motivation are vital parts of providing a facilitating learning environment (13). Inadequate preparation and inappropriate attitudes of learners create large obstacles in the path of the design and implementation of educational programs (16). Therefore, assessing the preparedness of students could be considered as a fundamental part of using IPE. Accordingly, some researchers have emphasized the importance of attention to this topic in educational areas while assessing learners' preparedness (4, 17).

However, the timing of including IPE in the educational programs of various health professions is debatable. Some researchers believe that IPE must be initiated in the primary stages of education and before entering the clinic. These scholars suggest that stereotypical and negative attitudes toward other professions should not be formed in the early stages since it would be extremely difficult to eliminate them after this stage (18). On the other hand, some researchers believe that learners must first understand their own professional roles in order to have an acceptable performance as a health team member. Therefore, they suggest that IPE be provided in the final education stages (11). With this background in mind, the present study aimed to compare the students' perception of readiness for IPE before and during working in the field in the nursing and midwifery schools of Islamic Azad Universities in Isfahan, Iran in 2018. The current research was conducted to determine the highest preparedness level of students for IPE and whether there is an association between the type of apprenticeship and preparedness for IPE.

Materials and Methods

This correlational-descriptive study was performed on the fifth and sixth-semester (apprenticeship before the site) and eighth-semester (apprenticeship on site) nursing and midwifery students in the schools of nursing and midwifery of Islamic Azad Universities in Isfahan, Iran. The students were selected before and during the apprenticeship on site to assess them in terms of dealing with the students of other health fields as independent nurses. On the other hand, these students have the experience of working in a clinical environment and cooperating with other professions, compared to their students of lower semesters. In this research, subjects were selected by convenience sampling. The sample size was estimated at 284 individuals. However, considering a 10% attrition, a total of 312 students were entered into the study.

$$n = \frac{2\sigma^2(z_{1-\alpha/2} + z_{1-\beta})^2}{\delta^2}$$

In the end, incomplete questionnaires were excluded from the research and a total of 284 questionnaires were assessed. To collect the data, questionnaires were distributed among nursing and midwifery students before and during the apprenticeship on site in-person. The research tool was the readiness for interprofessional learning scale (RIPLS), designed and used by Parsell and Bligh in 1999 (17). In Iran, the scale was translated into Farsi by Irajpour & Alavi in 2010-2011, and its validity and reliability were confirmed based on experts' opinions and at a Cronbach's alpha of 0.8, respectively (13). After that, several researchers used the tool in their studies (3, 8, 13, 15). The scale primarily contained information about research objectives, definitions of some words related to the area, confidentiality terms regarding the personal information of students, and some of the individual characteristics of the responders. After answering three short questions, the responders would move on to 19 main items of the scale. The tool has 19 items and three subscales of teamwork and collaboration (nine items), negative and positive professional identity (seven items), and roles and responsibilities (three items). The subscale of teamwork and collaboration measures understanding and the importance of teamwork effectiveness and effective communication between professionals, whereas the subscales of negative and positive professional identity and roles and responsibilities measure positive and negative beliefs and attitudes that each person has towards their own and other professions, and understanding the roles, responsibilities and limitations of one's own profession and other professions, respectively. The scale is scored based on a five-point Likert scale from completely disagree (score=1) to completely agree (score=5). In addition, the score range of the tool is 19-95. The items of the teamwork and collaboration subscale is 1-9, scored in the range of 9-45. On the other hand, the items of the subscales of professional identity and roles and responsibilities are 10-16 and 17-19, and each subscale has a score range of 7-35 and 3-15, respectively. The moderate levels of 57, 27, 21, and 9 respectively for the variables of readiness, teamwork and cooperation, professional identity, and roles and responsibilities were considered as the total mean of the scale. Scores higher than these values are classified as good, whereas lower scores are classified as poor (2, 3, 13, 15).

The researcher referred to the desired departments after receiving the related permissions. The participants were ensured of voluntary participation in the study and the confidentiality terms regarding their personal information. The research tool was distributed among the students following explaining the research objectives and receiving consent. Data analysis was performed in SPSS version using descriptive (tables of frequency distribution and mean and standard deviation) and inferential (independent t-test and one-way ANOVA) statistics to describe the subjects in the two groups and respond to research goals, respectively.

Results

In total, 284 completed scales (out of 312) were assessed, 142 of which were related to students before apprenticeship on site, and 142 students during the apprenticeship on site. In this study, 255 subjects (89.8%) were female and 29 participants (10.2%) were male. In addition, respectively 87.3% and 92.3% of the students before and during the apprenticeship on site were female. In terms of age, 81% of the students before apprenticeship on site were in the age range of 20-22 years, whereas 83.1% of students in the apprenticeship on site were aged 23-24 years. In addition, 73.9% of students before and during the apprenticeship on site had no history of participation in IPE courses (Table 1).

Table 1: Frequency distribution of research units based on gender, age, academic characteristics and inter-professional learning history

Variable	Category	apprenticeship		apprenticeship on site		Total	
		Number	Percent	Number	Percent	Number	Percent
Gender	Female	124	87.3	131	92.3	255	89.8
	Male	18	12.7	11	7.7	29	10.2
Age	20-22 years	115	81.0	11	7.7	126	44.4
	23-24 years	21	14.8	118	83.1	139	48.9
	25 years and older	6	4.2	13	9.2	19	6.7
Field	Nursing	86	60.6	74	52.1	160	56.3
	Midwifery	56	39.4	68	47.9	124	43.7
History of participating in courses Interprofessional education	Yes	37	26.1	37	26.1	74	26.1
	No	105	73.9	105	73.9	210	73.9
Total		142	100.0	142	100.0	284	100.0

According to Pearson's correlation coefficient results, there was no significant relationship between age and scores of understanding preparedness for IPE (r=-0.041, P=0.486), teamwork and cooperation (r=-0.013, P=0.833), professional identity (r=-0.094, P=0.113), and roles and responsibilities (r=-0.056, P=0.345) in all of the participants (Table 2).

Table 2: Correlation coefficient of age and perceived scores of learning readiness between students

Dimension	Number	Correlation coefficient	p Amount
Readiness for interprofessional learning	284	-.041	.486
teamwork and collaboration	284	-.013	.833
professional identity	284	-.094	.113
roles and responsibilities	284	.056	.345

Moreover, the results of the independent t-test were indicative of a lack of a significant difference between students before and during the apprenticeship on site regarding the mean score of all dimensions of preparedness for IPE (P<0.001). The scores of teamwork and collaboration (100%), understanding readiness for IPE (99.3%), professional identity (95.1%), and roles and responsibilities (66.9%) were favorable in students before the apprenticeship on site. In students during the apprenticeship on site, scores were favorable in the subscales of understanding readiness for teamwork and collaboration (100%), professional identity (97.9%), and roles and responsibilities (94.4%). Furthermore, the independent t-test results demonstrated a lack of a significant difference between students before and during the apprenticeship on site in terms of the mean scores of readiness for IPE and the subscale of teamwork and collaboration. While there was very little difference between students before and during the apprenticeship on site in terms of professional identity, a significant difference was observed in the mean scores of the mentioned students regarding the subscale of roles and responsibilities (Table 3).

Table 3: Frequency distribution of research units based on perception of inter-professional learning readiness in students apprenticeship and apprenticeship on site of Islamic Azad University of Isfahan

Variable	Level	apprenticeship		apprenticeship on site	
		Number	Percent	Number	Percent
Readiness for interprofessional learning	Weak	1	.7	0	0.0
	Appropriate	141	99.3	142	100.0
teamwork and collaboration	Weak	0	0.0	0	0.0
	Appropriate	142	100.0	142	100.0
professional identity	Weak	7	4.9	3	2.1
	Appropriate	135	95.1	139	97.9
roles and responsibilities	Weak	47	33.1	8	5.6
	Appropriate	95	66.9	134	94.4
Total		142	100.0	142	100.0

Discussion

According to the results of the study, students' readiness for IPE was at a favorable level and there was no significant difference between the students before and during the apprenticeship on site regarding the subscales of teamwork and collaboration and professional identity. However, readiness for IPE in the subscale of roles and responsibilities was significantly higher in students during the apprenticeship on site, compared to students before apprenticeship on site. Moreover, students had higher readiness in the area of roles and responsibilities. According to the results of the present study, there was no

significant relationship between IPE and the variables of age, gender, as well as a history of clinical and educational work. In this respect, our findings are in line with the results obtained by Irajpour and Alavi, who conducted a research to evaluate the preparedness of higher education students of Isfahan University of Medical Sciences for IPE and to determine the relationship between the readiness of students and some underlying factors. According to these scholars, there was no significant relationship between the preparedness of students and factors such as age, gender, and a history of clinical and educational work (13).

In a research entitled "IPE; a way to improve health care", Daloii et al. assessed the role of IPE in the improvement of health care. Congruent with our findings, the results of the mentioned study were indicative of the positive effect of IPE on team performance, indicating the important role of this variable in health improvement (19). Therefore, it could be concluded that the ultimate goal of IPE is improving the quality of patient care. Moreover, a comparison of results conducted in this field revealed the positive impact of IPE on the improvement of health team performance. In a study, Vafadar et al. evaluated 500 higher education students in the field of health sciences (nursing, medicine, and any other related discipline and paramedical) in order to determine the readiness of these individuals for IPE. Consistent with our findings, these scholars reported a higher mean score in the subscale of teamwork and collaboration. In addition, nursing and midwifery students had a positive attitude toward the mentioned area (2). Collaborative learning is a key factor in developing the ability, performance, and collaboration between professionals. Moreover, teamwork and IPE improve communication, responsibility, and teamwork, and ultimately enhance patient care quality. Overall, it seems that IPE is able to facilitate teamwork and interprofessional collaborations. In research by Foronda et al. entitled "interprofessional relationships in health care", different educations were provided to nurses and physicians, and various forms of communication styles were taught to these individuals. Some of the barriers to proper communication include lack of self-confidence, lack of organization, and structural hierarchy. Research review was indicative of the effectiveness of educational programs in the improvement of interprofessional communication skills (20), which is consistent with our findings. Future guidelines in training include adding courses related to patient safety to the curriculum, using professional transfer tools, practicing in simulated hospitals for training, and uniting professions.

Teamwork training is the most common method to strengthen the spirit of teamwork in healthcare environments. In this respect, various educational methods could be used to improve the team process and patient outcomes. Nonetheless, those methods that integrate teamwork into daily activities are more efficient. In teamwork education, a general recommendation is for people to learn with, from, and about each other. However, students' preparedness for IPE is different in each discipline.

As a part of the IPE programs, nursing and midwifery students collaborate with a wide range of student groups. The most common strategy for learning is inter-professional training lectures and workshops to acquaint students with teamwork and collaborative performance. Moreover, theoretical interprofessional training sessions are held based on participatory interactions between students of different professions in common and related courses. The three main principles of IPE are conversation, interaction, and reflection. It is crucial to improve IPE among students. In this respect, barriers to learning between professionals can be removed through the improvement of learning methods, introducing group discussions among multidisciplinary students in lectures, or introducing interdisciplinary training programs using team-based learning. It is recommended that IPE be included in the curriculum of all health-related disciplines and before apprenticeship on site so that readiness and

attitude toward IPE could be enhanced in students of different professions. By doing so, students can take on the role of a nurse while having a better perception of their profession in meeting patients' needs.

Conclusion

According to the results of the present study, students had proper readiness for IPE. However, students during the apprenticeship on site had a significantly higher perception of IPE readiness in the subscale of roles and responsibilities, compared to students before the apprenticeship on site. Nonetheless, no significant difference was observed in the subscales of teamwork and collaboration and professional identity. Overall, preparedness for IPE was higher in the subscale of teamwork and collaboration, compared to subscales of professional identity and roles and responsibilities. Given the importance of IPE and readiness of nursing and midwifery students for collaboration, it is crucial to focus on the improvement of IPE in the curriculum of students. This type of education plays a significant role in health improvement, which is the ultimate goal of health care services. Moreover, determining the students' preparedness for IPE can help policymakers of the health area to consider establishing multiprofesisonal health teams in healthcare centers in their future plans.

One of the major drawbacks in the present study was its cross-sectional nature, which limited the generalization of results to other departments and areas. Other limitations included a lack of proper understanding of IPE by students, a small sample size, assessing a specific group of medical students in Islamic Azad Universities of Isfahan, and a lack of comparison of the results to the universities across the country. It is recommended that extensive research be conducted to assess the feasibility and effectiveness of such programs in all medical universities in the country while taking the conditions of each center into account. It is also suggested that further studies be conducted on different populations.

Acknowledgments

This article was extracted from a master's thesis in Community Health Nursing with a code of IR.IAU.YAZD.RCE.1398.009. Hereby, we extend our gratitude to all of the students for assisting us in performing the research.

Conflicts of Interest: The authors declare that there are no conflicts of interest.

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