Perception and Readiness towards Interprofessional Learning between Two Health Professional Students

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Abstract- There is evidence in the literature that links interprofessional education and practice with better patient outcomes. However, the big driver in the implementation of IPE is the readiness of academic organizations to develop their curriculum around IPE. Similarly, student's attitudes and perception of learning alongside another discipline were mixed. Our university ___ has yet it has not been fully embraced. Therefore we aimed to assess the perception and readiness towards interprofessionall learning among students from two healthcare programs at our university. A pre-and-post study design was conducted. Students from nursing and exercise science were recruited to participate in a 3-day IPE activities and were asked to complete the Readiness to Interprofessional Learning Scale, Interdisciplinary Education Perception Scale and an IPE Satisfaction Survey. Our study showed that both nursing and exercise science students have positive attitudes coming into this project based on high overall RIPLS and pre-test IEPS scores. However, these results should be interpreted with caution because of small sample size.

Index Terms- perception, readiness, interprofessional learning, health professional students
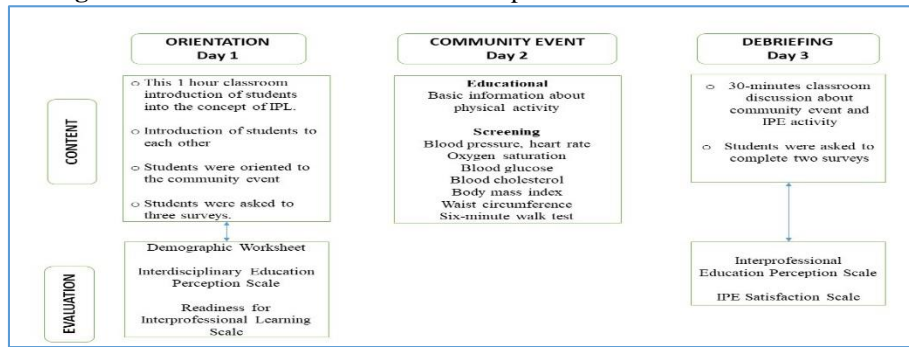
I. INTRODUCTION

In 2010, the World Health Organization[1] has identified interprofessional education (IPE) as the way for "students from two or more professions learn about, from, and with each other to enable effective communication and improve health outcomes". Since then, there is increasing evidence in the literature that links interprofessional education and practice with better patient outcomes[2]. So why have schools and universities not fully embraced IPE as yet? One big driver preventing the implementation of IPE is the readiness of academic organizations to develop their curriculum around IPE. Similarly, student's attitudes and perceptions of learning alongside another discipline were mixed[3,4]. Readiness for IPE implies that there is a degree of willingness for team-working and team-learning, the importance students give towards acquiring their professional identity, the power of their professional culture and the views they hold of professional boundaries or overlap in roles and responsibilities[5]. While IPE is gaining acceptance in the U.S. the bulk of the evidence on students' attitudes towards interprofessional collaboration are from outside the country.

Our university has been promoting interprofessional education and collaboration between faculty and students from various programs for several years. However, similar to other universities this has not been fully embraced by everyone. The purpose of this project was to evaluate the perception and readiness towards interprofessional learning between nursing and exercise science students from our university.

II. METHOD

This IPE project is a cross-sectional study design. Students enrolled at our university's undergraduate nursing and exercise science programs were recruited to participate. To be eligible to participate, students must be willing to attend the orientation, community event, and debriefing sessions (Fig. 1). The orientation and debriefing were conducted at the university and the one-time community event was a planned health fair in partnership with community leaders in Hamtramck. Michigan

Fig. 1. Protocol for content and evaluation process

Protocol:

Orientation: This phase of the IPE project was when nursing and exercise science students come together for 1-2 hour introduction, including to IPE and the upcoming event. The students introduced themselves and provided a quick introduction to their programs. A short presentation on the concepts of interprofessional education, practice and collaboration was given. At the end, their parts in the community events were discussed. Students were asked to complete three questionnaires/surveys at the beginning of orientation.

Community Event: Students collaborated to present educational component and administer some screening tests with the assistance of the faculty and community consultant. Components of the educational section were 1) basic information about physical activity and exercise, including definitions, 2) benefits, 3) different age and gender specific types of PA. Students may also demonstrate a short exercise regimen seniors may utilize at home. Students administered screening tests including 6-minute walk test, skinfold and waist circumference measures alongside the nursing students and faculty. Student's participation to this community was not limited to students who participated in this project.

Debriefing: After the community event, students met for a short debriefing session to discuss about their experience with IPL. A repeat RIPLS survey and program evaluation survey were administered.

Instruments:

Readiness for Interprofessional Learning Scale. The Readiness for Interprofessional Learning Scale (RIPLS) by McFayden et al will be used to measure student's readiness or beliefs about IPL[6]. The RIPLS has 19 self-reported items and a 5-point Likert Scale (Strongly agree = 5, agree = 4, neutral = 3, disagree = 2 and strongly disagree = 1) is used to analyze the students' responses. The tool has four different domains. Domain 1 focused on the aspects of teamwork and collaboration (item 1–9). Domain 2 focused on negative professional identity towards other professions (item 10–12); whereas domain 3 was on positive professional identity (item 13–16). Domain 4 focused on the roles and responsibilities of professionals (item 17–19). The intra-class correlation of this scale was 0.76 and the Cronbach's α was 0.90[6-8] (McFayden et al., 205; Coster et al., 2008; Horbaugh& Williamson, 2007). Domain 2 items were reverse coded during data analysis as the items were negatively worded. The score RIPLS scores ranged from 12-95, with the higher mean score represents a positive attitude towards IPL.

The **Interdisciplinary Education Perception Scale (IEPS)** is the second instrument used in the study to detect changes in learning over time among health professional students[9]. It is a 12-item tool consisting of three domains - Competency and Autonomy (items 1-5), Perceived Need for Cooperation (items 6, and 7), and Perception of Actual Cooperation (Items 8-12). The instrument uses a 6-point Likert-scale (Strongly disagree = 1, moderately disagree = 2, somewhat disagree = 3, somewhat agree = 4, moderately agree = 5 and strongly agree = 6). The scale has a Cronbach's alpha of 0.80 with a test reliability of 0.60. A higher mean score represents positive attitudes towards IPL[9].

IPE Satisfaction Scale developed by the College of Health and Human Services will be used to evaluate student satisfaction of their IPE experience. It is a 10-item on a 7-point Likert scale (Strongly Disagree to Strongly Agree).

Data Analysis

SPSS Version 25 was used in data analysis. Descriptive statistics was used to calculate scores. Paired t- test was used to compare pre-and-post scores in the IEPS. Welch's t-test was used to calculate difference in scores because of uneven variables and unequal sample size.

Ethical Consideration

Approved from our Institutional Review Board (IRB) was obtained prior to start of the project. Informed consent was obtained from students prior to orientation. Since students from both programs were invited to participate in the community event held, only data from students who consented were included in this analysis. A separate IRB approval and consent form were obtained for the participants in the community event.

III. FINDINGS

A.   Student characteristics

Seventeen students (12 from nursing and 5 from exercise science) consented to participate in the project. However, only 11 students attended the debriefing phase (35% were lost to follow-up). The mean age of all students was 24 years (SD - 6), with age range from 19-44 years old. The mean age of nursing students was 25 (SD-7) whereas the mean age of exercise science students was 21 (SD-5). Seventy-seven percent were females, 82% Whites (18% Asian), 51% were single and only two students have participated in classroom IPE before.

B.   Readiness for Interprofessional Learning

The overall RIPL mean score was 83.24 (4.37). Exercise science students' score in the overall RIPLS scores was significantly higher compared to nursing students. Table 1 presents the overall mean scores and each domain scores on RIPLS between nursing and exercise science students. The lowest overall score was the roles and responsibilities domain (7.41, SD- 2.24); whereas the highest overall score was the teamwork and collaboration domain (45.53, SD-1.87). Positive professional identity domain score was significantly higher among exercise science.

Table 1. Domain scores on RIPLS between nursing and exercise science students.

RIPLS (score range)	Overall Mean (SD) n=17	Nursing Mean (SD) n=12	Exercise Science Mean (SD) n=5	F(d1,d2), p value
Overall mean score (score range: 12-95)	83.24 (4.37)	82.67 (4.36)	84.60 (4.56)	0.87(1,6.45), 0.40
Teamwork and Collaboration (score range: 9-45)	43.53 (1.87)	43.58 (1.88)	43.40 (2.07)	0.30 (1, 6.92), 0.87
Negative Professional Identity (score range – 3-15)*	13.77 (1.68)	13.42 (1.88)	14.60 (.55)	3.95 (1, 14.30), 0.66
Positive Professional Identity (score range: 4-20)	18.53 (1.62)	18.25 (1.77)	19.20 (1.10)	1.81 (1, 12.16), 0.20
Roles and Responsibilities (score range: 3-15)	7.41 (2.24)	7.42 (1.78)	7.40 (3.36)	.00 (1, 4.97), 0.99

C.   Interprofessional Education Perception

The total score and scores in all three subscales were noted to be lower in the post-test, however, this change in scores did not reach statistical significance. The total mean scores for all subscales in both groups of students for pretest and post-test (65.94 and 62.62, respectively) fell with the agreement range (moderately/strongly agree) of 60-72. Table 2 presents the mean change in scores in the total score and the three IPES domains.

Table 2. Comparison of pre-post IEPS domains

Domains	Pre (n-17)	Post (n-11)	Change (pre-post) (n=11)
Competency & Autonomy (score range 5-30)	26.45 (2.58)	25.91 (4.48)	0.55 (5.65)
Perceived Need for Cooperation (score range 2-12)	11.82 (.60)	10.73 (1.79)	1.09 (2.02)
Perception of Actual Cooperation (score range 5-30)	26.45 (2.58)	25.91 (4.48)	2.27 (4.10)
Total Score Range (12- 72)	65.94 (3.07)	62.64 (10.07)	3.91 (10.3)

D.   Student satisfaction

Majority (70%) of the students were satisfied with the IPE experience based on their responses of slightly agree to strongly agree on the survey. Similarly, students reported that they would recommend this IPE experience. Table 3 presents the students' responses on the IPE Satisfaction Survey.

Table 3. IPE Satisfaction Survey

IPE Satisfaction Survey	Strongly disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. The state objectives were understandable.	9.1	0	27.3	0	27.3	36.4
2. The educational materials and resources enhanced my learning.	9.1	0	9.1	27.3	27.3	27.3
3. The event topic(s) were relevant to my future career.	0	9.1	0	45.5	0	45.5
4. I received sufficient and timely information about this event.	9.1	18.2	0	18.2	9.1	45.5
5. The facilitators' strategies stimulated my thinking and inquiry.	9.1	0	9.1	36.4	9.1	36.4
6. The facilitators were effective in managing group interactions.	18.2	0	9.1	18.2	18.2	36.4
7. The facilitator encouraged active participation.	9.1	0	0	9.1	36.4	45.5
8. I was able to access the reading materials and resources prior to the event.	9.1	18.2	0	9.1	45.5	18.2
9. The structure supported "learning about, from and with students from other professions."	9.1	0	18.2	36.4	9.1	27.3
10. The event was a good use of my time.	9.1	9.1	0	27.3	9.1	45.5
Total:	9.1	5.5	7.3	21.8	19.1	29.3

IV. DISCUSSION

Our findings showed that undergraduate nursing and exercise science students had positive attitudes towards interprofessional learning coming into this project based on the high overall scores in RIPLS and pre-test IEPS. This is consistent with several previous studies that examined baseline attitudes among various health professionals including RN-BSN and Masters in Social Work students[10]; medical, physician assistant and nursing students[2]; internal medicine interns and senior level accelerated nursing students[11]; and dental and nurse practitioner students[12]. This present study noted that students from exercise science had significantly higher total scores in the RIPLS survey than nursing. This may be explained that since the community event was related to physical activity and exercise, the exercise science student's enthusiasm may be as high as or higher than the nurses in participating and collaborating with this activity.   This result is similar to the study by Groessl and Vanderhouten's (2019) comparing undergraduate nursing students and graduate social worker students[10]. It can be assumed that graduate students in health care professions may have had the opportunity in their undergraduate studies or job to work with other health professionals hence, the higher attitude towards other health professions. The present result however, should be interpreted cautiously because of the small sample size particularly with the exercise science students.

Exercise science students have significantly higher scores in the positive professional identity compared to nursing students. As nursing has been considered one of the most trusted profession, it is not surprising that other health professional students have positive attitudes toward nursing students. Roles and responsibilities received the lowest score among all the domains, and there was a difference between nursing and exercise science students' scores in this domain, although not significant. This was expected since most health professional students do not interact with each other during their training. This result should also be interpreted with caution as previous studies have shown that the roles and responsibilities domain has poor internal consistency[13-14].

There was no change in the attitudes about IPL before and after the IPE event between nursing and exercise science students. There was no change noted in the IEPS scores pre-and-post activity between nursing and exercise science students. Interestingly, a drop in the post-test IPES scores in all domains was noted. This could be explained in that students only interacted with each other for a short period during orientation and the community event. At the same time, during the community event, students from the same program may been assigned or have preferred to work together during the event. Hence, any decrease in the scores post-test cannot be regarded as a negative behavior or attitude toward the other student group.

The present study showed that students were nursing and exercise science satisfied with IP learning. Since our university has been promoting IP collaboration among faculty and students for several years, student's enthusiasm with IP learning is expected. Similarly, in participating in the IPE activity they received a certificate of participation in the event which they can use for their professional portfolio. Students entering our university is also encouraged to participate in service-learning opportunities during their training. This project acknowledges several limitations. The sample size was very small and it was unbalanced with a larger number of nursing students who participated. The project was conducted in one university. The timeframe from orientation to debriefing was less than a month hence, change in student's attitude may not be seen as quickly in this short period. The RIPLS survey was only administered during orientation and was not repeated at the debriefing.

V. CONCLUSION

Health professional students traditionally have minimal contact with each other during their education training. Educating health professionals at pre-licensure level in an interprofessional environment will enhance attitudes towards each other, increase knowledge of each other's roles and responsibilities, and promote interprofessional communication (Curran et al, 2010). Our project showed that nursing and exercise science students from our university have positive attitudes, ready and satisfied of interprofessional learning during

the short time period they have interacted together. However, the results should be interpreted with caution because of the very small sample size. It is important to note that IPE goals cannot be achieved with one activity thus, it is important for our university to continue any type of IP learning activities regardless of the number of student participants. Our project, therefore, adds to this growing evidence on perception and readiness of health professional students of interprofessional learning.

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