5-2024

The Impact of Healthcare Interprofessional Education on Collaboration.

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University Honors Capstone Project

Spring 2024

Table of Contents

Abstract

Interprofessional relationships are important to the productivity of healthcare teams, especially as collaborative approaches become increasingly common in the healthcare setting. This paper focuses on the impacts of interprofessionalism and interprofessional education on healthcare teams collaborations. Drawing from a mixed-methods approach, data was gathered through an online survey and interviews conducted at the UNMC GOODLIFE Clinic, a student-run clinic. Findings reveal differences in perceptions between post-graduate professionals and students regarding the role and importance of interprofessionalism. While professionals demonstrate an understanding of IP collaboration, students express a need for more comprehensive IPE. Barriers to effective teamwork, such as professional hierarchies and inconsistent communication, are identified, alongside potential remedies including fostering mutual respect and understanding. These insights show the importance of integrating IPE initiatives into healthcare education and practice to create a collaborative healthcare workforce capable of delivering high-quality, patient-centered care. Future research directions include longitudinal studies tracking the effects of IPE on practice and exploring successful strategies for enhancing interprofessional collaboration.

Key Words: Interprofessionalism, Healthcare, Collaboration, Student Run Clinics, Education

Introduction

Interprofessional Relationships

The extent of understanding and collaboration among professionals is a vital indicator of a productive and efficient team. Productivity is defined in this context as the efficiency of the production of diagnoses, test results, and any information that could affect the patients' health. IP teams have become increasingly common in healthcare settings, playing a pivotal role in the evolving models of healthcare in the United States [8]. This collaborative approach aims to enhance patient outcomes and improve the quality of care provided. Each professional contributes their unique expertise, knowledge, and perspectives to the team. However, with this shift towards collaborative healthcare teams, there are learning curves that must be navigated to ensure that interprofessional (IP) relationships are truly advantageous.

Quality collaboratives encompass the concept of professional networks utilized for sharing knowledge, experiences, and resources [11]. By connecting healthcare providers, this approach is intended to create communication and collaboration among members of a patient's healthcare team. However, certain conditions must be addressed before this concept can function optimally. Spoken language, or as is often the case in healthcare, online language in documenting events in a patient's chart, plays a crucial role in the effectiveness of an IP team. Language has the ability to shape attitudes, behaviors, and relationships within a team [1]. Various aspects of language, such as speech patterns, can convey different messages, and these linguistic indicators can either strengthen or weaken relationships. Additionally, the impact of body language cannot be overlooked.

Goffman's Theory of Impression Management is instructive in understanding how healthcare professionals enact concepts of team and teamwork within their IP teams [7]. This theory refers to the strategies used to shape others' perceptions of oneself. Perceptions of importance and competency within a healthcare team can significantly influence how individuals are treated in the team environment. Such perceptions, or sometimes stereotypes, of professionals may arise from differences in training, priorities, and expectations [9]. Effectively managing these impressions and performative aspects of teamwork can lead to varying levels of cohesiveness within IP teams. Teaching professionals about other team members roles on the IP team could help to increase the functionality of the team by reducing some of these incorrect perceptions and stereotypes.

Interprofessional Education and Learning Environments

The learning environments, instruction, and observational experiences of health students profoundly shape their future practices. The resulting disposition of students can vary depending on the type of training they receive and the interactions they have with other pre-healthcare students [3]. Recognizing this, the healthcare field has increasingly emphasized the importance of interprofessional training to prepare students for future work environments. Interprofessional education involves students from various disciplines learning and working together on patient cases, aiming to enhance collaboration, communication, and teamwork skills [10]. Within this educational framework, students not only learn their own roles but also gain insights into the roles of other disciplines and the contributions they can make. While IP education has shown positive impacts on teamwork skills, communication, and collaboration, evidence regarding its effect on patient outcomes remains inconclusive [4]. However, it is widely acknowledged that IP

education fosters positive perceptions among students, based on their prior experiences with each other in an educational context.

One effective method of integrating IP education into curricula is through student-run clinics, such as the UNMC GOODLIFE Clinic. This clinic not only serves the diabetic community of Omaha, Nebraska, as a free health clinic but also provides valuable experience to medical, nursing, pharmacy, physical therapy, physician assistant, and clinical laboratory science students at UNMC. Student-run clinics serve as the training grounds where students develop their interactions and understanding of other health professionals, which will be invaluable in their future careers serving the community. IP learning in student-run clinics facilitates mutual understanding, respect, and trust among students through shared experiences, reflective practice, and ongoing education [5]. These clinics enable students to interact and learn from their peers in other disciplines, providing direct insight into the roles, perspectives, and contributions of other healthcare professionals in patient care.

By immersing students in IP experiences early in their education, student-run clinics play a crucial role in preparing them for collaborative practice in real-world healthcare settings. These experiences contribute to promoting a more cohesive healthcare workforce. As students engage in collaborative problem-solving and patient care, they develop the skills and attitudes necessary for effective teamwork and communication, which are essential for delivering high-quality, patient-centered care.

Barriers and Remedies to Interprofessional Relationships

As discussed previously, establishing effective teamwork among healthcare professional presents numerous challenges. Collaborating in healthcare goes beyond completing tasks or

tending to patients; it involves a collective effort influenced by how team members interact [11]. The social dynamics within the team are crucial, impacting responses to team members and potentially creating gaps in expertise due to perceived incompetence among members. Factors like professional roles, hierarchies, power dynamics, and organizational structures play into these dynamics [6]. Different roles within the team may lead to varying perceptions of power and foster hierarchy, which can impede collaboration. Additionally, certain terms, phrases, and stereotypes about team members, such as dismissing someone as "just a nurse," can quickly undermine teamwork and undervalue individual contributions [1]. These phrases can have a significant impact on the products of the team and the outcome of the patient. In addition to social dynamics, disciplinary boundaries also hinder effective teamwork in healthcare. These boundaries delineate divisions between different professional groups, such as physicians, nurses, social workers, and allied health professionals [8]. They arise from differences in training, language usage, as well as varying perspectives and goals in patient care, posing significant barriers to communication and care coordination. Having these boundaries impact the ability of the IP team to work together in a collaborative way.

To address these barriers to teamwork, several strategies have been proposed and studied. Promoting interprofessional communication is key, fostering mutual respect and understanding within teams. However, mastering this isn't something easily taught in a classroom; it often requires experiential learning or specialized training. Establishing a structured team framework and assigning significant roles to each discipline could also enhance collaboration [2]. Encouraging open dialogue among team members while challenging stereotypes and assumptions can further contribute to effective teamwork. Additionally, developing standardized

tools for assessing interprofessional collaboration and conducting further research into its impacts would deepen our understanding of its importance in healthcare.

Research Question

What do healthcare professionals and students think about interprofessional education and its translation into their practice?

Materials and Methods

Procedure

To begin this research project, survey questions were drafted based on concepts that were potentially impactful to a future in healthcare. These survey questions were further explored and reworked to be exactly what was intended and written in a way that would yield more consistent answers. Finally, the survey questions were edited to ensure that none of them overlapped or were written in a way that would decrease responses. The survey questions were not informed by the literature review as this process happened secondary to the creation of the survey. An additional source of data were the GOODLIFE Clinic field notes were provided by Dr. Barone form previous work in the clinic.

Survey

The Qualtrics survey tool available on the UNO IT Service website was utilized. The survey link was distributed via email to a list of personal contacts within the healthcare field. These personal contacts were from family, friends, past shadowing or volunteering connections for healthcare professionals. From this point on, snowball survey recruitment was employed to further expand participation. Original participants (n=12) were asked to send the survey to

anyone they know (n=17) who is also within any parts of the medical field. The survey remained accessible for two weeks in March before being closed.

The online survey is comprised of two paths based on the response to the initial question: "Are you currently enrolled as a student in a post-graduate professional school?" If the answer was no, respondents proceeded to a 15-question survey focusing on their experiences with IP relationships, IP education, training, and their impacts on healthcare. These responses and their results are under the category of post graduate professional results. If the answer was yes to the initial question, a 7-question survey was initiated, focusing on IP education and student interactions. The responses from this survey are categorized under the student results. The online survey results were collected through Qualtrics, the data was all online on the website then it was downloaded to excel in order to analyze and create the graphics later seen.

Fieldnotes & Interviews

Clinical field notes and interview information from the UNMC GOODLIFE Clinic were obtained and provided by Dr. Barone. The GOODLIFE clinic is a student-run free clinic at UNMC, where students from various healthcare disciplines collaborate and learn to work together. The students were interviewed during their time at the UNMC GOODLIFE Clinic, in between seeing patients and working on the interprofessional teams that the clinic is known for. Students were interviewed in groups and alone depending on the circumstances. Student responses were recorded by hand, typed up and provided in a printed format. For the current project, responses were categorized and analyzed in the same manner as the online survey and the results were added to the results tables when the topics and questions asked were aligned.

Analysis

Analysis began with the broad coding of responses from the online survey and GOODLIFE interviews. Responses to each question were examined for patterns, which were then categorized. The patterns that were created are in the comments under each graphic result in this paper and examples of phrases or wording are noted. The phrases and wording were examined to find these patterns which then guided the formation of broad codes, which were visualized through graphs. The graphics show trends and shared concepts between the post graduates and students of different healthcare professions. The data was then combined and the codes were compared again. The responses are broken up into the post graduate's vs the students within their specific fields of practice in order to get a better understanding of the thought processes occurring at different levels of education and in different professions.

Participants

The online survey participants include five different medical professionals and four different kinds of students in professional school with 29 total participants who answered the full survey. Survey responses were deleted if they were not completed in full. The table below indicates the breakdown of the survey participants with the number of responses and the year of their practice or in education.

The UNMC GOODLIFE Clinic Participants include six different professional and student specialties. The number of responses was counted per specialty but the year in education or practice was not asked. The students interviewed were present at the clinic by their choice and were questioned based on opportunity. Only one post graduate professional was interviewed and all the other participants were students. There are 50 participants in this part of the survey, including.

Results

Table 1. Survey participants (n=29) sorted by profession, including number of responses per profession and years of practice by each participant.

Post-Graduate Specialty (n=21)	Responses	Year Range of Practice			
Phlebotomist (PB)	1	1st – 5th Year			
Nurse Practitioner (NP)	2	1st – 5th Year	6th – 10th Year		
Certified Nursing Assistant (CNA)	5	1st – 5th Year x5			
Nurse (RN)	6	1st – 5th Yrs	6th – 10th Yrs	11th – 15th Yrs	16th + Yrs x3
Physician (MD)	7	1st – 5th Year x5		16th + Year x2	
Student Specialty (n=8)	**Responses**	**Year in Education**			
Physician Assistant (PA)	1	1st Year			
Speech Therapy (ST)	1	1st Year			
Occupational Therapy (OT)	2	1st Year x2			
Nursing (RN)	4	3rd Year x3 and 4th Year			

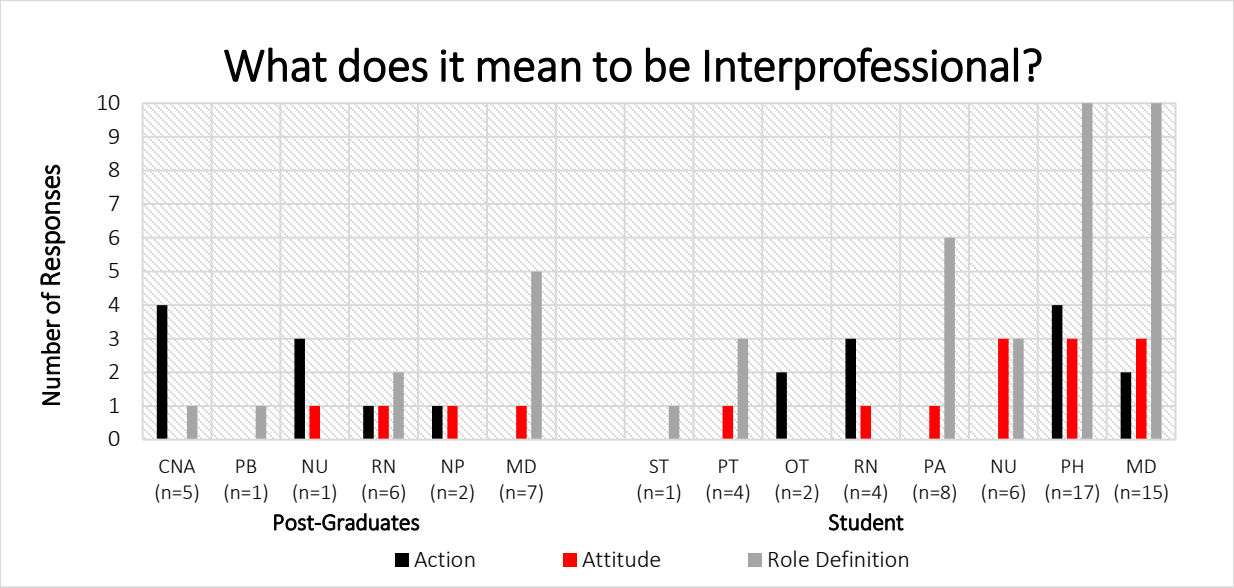
The most common respondent in the online survey was the physicians and the least common were the phlebotomist, physician assistant, and speech therapist. Participants currently working in their professional field outnumber students. There were 29 respondents to the full online survey.

Table 2. GOODLIFE Clinic participants (n=50) sorted by profession, student or post graduate and the number of responses per profession.

Medical Specialty & Student or Post-Graduate	Number of Responses
Nutritionist Post-Graduate (NU)	1
Physical Therapy Student (PT)	4
Nutrition Student (NU)	6
Physician Assistant Student (PA)	7
Medical Student (MD)	15
Pharmacy Student (PH)	17

The most common respondent category in the GOODLIFE Clinic data was pharmacy students, followed by medical students. The least common being a medical nutrition post graduate, a UNMC faculty member. There were 50 respondents in total.

Figure 1. Responses to the survey question and interview question; What does it mean to be interprofessional?



Abbreviation guide; CNA (Certified Nursing Assistant), PB (Phlebotomist), NU (Nutritionist), RN (Nurse), NP (Nurse Practitioner), MD (Medical Doctor), ST (Speech Therapist), PT (Physical Therapist), OT (Occupational Therapist), PA (Physician Assistant), PH (Pharmacist).

The three themes of responses found in **figure 1** include actions, attitudes and role definitions. Action means responses that include action words or phrases that refers to interprofessional behavior. An example of this is “Collaboration between disciplines to acknowledge patient needs, work on solutions to provide the best patient outcomes.” The next theme is Attitude, which combines responses that comment on attitudes or emotional phrases that arise from interprofessional interaction on the team; an example of this is “Working together to create better results, you can’t be an expert in everything.” The final theme is Role Definition which includes responses that incorporate what they believe to be the definition of

interprofessionalism; such as “To work together with other people that have different skill set for the benefit of the patient.”

A noticeable result of figure 1 shows pharmacy, medical students and physicians were more likely to respond in a similar way to this question vs the other two. This could be due to their similar training.

Table 3. Definitions of role on an interprofessional team (n=30).

Profession	Answer to “What is your role on an IP team?”
CNA (n=5)	To take vitals and help with patient cares, communicate information and patient changes to RN, assist others CNAs and other professionals as needed.
PB (n=1)	My role is to use my specific strength (taking labs) to contribute to overall effective patient care.
RN (n=6)	To recognize patient distress, advocate, inform other professionals, coordinate care, providing physician directed medical support.
NP (n=5)	To facilitate communication between physician and patient, reach out to other specialists when needed and provide education upon discharge.
MD (n=6)	To lead the inter professional team, listen to everyone’s opinions, advocate for the patients’ best options and lead in medical procedures and decision making.
MDS (n=7)	To lead, organize, coordinate tasks, manage the disorder, create the plan of care, and ensure the patient gets a balance perspective.

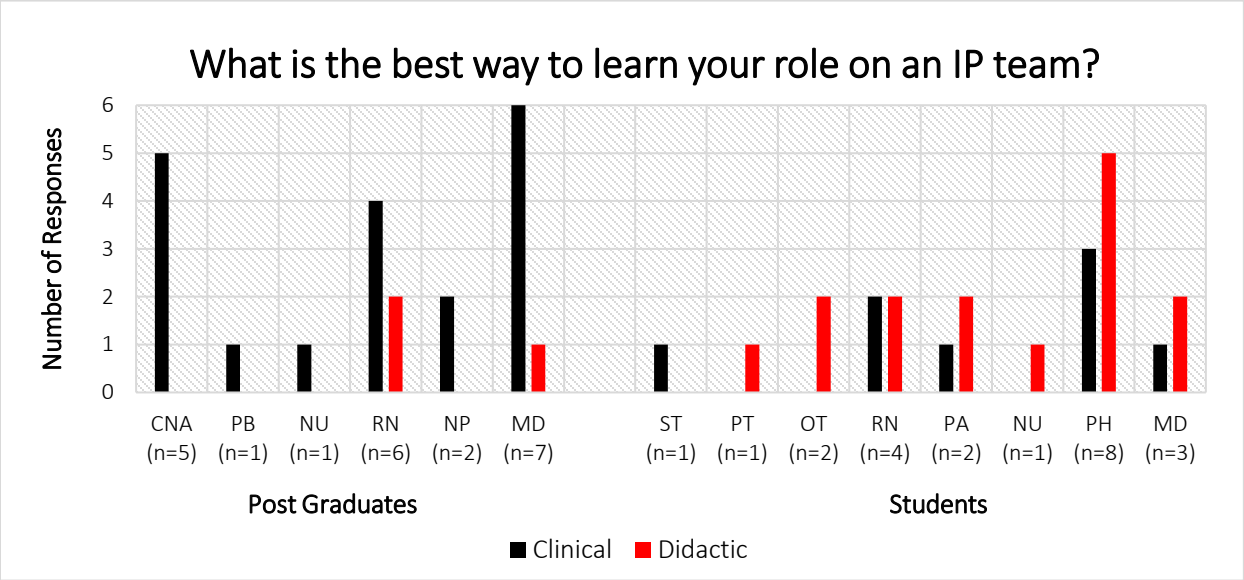
Abbreviation guide; CNA (Certified Nursing Assistant), PB (Phlebotomist), RN (Nurse), NP (Nurse Practitioner), MD (Medical Doctor), MDS (Medical Student).

The responses were collected, reviewed and common themes were combined to create one working definition of each profession’s role. The medical student responses came from GOODLIFE Clinic interviews while all other responses were from the survey.

Each profession differed in the ways that they incorporate IP into their responses, with the exception of the medical students. All seven medical students did not comment on IP duty in their role as a future physician, even while standing in a clinic that promotes interprofessionalism between healthcare workers and within teams. The differences between the different professions are also interesting. Each profession other than a physician talks about contributing or communicating information to the others while the physicians only talk about listening and then

leading the team, not communicating their findings with them. This was true in both the survey and interview samples.

Figure 2. Responses (n=44) to the survey question and interview question: What is the best way to learn your role on an IP team?

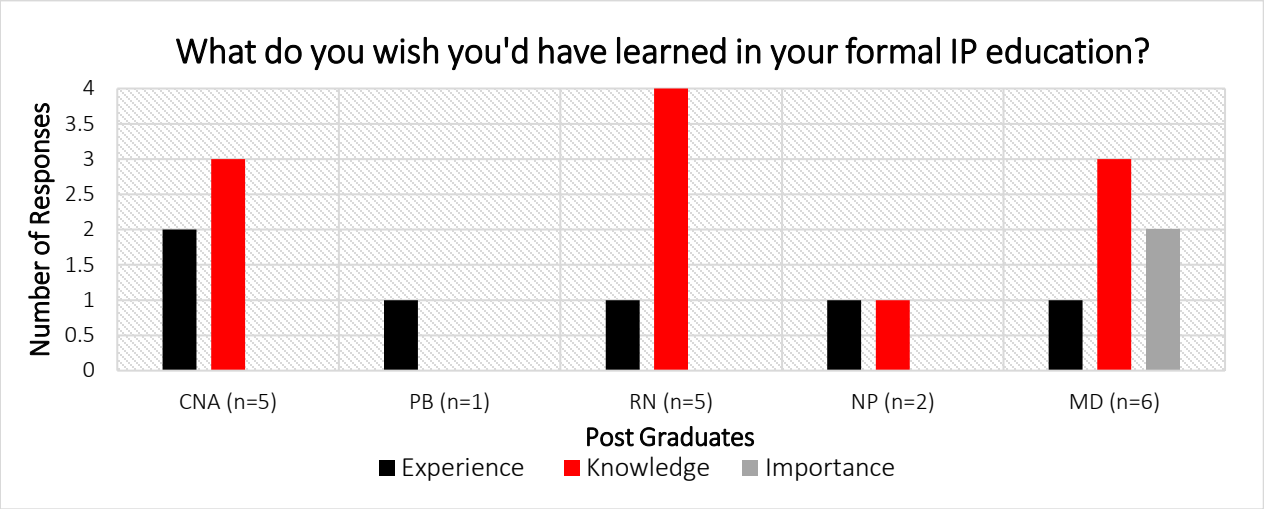


Abbreviation guide; CNA (Certified Nursing Assistant), PB (Phlebotomist), NU (Nutritionist), RN (Nurse), NP (Nurse Practitioner), MD (Medical Doctor), ST (Speech Therapist), PT (Physical Therapist), OT (Occupational Therapist), PA (Physician Assistant), PH (Pharmacist).

Responses were divided into two themes by educational location: Clinical and Didactic. Clinical refers to learning their role on a healthcare team through specific clinical experiences such as Modeling Behavior, Clinical Observation, and Constructive Feedback. While the theme of Didactic learning comes from learning one's role in the classroom through Lectures, In Person and/ or Online Training.

The post-graduates of this survey found it more beneficial to have clinical experiences to learn their roles as team members, while students felt the opposite. There were some students who thought clinical experiences would be more beneficial. However, the majority of the students' comments on didactic learning being potentially more important for learning their role.

Figure 3. Responses (n=19) to the question: What do you wish you would have learned from your formal IP education?

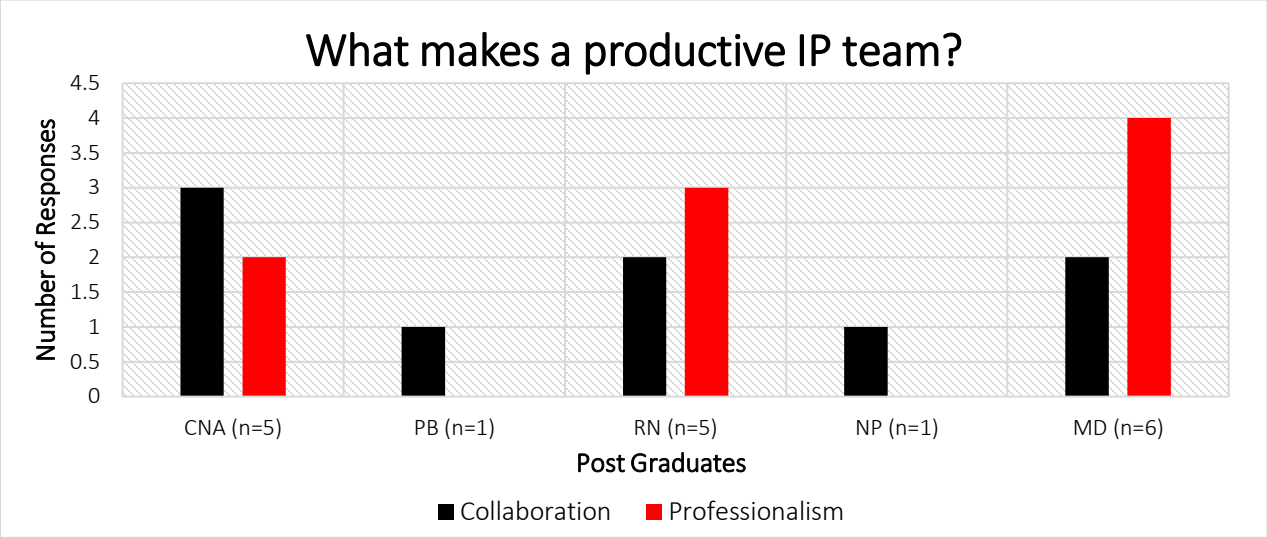


Abbreviation guide; CNA (Certified Nursing Assistant), PB (Phlebotomist), RN (Nurse), NP (Nurse Practitioner), and MD (Medical Doctor).

There are three themes in this graphic; Experience, Knowledge and Importance. The experience theme includes responses that indicate wishing they would have had more experience in certain areas of IP in order to be better prepared such as Scenario Training, Problem Solving, and Dynamic Healthcare Settings. The knowledge theme incorporates responses who wished they would have learned more about other health professionals and other aspects of their team and teamwork before their formal education was concluded such as Scopes of Practice, Profession Goals, and Communication/ Collaborative Techniques. The final theme is importance. This theme includes responses who wished they would have known the significance on interprofessionalism in healthcare before beginning their practice, examples responses like How IP can Help, its Impact on Patient Outcomes, and the Value of Leadership.

The most common answer was respondent reported desiring more knowledge about the other professionals, but the physicians also included that they would have liked to understand the importance of IP and leadership in a team before beginning their practice.

Figure 4. Responses (n=18) to the question: What makes an IP healthcare team productive?

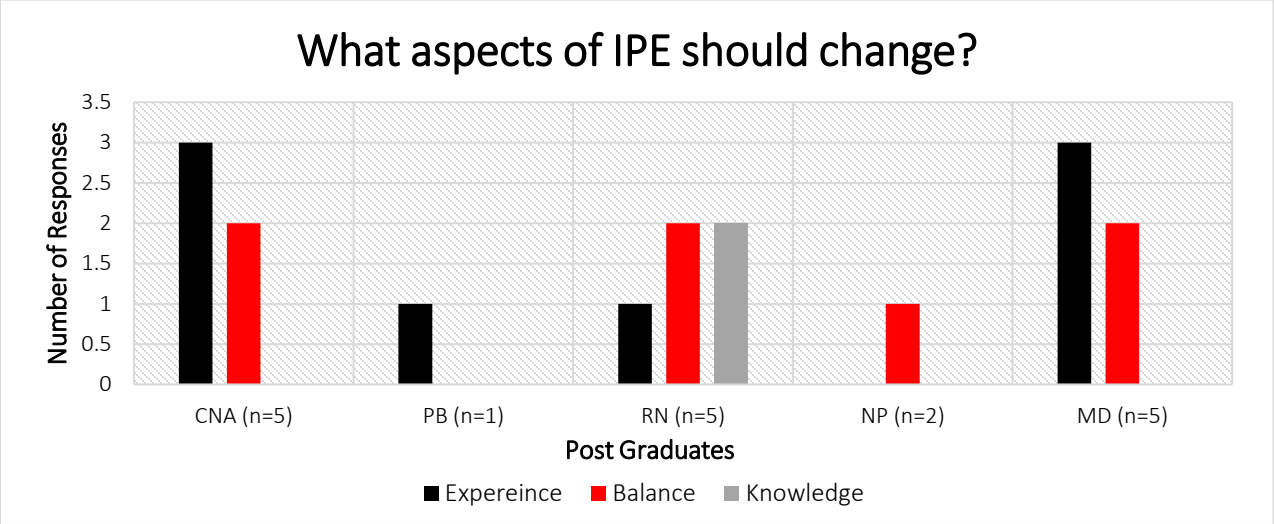


Abbreviation guide; CNA (Certified Nursing Assistant), PB (Phlebotomist), RN (Nurse), NP (Nurse Practitioner), and MD (Medical Doctor).

This graphic illustrates responses that fell into two themes: Collaboration and Professionalism. Collaboration includes responses consisting of concepts that help to make a group function more smoothly such as Communication, Teamwork, Open-mindedness, and Multidisciplinary Rounding on Patients. Professionalism on the other hand incorporates the importance of concepts like Respect, Responsibility, Understanding Others Role, Work Hard, and Cooperation and how they play a role in the team's ability to function.

These results are fairly split overall but professionalism is much more popular with the physicians than with any of the other post graduate professions. The nurses also agree that professionalism is important.

Figure 5. Responses (n=18) to the question: What are the aspects of IPE that should change?

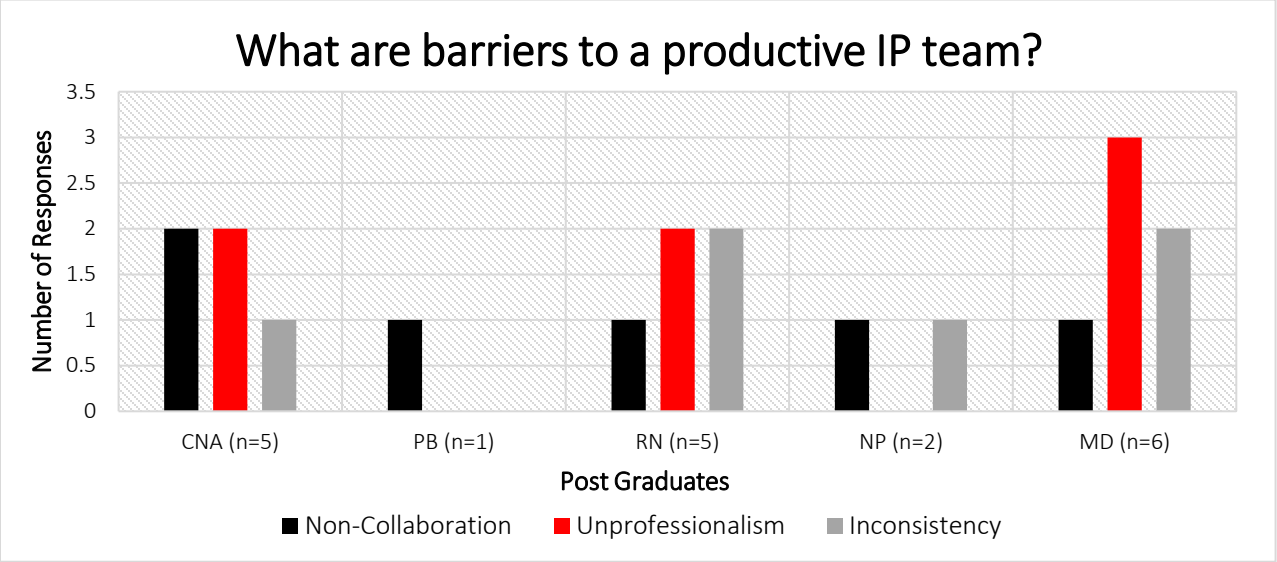


Abbreviation guide; CNA (Certified Nursing Assistant), PB (Phlebotomist), RN (Nurse), NP (Nurse Practitioner), and MD (Medical Doctor).

The three themes of these results include experience, balance and knowledge. Experience refers to a need for more training in IP in order for students to better understand the significance of IP in healthcare. Responses referred to Online Training, Realistic Training, Hands on Learning, and Integrate Aspects of Care. The second theme Balance refers to concepts of balancing the healthcare teams in a way that makes everyone's roles important and valued such as Ensure Respect, Enforce Collaboration, Equality in Team, and Eliminate God Complex. The final theme was Knowledge which refers to changes that should be made to increase the skills of professions to better work together in IP teams such as Mechanisms of Communication, and Knowing Others Scopes.

The nurses were the only group who indicate a need to change the actual provided during IP education, while the others answered more in terms of increase the experience of the students and secondly balancing the perceptions and importance of the teams.

Figure 6. Responses (n=19) to the question: What are barriers to a productive IP team?



Abbreviation guide; CNA (Certified Nursing Assistant), PB (Phlebotomist), RN (Nurse), NP (Nurse Practitioner), and MD (Medical Doctor).

The three themes of these results are non-collaboration, unprofessionalism and inconsistency. Non-collaboration includes responses that identify barriers to the collaborative abilities of the team such as Lack of Communication, and Not Taking Initiative. Unprofessionalism relates to barriers that impact the professionalism of the team and make it difficult to work professionally with all members of the team. For example, a Lack of Respect, Power Dynamics, Pulling Ranking, and Egos. The final theme is inconsistency which refers to fluctuating team compositions making it difficult to build relationships. This includes, Floating/ Travel Staff, Time Constraints, and Weekend Workers.

The results of this question are pretty divided between the professions; there seem to be a lot of opinions on what is causing barriers to productive teams.

Discussion

Pharmacy and Medical students as well as physicians describe being interprofessional as a role definition more than as an action or attitude (Figure 1). This could be due to more analytic training and perhaps less experience working alongside as opposed to supervising the work of other healthcare professionals. They seem to know what it means but don't think of experiences of interprofessional before thinking of their definition for the concept. Physicians describe their role on an IP team to be leading in decision making and procedures but also incorporates listening to others' opinions. Interestingly, a medical student definition does not incorporate any support from other professional on a team (Table 3).

The experiences of medical students in the sample varied depending on the year in their training. Early education is mostly didactic and does not include many clinical hours. Even in a clinical situation they are working directly under other physicians. The difference in this opinion of a role is indicative of inexperience and has potential to create a physician who does not work productively on an IP team. Other professions commented on their priorities in reporting accurate information to the team, communicating with patients and coordinating care procedures (Table 3), no other profession commented about being a leader of their team. An interesting trend emerged (Figure 2): post-graduates tend to prefer a clinical learning environment, while students lean towards a didactic one. This preference among students could potentially be attributed to their limited experience in clinical settings. Without significant experiences in a clinical setting, it is difficult to know which learning environment is more beneficial.

Most of the professions wished to have learned more about other professions scopes of practice. This includes what other professions goals are during a patient encounter. In addition, they wanted to learn techniques to improve communication and collaboration within their teams

(Figure 3). This is a common trend seen across all professions, indicating it could be something that is lacking in the formal education. Communication was identified as an important part of the interprofessionalism of a healthcare team. There are gaps in how to effectively communicate with others which education could help to remedy. Another interesting trend, is that physicians wanted to learn more about the importance of interprofessionalism, they wanted to learn about how it is helpful, its impact on patient care and what it means to be a leader on this type of team (Figure 3). As assumed leaders of IP teams in healthcare, there can be some additional stressors on physicians that may not be noticed or understood by others. Physicians and nurses indicated that are productive team requires professional qualities, such as respect, responsibility, cooperation while more certified nursing assistants indicated that they believed that collaboration, teamwork and communication, was a better indicator of a productive IP team (Figure 4). Differences in opinion here could be due to the differences in their roles on an IP team. Certified nursing assistants rely on others to help them with their tasks in patient care and often have to wait for others to do their jobs or come to help before they are able to completed tasks; while physicians possess the authority to do their tasks alone. Physicians and certified nursing assistants indicated in the same ratios that IPE should change first in terms of including more experience in training situations and in second through balancing respect and equity on IP teams (Figure 5). It's interesting to see that these two very different professions had the same ratios on what should be fixed in the IPE process. Nurses are the only profession which requested more knowledge of other professions being incorporated into IPE (Figure 5). This could be due to nurses being a bridge between many different professions and the patient to physicians.

Similarly to the responses of professionalism as an indicator of productive IP team, physicians responded that unprofessionalism was a barrier to productivity on such teams (Figure 6), nurses and certified nursing assistants agree less than half the time with this conclusion. Unprofessional behaviors included a lack of respect, pulling rank, inflated egos and power dynamics. All are indicative of struggles between professionals in a team setting. Finally, there were also comments on the inconsistency of healthcare due to traveling professionals and weekend shift takers (Figure 6), when the teams switch often it is more difficult to create a working relationship. Using Goffman's Theory of Impression Management, there could be an interesting exploration of why there are different barriers to a productive team that could stem from wanting to be seen as intelligent and never wrong. This theory explains that people want to make the best impression and when they are working in a team of their intellectual peers it can feel necessary to prove oneself. These barriers of non-collaboration, and unprofessionalism could be coming from the need to impress the team and be the one who solves the problem alone.

In conclusion, the results of this project indicate there are some very different and similar opinions on interprofessionalism and what it means to be IP on a healthcare team. Importantly, the professions agree on remedies that could further increase productivity. Practicing professionals have a more inclusive and appreciative understanding of interprofessionalism compared to students of the same specialties. This could be due to not enough exposure or training in these important relationships. It is important for students to have these experiences and learn the impact of IP collaboration on their patients but also future selves while practicing. The professionals are aware where they are lacking and understand the importance of interprofessionalism on their teams. This could be due to the nature of the survey, where professionals are able to think about the socially correct answers and respond accordingly.

Future Directions

Differences in opinions regarding IP education and training environments are evident based on the experiences of post-graduates and students, who have yet to undergo certain training environments. However, it's worth noting that some post-graduates did not receive detailed IP education, which is now common practice in educational facilities. In a future study, it would be helpful to have a much larger survey population to be able to better understand the trends of these questions on a more applicable scale. There could be trends that are not shown due to the low level of survey responses. It would also be valuable to observe IP interactions on healthcare teams as a way to learn more about genuine interactions between professionals.

For future research in this area, a prospective study could offer greater control by tracking IP education from didactic training, through clinicals, and into practice. This longitudinal approach would enable researchers to understand changes in attitude and the effects of IP education on future practice. Looking at training facilities who do and do not incorporate IPE could also be interesting and away to learn more about the impacts of IPE in school and in training on the future practices of professionals. Additionally, further investigation into successful practices within IP teams and strategies for replicating these positive effects in other contexts would be valuable.

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Appendix A- 15 Question Post Graduate Survey

1. Are you a current student in a post graduate school (student of MD, RN, PT, OT etc.)?
    a. Yes
    b. No
2. Medical Field Specialty?
    a. Physician and [Specialty]
    b. Nurse
    c. Physical Therapist
    d. Occupational Therapist
    e. Certified Nursing Assistant
    f. [Other]
3. Years practicing's in medical specialty?
    a. 1-5 years
    b. 6-10 years
    c. 11-15 years
    d. 16+ years
4. In healthcare, what does it mean to be interprofessional?
    a. [Free Response]
5. What is your role on an interprofessional team?
    a. [Free Response]
6. Please arrange the options in rank order of most helpful to least helpful in learning your role on an IP team.
    a. In lecture
    b. Clinical observations
    c. Modeling behavior
    d. Constructive feedback
    e. [Other]

7. What education have you received on collaboration with other professionals and was it helpful?
    a. Lectures
    b. Online training
    c. In person training
    d. IP days in school
    e. Constructive feedback
    f. Professional conferences
    g. Team meetings
    h. Hospital events
    i. Modeling others
    j. [Other]
8. Please arrange the options in most to least rank order of who should take lead in education future students on collaboration.
    a. Professors
    b. Preceptors
    c. Peers
    d. Hospital administration
    e. Charges/ Attendings
    f. [Other]
9. What do you wish you would have learned in your formal education about interprofessional collaboration?
    a. [Free Response]
10. What aspects of interprofessional education would you most line to change?
    a. [Free Response]
11. In your experience, how does the use of interprofessional teams impact patient care?
    a. [Free Response]
12. How has your experience in healthcare changed your views of the role on interprofessional teams?
    a. [Free Response]

13. What do you think makes a good interprofessional team?
    a. [Free Response]
14. How often does your interprofessional team meet your collaboration standards?
    a. Daily
    b. Weekly
    c. Bimonthly
    d. Monthly
    e. Rarely
15. What are barriers to achieving productive interprofessional collaboration?
    a. [Free Response]

Appendix B- 7 Question Student Survey

1. Year in professional school?
    a. [Free Response]
2. In healthcare, what does it mean to be interprofessional?
    a. [Free Response]
3. What education have you received on how to collaborate with other professionals and was it helpful for you?
    a. Lectures
    b. Online training
    c. In person training
    d. IP days in school
    e. Constructive feedback
    f. Professional conferences
    g. Team meetings
    h. Hospital events
    i. Modeling others
    j. [Other]

4. Please arrange the options in most to least rank order of who should take lead in education future students on collaboration.
    a. Professors
    b. Preceptors
    c. Peers
    d. Hospital administration
    e. Charges/ Attendings
    f. [Other]
5. What do you hope to learn in your formal education about interprofessional collaboration?
    a. [Free Response]
6. How often do you interact or work with students of other health professions?
    a. Daily
    b. Weekly
    c. Bimonthly
    d. Monthly
    e. Rarely
7. Is there a common space within your school where you are able to collaborate with other health profession students?
    a. Yes
    b. No