

Awareness regarding Inter Professional Education among final year medical, dental and nursing students

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1. INTRODUCTION

Today's patients have multifaceted health requirements and need more than one discipline to fulfill these needs (Robben, Perry et al. 2012). These complex health needs will be best met by the coordinated and collaborative involvement of a team of health professionals (Thistlethwaite 2012). A positive environment is guaranteed when different health care professionals work collaboratively to improve health care of patients. Students need to get the basic knowledge and skills

for collaborative practice during their training or professional education period. The students from different professions work together in a better way to improve the quality of health care services (Reeves, Perrier et al. 2013). Interprofessional education plays a significant role to develop to develop the abilities of nursing students and other professionals from disciplines (Darlow, Coleman et al. 2015).

Interprofessional education (IPE) is defined as a teaching and learning process between two or more professions that encourages cooperative work and expands quality of care (Keeler, Brennan et al. 2018). The Canadian Interprofessional Health Collaboration adds that IPE occurs when health care professionals learn collaboratively within and across different professions to acquire knowledge, skills and values for working in teams (Canadian Interprofessional Health Collaborative (CIHC), 2014). when students from two or more professions learn from and with each other achieve an effective level of collaboration and cooperation in health care practice (Reeves, Fletcher et al. 2016).

IPE is an important academic approach which prepares students for successful Interprofessional Collaboration, which is critical for patient safety and quality of care. Good communication between health care professionals will enhance the positive relationship between professionals and also help in quality treatment for patients. A greater understanding of multidisciplinary team roles and better communication not only improves the collaboration between team members but also enhances patient satisfaction (Steven, Howden et al. 2017).

IPE increases job satisfaction and decreases workplace tension and conflict. The importance of IPE came from health care team who needs to understand the role of other members from different professions. It is effective in teaching students the roles of other health care professions and changing students' attitude towards them by using appropriate

communication and conflict-management skills. IPE increases the relations and improves patient care through improved communications among team members (Darlow, Coleman et al. 2015).

There is a lack of purposeful alignment between education and healthcare delivery systems around the world (Cox, Cuff et al. 2016). Misunderstanding of interprofessional teamwork adversely influences the collaborative practice of health-care professionals in the field, which limits communication between the team members and the implementation of the treatment plan. may include These effects eventually lead to consequences such as decrease in patient satisfaction, a low level of professional work satisfaction, wasted resources, negative patient outcomes and the overall health outcomes (Al-Eisa, Alderaa et al. 2016).

Perceptions and attitudes are affective factors that contribute to the behavior of students regarding professional development education. IPE appears to be generally well received by preregistration students. Evaluations found that there is a positive effect of IPE on patient care, patient and family satisfaction, patient safety and error rates (Reeves, Perrier et al. 2013). This will lead to increases in knowledge and skills, improved student attitudes, clinical behavior and better patient care required for collaborative practice (Freeth, Savin-Baden et al. 2019).

Interprofessional attitudes and teamwork abilities are acquired and change over time (Darlow, Coleman et al. 2015). A previous systematic review of the effects of IPE has highlighted its role in improving professional attitudes to one another and increasing collaborative knowledge (Reeves, Perrier et al. 2013). IPE is a time taking activity which faces several barriers and challenges and demands full participation of the group which may not be possible all the time. Moreover, all students may not benefit by discussion-based learning. hence there should be

more of practical sessions for the students (Soubra, Badr et al. 2017).

2. LITERATURE REVIEW

Interprofessional education and interprofessional learning have received increased attention worldwide in the last decade as a number of patient and health services related problems may be improved by better collaboration between health professionals. This tendency for both healthcare professions and educations to work in silos makes collaboration between different professions a challenge (Samuelson, Tedeschi et al. 2012). Patient safety and quality of care would be improved if there was increased collaboration between healthcare professions (MacNaughton, Chreim et al. 2013).

Interprofessional Education is defined as a process wherein a group of students or health care workers from various professional background learn together for a defined period of time to collaborate in promoting promotive, preventive, curative, rehabilitative and other approaches related to health care system (Sunguya, Hinthong et al. 2014). In countries like Canada, UK, Sweden or Denmark joint faculties for Health Sciences have been offering interprofessional education for nearly twenty years, whereas in others it is only just evolving (Walkenhorst, Mahler et al. 2015). IPE is education specifically designed to help health professionals and students function as part of the healthcare team. It occurs when two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes. A study shows that IPE has also been found to have a positive effect on patient care, patient and family satisfaction, patient safety and error rates (Reeves, Perrier et al. 2013).

An observational study conducted which depicts that among 94 students, 75.5% had good perception, 23.4% had adequate level and 1% in Low level of perception towards IPE. The Interprofessional Education had significant effects toward the perception among the students. Students who have good perception and knowledge of IPE are able to develop their interprofessional relationship when they will work as health care professionals in future (Orbayinah and Utami 2015).

A study of the students' perspective on interprofessional learning showed that the attitude of students towards interprofessional learning and working, though becoming more negative throughout their education, was mainly positive. In general, the more mature and experienced students are more positive about interprofessional education than the younger ones. The authors also conclude that interprofessional education enhance collaboration and reduces stereotypes of different professions (Mahler, Schwarzbeck et al. 2018).

The results of a study showed that students considered IPE in primary healthcare is really very important. At the same time they found it difficult to collaborate in primary healthcare because the different professions did not work close to each other, and therefore it was difficult to get to know each other and begin collaboration (Tran, Kaila et al. 2018).

A survey was conducted of dental students in all four years from 2015 to 2017. In 2015, 120 students participated in the survey for a response rate of 46%, followed by 160 students in 2016 (62%) and 170 in 2017 (67%). The results showed that the first-year students in 2017 had a higher total mean score than the first-year students in 2015 and 2016. The difference was statistically significant. Even though the 2017 first-year students had only received an orientation to the curriculum at the time they completed the survey, this change in attitude suggests the new focus on IPE was already having an effect on

students. The study suggests that the new IPE curriculum that is now required of all students (Townsend, Zorek et al. 2018).

Another interesting finding reveals how the nature of the patients' healthcare problems affected the students' interest in IPE. The findings differ considerably from studies made in hospital settings where patients were sicker or perceived as having health problems of a higher urgency. Several studies have mentioned that chronically ill patients need collaboration (Abu-Rish, Kim et al. 2012). According to a study, 77.9% students states that patients will be benefited by collaborative care and 22% students feels that there is no benefit for the patients if the professionals are together (Fallatah, Jabbad et al. 2015).

Another study showed that interprofessional learning should be included in undergraduate courses. The best timing for IPE whether early in the students' education or later when they have formed their professional identities (Reeves, Fletcher et al. 2016). Interprofessional education is receiving increased attention worldwide. There is a need for improving interprofessional learning activities at this early stage of the program.

3. PROBLEM STATEMENT

Healthcare today is challenged by the aging population, chronic diseases and healthcare policy. The goal of high quality, cost effective and accessible care requires a competent workforce of healthcare professionals (Maharajan, Rajiah et al. 2017). Unfortunately, IPE is still in its early stages at many institutions in developing countries and there are fewer research studies from health care programs in developing countries as compared to those originating from developed countries. The importance of inter-professional education in

health professions training is increasingly recognized with the passage of time (Lie, Forest et al. 2016).

In the current global context, it is no longer enough for health professionals to be more professional; they also need to be inter-professional (Freire Filho, Costa et al. 2018). Inter-professional activities and opportunities should be offered to health professional students so that they will be able to expand their level of understanding and appreciation of other professionals. The education process of students increase their understanding about inter-professional teamwork should reflect positively on their future practice as a health care provider, and enhance the collaborative teamwork for optimal patient-centered health services (Soubra, Badr et al. 2017).

4. OBJECTIVE

The objective of the study is:

1. To assess the awareness regarding Inter Professional Education among final year medical and nursing students.

5. RESEARCH HYPOTHESIS

Null Hypothesis:

There is no background knowledge of Inter Professional Education among final year nursing and medical students.

Alternate Hypothesis:

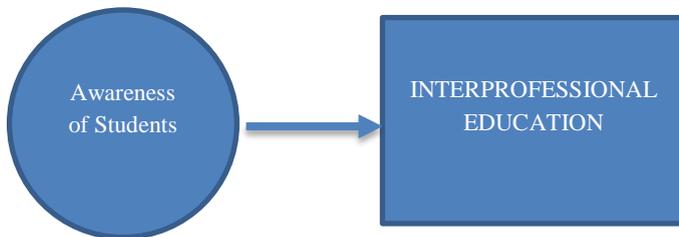
There is some background knowledge of Inter Professional Education among final year nursing and medical students.

6. SIGNIFICANCE

Students are the next generation of practical nurses so, for them it is very important that they have appropriate knowledge about nursing profession.

The study finding will help them to improve the awareness in future they will bring a change in the profession. The education process of students increase their understanding about interprofessional teamwork to reflect positively on their future practice as a health care provider, and enhance the collaborative teamwork for optimal patient-centered health services The study findings will help the in the advancement of nursing profession as more students will enroll in this profession and result in productivity of future nurses.

7. THEORITICAL FRAMEWORK



(Theory of planned behavior, 1980)

The Theory of Planned Behavior (TPB) started as the Theory of Reasoned Action in 1980 to predict an individual's intention to engage in a behavior at a specific time and place. The theory was intended to explain all behaviors over which people have the ability to exert self-control. The key component to this model is behavioral intent; behavioral intentions are influenced by the knowledge and attitude about the likelihood that the behavior will have the expected outcome.

7. OPERATIONAL DEFINITIONS

Awareness:

Information, knowledge or perception of final year medical and nursing students regarding Inter Professional Education.

Inter Professional Education:

Students from medical and nursing in health and social care learn together during final year training or educational period.

9. MATERIALS AND METHODS

Study Design:

A descriptive cross-sectional study was done.

Study Settings:

Study was conducted in the King Edward University Lahore, Pakistan.

Duration of Study:

Study was completed in 4 months from September 2018 to December 2018.

Target Population:

Target population of this research study was all the medical, dental and nursing students from the King Edward University Lahore.

Sample Size:

Sample size was 240 students from medical and nursing profession calculated by using solvin's formula.

Sampling Technique:

Random sampling technique was used.

Sample Selection:

Inclusion Criteria:

Following Students from the School of Nursing, Mayo Hospital Lahore and medical and dental department of King Edward University Lahore were included in data collection .

- General Nursing students (Final Year), MBBS students (Final Year) and Dental students (Final Year).
- Students who are willing to participate and present at the time of data collection.

Exclusion Criteria:

School of Nursing, Mayo Hospital Lahore and medical and dental department of King Edward University Lahore were excluded in data collection

- ECG Technicians.
- Students who are not available and not willing to participate.

ETHICAL CONSIDERATIONS

The rules and regulations set by the ethical committee of Lahore school of nursing, The University of Lahore will be followed while conducting the research and the rights of the research participants were respected.

- Written informed consent attached was taken from all the participants.
- All information and data collection were kept confidential.
- Participants were remain anonymous throughout the study.
- The subjects were informed that there are no disadvantages or risk on the procedure of the study.
- They were also be informed that they will be free to withdraw at any time during the process of the study.
- Data was kept in under key and lock while keeping keys in hand. In laptop it will be kept under password.

DATA COLLECTION PROCEDURE

First of all, an informed consent was taken from all participants. After obtaining formal written permission, participants of the study were requested to fill demographic portion of the structured questionnaire. This data was serve as basic information. Section B consists of 15 questions related to awareness of students about inter-professional education. The questions mentioned in the Appendix 1 was asked to the medical and nursing students during their final year through the questionnaire. The answers were marked according to their

knowledge. All the fifteen questions are of yes or no type. All questions and queries were clarified to the subjects.

DATA ANALYSIS:

Data was analyzed by using SPSS version 22.0 statistical software for data analysis.

- Demographic variables like age, gender, marital status, education etc. were analyzed by using descriptive statistics like frequency, percentage, mean and standard deviation. Percentages were calculated for categorical data while continuous data was analyzed through mean and standard deviation.

RESULTS

This study includes total 240 participants of medical, dental and nursing students from University of Lahore during their final year education. Among 80 students from each profession 37.5% interns and 62.5% final year from medical, 60% interns and 40% final year from dental and 100% final year from nursing ($p < 0.001$) participated in the study which is shown in table 1.

General awareness about Inter-professional Education in the population of 240 is 84.2%. Students were aware about the meaning of IPE and 15.8% were not aware about it completely. Among 84.2% students, 87.5% are from medical, 86.3% are from dental and 78.8% from nursing are aware about inter-professional Education ($p = 0.261$).

84.2% of the population think that IPE is essential in curriculum. In that population, 63.7% from medical, 75% from dental and 100% from nursing states that IPE is essential in curriculum ($p < 0.001$) and 83.8% from medical, 83.8% from dental and 98.8% from nursing think that it is essential especially during internship ($p = 0.002$).

61.3% medical, 62.5% dental and 97.5% nursing students think that it is important to be taught communication skills together with other professionals ($p < 0.001$) and 67.5% medical, 85% dental and 98.8% nursing students feels that communication skills that are related to patients safety should be taught together with other professional students ($p < 0.001$) and 62.5% medical, 81.3% dental and 90% nursing students think that patients will be benefited from effective treatment if the students learn together ($p < 0.001$).

Some of the students have a negative opinion on inter-professional Education. From the analysis, 63% medical, 63.7% dental and 32.5% nursing students feels that it is not necessary for the professionals to learn together ($p < 0.001$) and 52.1% from medical, dental and nursing students feels that IPE training is a waste of time ($p < 0.001$) and 50% of professionals thinks that it is difficult to adjust with other professionals during IPE training ($p = 0.259$).

In that population, 78.8% from medical, 85% from dental and 98.8% from nursing states that team work is essential in health care professionals ($p < 0.001$) and 75% from medical, 83.8% from dental and 93.8% from nursing think that IPE will help students to be a better team worker ($p = 0.005$).

Respecting other health care professionals is essential for IPE to be effective. In the population of 240, 85.4% students feels that respecting other disciplines make inter-professional training more effective. Among 85.4% students, 76.3% are from medical, 83.8% are from dental and 96.3% from nursing feels that respecting other disciplines make inter-professional training to be effective ($p = 0.001$).

In the population of 240, 56.3% from medical, 73.8% from dental and 97.5% from nursing states that learning clinical skills together will help in improving working environment ($p < 0.001$) and 53.8% from medical, 86.3% from

dental and 100% from nursing thinks that IPE in curriculum will help to improve working efficiency ($p < 0.001$).

According to this analysis, the awareness about and willingness to participate in IPE among students is discussed. In the population of 240, 75.8% students were interested to learn clinical skills with other health care disciplines. Among 75.8% students, 56.3% from medical, 73.8% from dental and 97.5% from nursing students were interested in active learning about clinical skills with other health care students ($p < 0.001$).

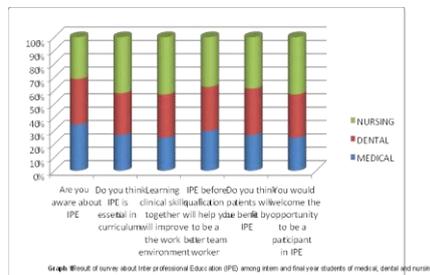
All data are collected and compared statistically and are tabulated in Tables 1. Graph 1 shows the differences between the participants from medical, dental and nursing students is significant according to chi-square test ($p < 0.05$).

Table 1: Comparison awareness across disciplines.

	Professions					
	Medical		Dental		Nursing	
	Yes	No	Yes	No	Yes	No
1. Are you aware about Inter-professional Education (IPE)	70(87.5%)	10(12.5%)	69(86.3%)	11(13.8%)	63(78.8%)	17(21.3%)
2. Do you think IPE is essential in curriculum?	51(63.7%)	29(36.3%)	60(75%)	20(25%)	80(100%)	0
3. Do you think that IPE is important during internship	67(83.8%)	13(16.3%)	67(83.8%)	13(16.3%)	79(98.8%)	1(1.3%)
4. Do you think learning with other health care students would be difficult to manage?	43(53.8%)	37(46.3%)	34(42.5%)	46(57.5%)	43(57.8%)	37(46.3%)
5. Do you think patients will ultimately benefit in health and social care if students learn together.	50(62.5%)	30(37.5%)	65(81.3%)	15(18.8%)	72(90%)	8(10%)
6. Is it important to be taught communication skills with other health care students?	49(61.3%)	31(38.8%)	50(62.5%)	30(37.5%)	78(97.5%)	2(2.5%)
7. Is it important to be taught some of the communication skills that are related to patients' safety's for all health care disciplines together.	54(67.5%)	26(32.5%)	68(85%)	12(15%)	79(98.8%)	1(1.3%)
8. Are teamwork skills vital for all health care students?	63(78.8%)	17(21.3%)	68(85%)	12(15%)	79(98.8%)	1(1.3%)
9. Learning clinical skills together before qualification will improve the work environment.	45(56.3%)	35(43.8%)	59(73.8%)	21(26.3%)	78(97.5%)	2(2.5%)

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10.	Respecting other health care students is essential for IPE to be effective.	61(76.3%)	19(23.8%)	67(83.8%)	13(16.3%)	77(96.3%)	3(3.8%)
11.	IPE for all health care disciplines is a waste of time.	61(76.3%)	19(23.8%)	49(61.3%)	31(38.8%)	15(18.8%)	65(81.3%)
12.	It is not necessary for one health care discipline to learn together with other health care disciplines.	53(66.3%)	27(33.8%)	51(63.7%)	29(36.3%)	26(32.5%)	54(67.5%)
13.	You would welcome the opportunity to learn clinical skills with other health care students.	45(56.3%)	35(43.8%)	59(73.8%)	21(26.3%)	78(97.5%)	2(2.5%)
14.	IPE before qualification will help you to be a better team worker.	60(75%)	20(25%)	67(83.8%)	13(16.3%)	75(93.8%)	5(6.3%)
15.	Do you think IPE in curriculum will improve your working efficiency during clinical practice and your professional career?	43(53.8%)	37(46.3%)	69(86.3%)	11(13.8%)	80(100%)	0



Figure#1: Comparison awareness across disciplines of medical dental and nursing

DISCUSSION

The aim of this study was to evaluate student's awareness about Inter professional Education Results demonstrated that most of the students have knowledge about interprofessional education. Interprofessional education is perceived positively by the students at this early stage in their studies and was associated with benefits and challenges. Whereas a study shows that the majority of our medical and nursing graduates do not understand about interprofessional education because the interaction between the medical and nursing student starts in

the obligatory internship year, immediately after graduation (Blue, Mitcham et al. 2010).

In a recent study by Norgaard et al. they found that inter professional Education will improve the communication between different professionals as well as between professional and the patients. Their result states that before training, clinicians were less confident in communication with other professionals and patients (Nørgaard, Ammentorp et al. 2012). Communication with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease. IPE increases the relations and improves patient care through improved communications among team members (Barwell, Arnold, & Berry, 2013). Furthermore, and similar to our student expectations, IPE has been shown to have a positive effect on patient care and outcomes and to influence the satisfaction of both patients and their families (Reeves, Perrier et al. 2013).

Several barriers to the effective implementation of IPE can be encountered at various levels including administration, faculty members and students. Rigid and overloaded curriculum is top barrier that effects the Interprofessional Education. Study shows similar findings that rigid curricula is the most common barrier. Lack of the perceived value of IPE, attitudinal differences in health professional's faculty members and students may greatly influence the implementation of IPE. Moreover, lack of resources and commitment can also negatively affect the implementation of IPE (Sunguya, Hinthong et al. 2014).

According to our study, most of the students were not aware about inter-professional Education initially. 84.2% students were aware about inter professional Education and its necessity in total of 240 population from medical, dental and nursing only after explaining about the importance of IPE.

According to a study results states that only 11.4% knew the meaning of IPE and 88.6% had no idea what IPE was among 107 participants. 75% responded that IPE is important that only a few students thought that IPE would be a waste of their time. Most of them agreed that IPE during the clinical years of education is essential (Fallatah, Jabbad et al. 2015).

The interaction with the future health professionals will help in developing good practices in a young professional. Students' knowledge about different professions within the multidisciplinary team increases which values improves the patient care management. Hence, inter-professional education is an effective way to improve student's awareness of the roles of other disciplines and to also teach the importance of teamwork and communication. if students from various professions learn and practice together, they work better in patient care and delivery of health care services.

CONCLUSION

The present study shows the awareness of final year students of medical, dental and nursing profession regarding interprofessional education. Most had previously heard of the concepts of IPE. However, some participants had only heard the terms once or not at all. Students are not fully familiar with Inter Professional Education. More awareness is required for them to better prepare them for future collaborative practice in real settings. IPE also proved to be of great significance for communication with the patients as it improves both patient care and health care providers' satisfaction. Students expressed interest in learning clinical skills alongside other health care disciplines during their final year education. Through this awareness students can be more empathic with other professions and seem to lose the fear of interacting and working

together as a team and ultimately improving health care outcomes.

REFERENCES

1. Abu-Rish, E., et al. (2012). "Current trends in interprofessional education of health sciences students: A literature review." *Journal of interprofessional care* **26**(6): 444-451.
2. Al-Eisa, E., et al. (2016). "The perceptions and readiness toward interprofessional education among female undergraduate health-care students at King Saud University." *Journal of physical therapy science* **28**(4): 1142-1146.
3. Blue, A. V., et al. (2010). "Changing the future of health professions: embedding interprofessional education within an academic health center." *Academic Medicine* **85**(8): 1290-1295.
4. Cox, M., et al. (2016). *Measuring the impact of interprofessional education on collaborative practice and patient outcomes*, Taylor & Francis.
5. Darlow, B., et al. (2015). "The positive impact of interprofessional education: a controlled trial to evaluate a programme for health professional students." *BMC medical education* **15**(1): 98.
6. Fallatah, H., et al. (2015). "Inter-professional education as a need: the perception of medical, nursing students and graduates of medical college at King Abdulaziz University." *Creat Educ* **6**: 248-254.
7. Freeth, D., et al. (2019). "14 Interprofessional Education." *Understanding medical education*: 191.
8. Freire Filho, J. R., et al. (2018). "Attitudes towards interprofessional collaboration of Primary Care teams

- participating in the 'More Doctors'(Mais Médicos) program." *Revista latino-americana de enfermagem* **26**.
9. Keeler, M. L., et al. (2018). "Inter-professional Education (IPE) and professional identity: Can students' reflective writings measure professional development?" *Pharmacy Education* **18**(1): 234-235.
 10. Lie, D. A., et al. (2016). "Interprofessional education and practice guide No. 5: interprofessional teaching for prequalification students in clinical settings." *Journal of interprofessional care* **30**(3): 324-330.
 11. MacNaughton, K., et al. (2013). "Role construction and boundaries in interprofessional primary health care teams: a qualitative study." *BMC health services research* **13**(1): 486.
 12. Maharajan, M. K., et al. (2017). "Attitudes and readiness of students of healthcare professions towards interprofessional learning." *PloS one* **12**(1): e0168863.
 13. Mahler, C., et al. (2018). "Students perception of interprofessional education in the bachelor programme "Interprofessional Health Care" in Heidelberg, Germany: an exploratory case study." *BMC medical education* **18**(1): 19.
 14. Nørgaard, B., et al. (2012). "Training improves inter-collegial communication." *The clinical teacher* **9**(3): 173-177.
 15. Orbayinah, S. and L. P. Utami (2015). "Students' Perception on Interprofessional Education." *International Journal of Public Health Science (IJPHS)* **4**(4): 284-287.
 16. Reeves, S., et al. (2016). "A BEME systematic review of the effects of interprofessional education: BEME Guide No. 39." *Medical Teacher* **38**(7): 656-668.
 17. Reeves, S., et al. (2013). "I." *Cochrane Database Syst Rev* **3**(3).

18. Reeves, S., et al. (2013). "Interprofessional education: effects on professional practice and healthcare outcomes (update)." *Cochrane Database Syst Rev* **3**(3).
19. Robben, S., et al. (2012). "Impact of interprofessional education on collaboration attitudes, skills, and behavior among primary care professionals." *Journal of Continuing Education in the Health Professions* **32**(3): 196-204.
20. Samuelson, M., et al. (2012). Improving inter-professional collaboration in Primary Care. Position Paper of the European Forum for Primary Care Quality, in «Primary Care.
21. Soubra, L., et al. (2017). "Effect of Interprofessional Education on Role Clarification and Patient Care Planning by Health Professions Students." *Health Professions Education*.
22. Steven, K., et al. (2017). "Toward interprofessional learning and education: Mapping common outcomes for prequalifying healthcare professional programs in the United Kingdom." *Medical Teacher* **39**(7): 720-744.
23. Sunguya, B. F., et al. (2014). "Interprofessional education for whom?—challenges and lessons learned from its implementation in developed countries and their application to developing countries: a systematic review." *PloS one* **9**(5): e96724.
24. Thistlethwaite, J. (2012). "Interprofessional education: a review of context, learning and the research agenda." *Medical education* **46**(1): 58-70.
25. Townsend, J., et al. (2018). "Developing Interprofessional Education at One US Dental School: Establishing a Baseline and Moving Forward." *Journal of dental education* **82**(5): 446-453.

26. Tran, C., et al. (2018). "Conditions for interprofessional education for students in primary healthcare: a qualitative study." *BMC medical education* **18**(1): 122.
27. Walkenhorst, U., et al. (2015). "Position statement GMA Committee—"Interprofessional Education for the Health Care Professions"." *GMS Zeitschrift für medizinische Ausbildung* **32**(2).