

Benefits of Interprofessional Education for Teamwork and Team-Based Practice: Major Stakeholders' Views in Bangladesh

Chowdhury MAU¹, Miah MA², Alam MKK.³ Hoque MM,⁴ Khan MKA,⁵ Akhter N⁶

Abstract

Background: Interprofessional education (IPE) is essential to prepare health professionals for working as a team in interprofessional teamwork and team-based practice. In this study, the views of major stakeholders are explored regarding the benefits of collaborative practice, which is promoted by interprofessional education.

Methods: The descriptive cross-sectional study was conducted in seven medical colleges, three nursing institutes, one health technology institute, several hospitals, and health complexes from July 2022 to June 2023. Data were conveniently collected from 273 intern doctors, 51 recent medical graduates, 153 nursing students, 71 senior nurses, and 104 health technologists with a semi-structured self-administered questionnaire.

Results: The study shows that the means of agreement between their views on different issues related to the benefits of working as a team in interprofessional team-based practice were within 81.6% to 91.2%. Although all the respondents were convinced about the benefits of interprofessional teamwork, the means of agreement of the intern doctors were statistically significantly lower than the means of agreement of other groups on all issues.

Conclusions: The study revealed that the majority of the intern doctors, recent medical graduates, nursing students, nurses, and health technologists acknowledged the benefits of IPE during their medical education, which would promote interprofessional teamwork and team-based practice.

Keywords: Interprofessional education, Interprofessional team work, Team-based practice, Collaborative practice, Health Professionals.

Introduction:

With advancing science and technology and improvement of the living standard of the people, today's health needs of the patients are complex and far different from the past.¹ Along with the increasing age of the population, social changes, increase in chronic disorders, health professionals are typically required

1. Md Ashraf Uddin Chowdhury, Assistant Professor, Cardiology, OSD DGHS, attached Center for Medical Education, Mohakhali, Dhaka
2. Md. Abdal Miah, Associate Professor of Curriculum Development & Evaluation, Center for Medical Education, Mohakhali, Dhaka
3. Md. Kazi Khairul Alam, Professor (CC), Teaching Methodology, Center for Medical Education, Mohakhali, Dhaka
4. Mohammad Mahabubul Hoque, Assistant Professor of Pathology, National Institute of Laboratory
5. Md. Kamrul Ahsan Khan, Assistant Professor, Neonatology, OSD DGHS, attached Center for Medical Education, Mohakhali, Dhaka
6. Najnin Akhter, Associate Professor, Anatomy, Brahmanbaria Medical College and Hospital, Brahmanbaria.

Correspondence to:

Dr Md Ashraf Uddin Chowdhury
MBBS, FCPS (Medicine), MD (Cardiology),
Assistant Professor, Cardiology, Center for Medical Education,
Mohakhali, Dhaka.
Email: ashraf_k45@yahoo.com

to provide a continuous and comprehensive health service to the patients who face complex disorders.² They usually require more than one discipline of health professionals to treat their different needs for better outcome. It is not possible for any one health professionals to address all the needs of a patient and provide continuous care. Poor communication and misunderstanding between different health professionals can result in adverse events and poor outcome in patients. Even though the doctors, nurses, physiotherapists, pharmacists or other health professionals work together, their courses are different, they are not aware of others training, knowledge, roles and responsibilities. So there is chance of miscommunication and poor understanding, lack of trust and mutual respect. All these adversely affect the patient outcome and satisfaction.¹

Interprofessional education (IPE) is an innovative approach to prepare health professionals students to provide health service in a collaborative team approach. WHO has defined IPE as "When students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes".² Interprofessional collaborative practice is defined as "When multiple health workers from different professional backgrounds work together with patients, families, careers, and communities to deliver the highest quality of care".² Interprofessional teamwork is "The levels of cooperation, coordination and

collaboration characterizing the relationships between professions in delivering patient-centered care”.³ Interprofessional team-based care is defined as “Care delivered by intentionally created, usually relatively small work groups in health care, who are recognized by others as well as by themselves as having a collective identity and shared responsibility for a patient or group of patients, e.g., rapid response team, palliative care team, primary care team, operating room team.”³

It is believed that once the health professionals begin to work as a collaborative team, patient care will improve. Interprofessional teams provide better quality of health service, reduce costs, reduce medical errors, decrease duration of stay in the hospital and improve patient satisfaction.³

The Institute of Medicine (IOM) stated that ‘health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team’.⁴ The IOM also described that when health care professionals work effectively in a team, communicate appropriately, and understand each other’s roles and responsibilities, patients would receive safer and high quality care.⁴

An interprofessional team consists of members from different health professions like doctors, nurses, physiotherapists, pharmacists, dieticians, dentists, social workers and so forth. The target of IPE is for the students to learn how to work effectively in an interprofessional team and continue this knowledge, skill, and attitude into their future journey, ultimately providing health service as part of a collaborative team and aims on improving patient outcomes.³

Widespread medical errors in American hospitals have been linked to significant levels of preventable mortality and morbidity, as well as serious quality problems, which have exposed flaws in the healthcare delivery systems.^{5,6} It is clear that the manner in which care is provided is just as crucial as the type of care provided. To reach a quality of care that is patient-centered, cost-effective, safer, quicker, and more effective, efficient, and equitable, it is essential to build an effective team and restructure the system.⁶

The Commission on Education of Health Professionals for the 21st Century⁷ released an analysis of the disjunctions between traditional health education and global health and health workforce needs. The commission proposed a series of recommendations to reform health professions education to enable a global health workforce that is more responsive to actual population and personal health needs adapted to local contexts. In this report there is strong integration of public health preparation in the education of future health care professionals. The “promotion of interprofessional and transprofessional education that breaks down

professional silos while enhancing collaborative and non-hierarchical relationships in effective teams” is one of the 10 recommendations by the commission for preparing future health professionals to address global health needs and strengthen health systems.⁷

In the context of improving institutional quality and safety, the focus on retraining of the workforce to build interprofessional teamwork and team-based care continues. The evidences support the importance of teamwork and team-based care and the competencies required to provide that kind of care.⁸

IPE is a novel approach in medical education of Bangladesh. Considering the importance of IPE for improving the standard of health service delivery, it should be incorporated and implemented in undergraduate and post graduate curriculum. But before that we need to assess the health professional stakeholders’ views regarding the usefulness of IPE.

The present study therefore seeks to find the views of the intern doctors, recent medical graduates, nursing students, nurses and health technologists of Bangladesh regarding benefits of working as a team in interprofessional teamwork and team-based practice which is facilitated by IPE.

Methods

This descriptive type of cross sectional study was conducted among 652 health professionals among them 273 were intern doctors, 51 recent medical graduates, 153 final year nursing students, 71 senior nurses and 104 health technology graduates. Data were collected from seven medical colleges, three nursing colleges, one health technology institute and several hospitals of Bangladesh, from 1st July 2022 to 30th June 2023. Convenience sampling techniques were adopted to select the respondents from medical colleges, institutes and hospitals. One self-administered semi-structured questionnaire constructed with a Likert scale was used for data collection. A 48-item questionnaire, adapted and modified from Readiness for Interprofessional Learning Scale (RIPLS)⁹ of Parsell and Bligh, was used in this multi-centre cross-sectional survey. Data were processed and analyzed by using computer software Statistical Package for Social Science (SPSS) version 25. This article represent a small section of a thesis work that was conducted for partial fulfillment of Masters in Medical Education (MMEd) degree under the Faculty of Basic Science & Para Clinical Science, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. This particular section explores the views of health professionals regarding the benefits of interprofessional education to facilitate working as a team in ‘Interprofessional Teamwork and Team-based Practice’.

Results

Among the 652 respondents, 230 (35.3%) were male and 422 (64.7%) were female. Mean age (\pm Standard deviations) of the participants was 26.58 (\pm 4.931) years. Median and mode were both 25 years. Most of them belonged to 21-30 years age group. Intern doctors were highest in number among the respondents followed by nursing students (Figure 1). Females are predominant in number among the nursing students and nurses.

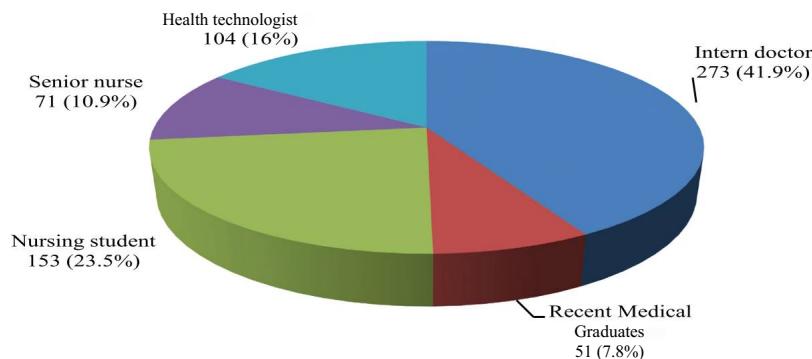


Figure 1: Distribution of respondents by their categories (n=652)

Table 1: Distribution of the respondents by their opinion regarding the benefits of working as a team in ‘Interprofessional Teamwork and Team-based Practice’

Statement related to benefits of working as a team in interprofessional team -based practice	Frequency (%) of level of agreement with corresponding score					Mean (\pm SD)
	SDA =1	DA =2	NANDA =3	A =4	SA =5	
Feaming with other students/ professionals will help me become a more effective member of a healthcare team (n=652).	8 (1.2)	9 (1.4)	59 (9.0)	300 (46.0)	276 (42.3)	4.27(0.780)
Working with students/health professionals from other disciplines will enhance my education (n=652).	7 (1.1)	10 (1.5)	53 (8.1)	300 (46.0)	282 (43.3)	4.29 (0.768)
Teaming with heath care students before qualification would improve working relationships. (n=652).	7 (1.1)	32 (4.9)	80 (12.3)	315 (48.3)	218 (33.4)	4.08 (0.863)
Shared learning will help me to think positively about other healthcare students (n=652).	5 (0.8)	12 (1.8)	67 (10.3)	309 (47.5)	257 (39.5)	4.23 (0.767)
Team - working skills are vital for all healthcare students/ professionals to learn (n=652).	3 (0.5)	9(1.4)	21 (3.2)	205 (31.5)	412 (63.4)	4.56(0.671)
Shared learning will help me to understand my own limitations (n=652).	3 (0.5)	12 (1.8)	43 (6.6)	322 (49.5)	270 (41.5)	4.30(0.713)
Shared learning with other healthcare students will help me to communicate better with patients and other professionals (n=652).	6 (0.9)	14 (2.1)	48 (7.4)	306 (46.9)	278 (42.6)	4.28 (0.768)

SDA: Strongly disagree = 1, DA: Disagree = 2, NANDA: Neither agree nor disagree =3, A: Agree=4, SA: Strongly Agree =5

The benefits of IPE in facilitating working as a team in ‘Interprofessional Teamwork and Team-Based Practice’ are shown in Table 1. It was found that the mean agreements on different issues related to the benefits of working as a team in interprofessional team-based practice were within 4.08 to 4.56 out of 5 point Fikert scale.

Table 2: Comparison of the views of the respondents regarding ‘Learning with other students/ professionals will help me become more effective member of a healthcare team’ (n=652).

	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	Df	P
Intern doctor	273	4.04	.828		Control group	
Recent medical graduate	51	4.49	.579	-3.712 *	322	.000
Nursing student	153	4.58	.665	-6.929 *	424	.000
Senior nurse	71	4.37	.567	-3.129 *	342	.002
Health technologist	104	4.23	.827	-1.997 *	375	.047

§ : Regular independent t tests were done to compare means due to presence of insignificant differences between variances of the comparative groups.

¥ : Welch independent t tests were done to compare means due to presence of significant differences between variances of the comparative groups.

In Table 2, the mean agreement of the intern doctors regarding how learning with others would help them become more effective members of a healthcare team was lower than the mean agreements of other groups of respondents, and these differences were statistically significant.

Table 3: Comparison of the views of respondents regarding ‘Working with students/health professionals from other disciplines will enhance my education’ (n=652).

	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	df	P
Intern doctor	273	3.94	.851		Control group	
Recent medical graduate	51	4.47	.542	-4.278 *	322	.000
Nursing student	153	4.67	.471	-11.43 8	423.94	.000
Senior nurse	71	4.49	.606	-5.130*	342	.000
Health technologist	104	4.40	.704	-4.934 *	375	.000

Symbols are same as table 2

Table 4: Comparison of the views of respondents regarding ‘Learning with health care students before qualification would improve working relationships’ (n=652)

	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	df	P
Intern doctor	273	3.89	.876		Control group	
Recent medical graduate	51	4.08	.796	-1.429 *	322	.154
Nursing student	153	4.40	.701	-6.160*	424	.000
Senior nurse	71	3.99	1.007	-.795*	342	.427
Health technologist	104	4.18	.833	-3.004 8	194.88	.003

Symbols are same as table 2

Table 5: Comparison of the views of respondents regarding ‘Shared learning will help me to think positively about other healthcare students’. (n=652)

	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	df	P
Intern doctor	271	4.03	.818		Control group	
Recent medical graduate	51	4.24	.815	-1.619*	320	.106
Nursing student	153	4.54	.550	-6.872 *	422	.000
Senior nurse	71	4.25	.731	-2.063 *	340	.040
Health technologist	104	4.28	.756	-2.657 *	373	.008

Symbols are same as table 2

Table 6: Comparison of the views of respondents regarding ‘Team-working skills are vital for all healthcare students/ professionals to learn’. (n=652)

	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	df	P
Intern doctor	273	4.31	.796		Control group	
Recent medical graduate	51	4.78	.415	-6.261 ⁸	130.91	.000
Nursing student	152	4.74	.442	-7.084 ⁸	422.99	.000
Senior nurse	70	4.79	.447	-6.592 ⁸	194.39	.000
Health technologist	104	4.69	.609	-4.966 ⁸	242.19	.000

Symbols are same as table 2

Table 7: Comparison of the views of respondents regarding ‘Shared learning will help me to understand my own limitations’. (n=652)

	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	df	P
Intern doctor	272	4.15	.786		Control group	
Recent medical graduate	51	4.39	.635	-2.038 [*]	321	.042
Nursing student	152	4.44	.638	-3.839 [*]	422	.000
Senior nurse	71	4.48	.557	-3.268 [*]	341	.001
Health technologist	104	4.30	.681	-1.642 [*]	374	.101

Symbols are same as table 2

Table 8: Comparison of the views of respondents regarding ‘Shared learning with other students will help me to communicate better with patients and other professionals’ (n=652).

	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	df	P
Intern doctor	273	4.11	.883		Control group	
Recent medical graduate	51	4.49	.579	-2.987 [*]	322	.003
Nursing student	153	4.45	.628	-4.679 ^s	400.63	.000
Senior nurse	71	4.37	.660	-2.318 [*]	342	.021
Health technologist	104	4.34	.691	-2.395 [*]	375	.017

Symbols are same as table 2

Similarly the mean agreements of the intern doctors were significantly lower than the means of agreement of other groups regarding six issues (table 3, table 4, table 5, table 6, table 7 and table 8).

Discussion

Working as a member of a team is essential for proper delivery of health care. Interprofessional education helps to work as a team member in interprofessional team. Any situation when health professionals connect with patients or communities to further shared healthcare objectives calls for teamwork behaviors. Cooperating in the patient-centered delivery of care, coordinating care with other health professionals to prevent gaps, redundancies, and errors, and working with others through shared problem-solving and shared decision-making, particularly in uncertain situations, are all examples of teamwork behaviors. These processes are a reflection of the growing interdependence within and between organizations and communities, as well as

within and between teams, micro-systems like hospital units, and individuals. Being a part of a system that is set up to share the care of an individual or a population is necessary to learning how to function in a team. Participation as a team member is determined by the additional value of the professional expertise that might influence the results of care in particular circumstances. Being a successful team member requires a thorough understanding of how team developmental processes can impact team members, overall team performance, and results of team-based care. In this article the respondents' views about benefits of working as a team in 'Interprofessional Teamwork and Team-based Practice' is explored.

In this study majority of the participants were intern doctors who have completed graduation recently and now working in hospitals along with many other health professionals (Figure 1). Among the participants, 64.7% were female. Table 1 demonstrated distribution of the respondents by their opinion regarding benefits of working as a team in 'Interprofessional Teamwork and Team-based Practice'. It was found that the mean agreement on different issues related to working as a team in 'interprofessional team-based practice' was within 4.08 to 4.56. Out of 5-point Likert scale the means of agreement of the stakeholders views on different issues related to benefits of working as a team in interprofessional team-based practice were within 81.6% to 91.2%. From these findings we can assume that the respondents are highly convinced regarding the benefits of working as a team member of an interprofessional team and collaborative practice. This benefit of working as a team is similar to the findings of a systematic review done by Dyess et al.¹⁰ In the study of Talukder et al. 90.7% of the respondents opined that IPE sessions would improve relationship among them; on the other hand we found 81.6% respondents agreed with this.¹¹ This difference may be due to small sample size (n=32) of the previous study of Talukder et al.¹¹

In a study at the University of Tsukuba, Maeno et al. concluded that, although the Japanese health care system and medical education are different from those of the western world, still the benefits of IPE will be similar in promoting teamwork and collaborative practice.¹ Meanwhile, in another study of Zaher et al. in UAE, they found the respondents were ready to accept IPE to improve teamwork, collaborative practice and professional identity, which is similar to our study.¹²

Table 2 shows comparison of the views of the respondents regarding 'Learning with other students/professionals will help me become more effective member of a healthcare team'. Although all five groups of respondents agree with this, the mean of agreement of intern doctors are significantly less than others.

Recent medical graduates, nursing students, senior nurses and health technologists considered working with students/health professionals from other disciplines would enhance their education but intern doctors are significantly less in agreement (Table 3).

Nursing students and health technologists are more in agreement than intern doctors, recent medical graduates and senior nurses regarding learning with health care students before qualification would improve working relationships (Table 4).

Intern doctors and recent medical graduates although agreed that shared learning would help to think positively about other healthcare students, but their means of agreement was significantly different than nursing students, senior nurses and health technologists (Table 5)

Although intern doctors considered that team-working skills are vital for all healthcare students/ professionals to learn, but their means of agreement were significantly less than other four groups (Table 6).

The means of agreement of intern doctors and health technologists regarding 'Shared learning will help me to understand my own limitations' are significantly less than recent medical graduates, nursing students and senior nurses (Table 7).

Intern doctors agreed that shared learning with other students would help them to communicate better with patients and other professionals, but the mean of agreement is significantly lesser than other four groups (Table 8).

From these findings it is evident that although all five groups of respondents agreed about the benefits of IPE to improve working as a team member in an interprofessional team, intern doctors are less convinced than others. In a study in Indonesia, Lestari et al. found medical students caused embarrassment and insecurity among other health professional students which reflected deeply ingrained societal views that doctors are superior to others. In that study nursing students were less in favour of IPE, while in our study we found that intern doctors are more reluctant about IPE.¹³

An initial Cochrane review on IPE in 2000 found no studies which met required inclusion criteria. But another Cochrane review in 2008, described 6 studies measuring the effectiveness of IPE with traditional health education on patient outcomes and professional practice. Four of the studies demonstrated positive outcomes on teamwork, patient satisfaction, error rates, mental health competencies or care delivered to domestic violence victims, while the other 2 found no significant impact on patient care or practice.⁸

IPE is meant to prepare the health professionals for effective interprofessional collaborative practice (IPCP) and teamwork in the context of an ever more complex healthcare system with changing demography and technological advances. Furthermore, the current challenges in health service show that successful IPE and IPCP are extremely required for high-quality healthcare. All the students and trainees in the health professions need to be prepared for the challenges of an interconnected and digital healthcare. Most of the participants of this current study in Bangladesh considered there would be benefits in working as an interprofessional team for providing health service through collaborative practice.¹⁴

Conclusion

Results of this study showed that the majority of the intern doctors, recent medical graduates, nursing students, nurses and health technologists acknowledged

the benefits of interprofessional teamwork and team-based practice which would be promoted by IPE sessions during their medical education.

Recommendation

From this study, it is recommended that IPE should be introduced for further improvement of health professional education and thereby health service.

Acknowledgements

The author is grateful to all the faculty members of Center for Medical Education, Dhaka for their valuable guidance throughout the entire research work and also thankful to all those who helped to complete the data collection procedures.

Ethical Clearance: the research protocol was approved by Institutional Review Board (IRB) of Center for Medical Education, Dhaka.

Funding Source: Self-funded

Conflict of Interest: None

References

1. Maeno T, Takayashiki A, Anme T, Tohno E, Maeno T, Hara A. Japanese students' perception of their learning from an interprofessional education program: a qualitative study. *International Journal of Medical Education*. 2013;4:9.
2. World Health Organization. Framework for action on interprofessional education and collaborative practice. World Health Organization; 2010.
3. Panel IE. Core competencies for interprofessional collaborative practice: Report of an expert panel. *Interprofessional Education Collaborative Expert Panel*; 2011.
4. Institute of Medicine (US). Educating for the Health Team: Report of the Conference on the Interrelationships of Educational Programs for Health Professionals, October 2-3, 1972. National Academies; 1972.
5. Havens DH, Boroughs L. "To err is human": a report from the Institute of Medicine. *Journal of pediatric health care*. 2000 Mar 1; 14(2):77-80.
6. Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st century. National Academies Press; 2001 Jul 18.
7. Frenk, J., Chen, L., Bhutta, Z.A., Cohen, J., Crisp, N., Evans, T., Fineberg, H., Garcia, P., Ke, Y., Kelley, P. and Kistnasamy, B., 2010. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *The lancet*, 376(9756), pp.1923-1958.
8. Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes. *Cochrane Database of systematic reviews*. 2013(3).
9. Parsell G, Bligh J. The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS). *Medical education*. 1999 Feb;33(2):95-100.
10. Dyess AL, Brown JS, Brown ND, Flautt KM, Barnes LJ. Impact of interprofessional education on students of the health professions: a systematic review. *Journal of educational evaluation for health professions*. 2019 Oct 23;16.
11. Talukder MH, Nuruzzaman M, Nargis T. Introducing interprofessional education to foster patient centred health care: A quasi experimental experience in Bangladesh. *Chattagram Maa-O-Shishu Hospital Medical College Journal*. 2016 Jul 17; 15(1):3-7.
12. Zaher S, Otaki F, Zary N, Al Marzouqi A, Radhakrishnan R. Effect of introducing interprofessional education concepts on students of various healthcare disciplines: a pre-post study in the United Arab Emirates. *BMC Medical Education*. 2022 Dec;22(1):1-4.
13. Lestari E, Stalmeijer RE, Widyandana D, Scherpbier A. Understanding students' readiness for interprofessional learning in an Asian context: a mixed-methods study. *BMC medical education*. 2016 Dec;16:1-1.
14. Käp-Frohlich S, Ulrich G, Wershofen B, Ahles J, Behrend R, Handgraaf M, Herinek D, Mitzkat A, Oberhauser H, Scherer T, Schlicker A. Position paper of the GMA Committee Interprofessional Education in the Health Professions-current status and outlook. *GMS journal for medical education*. 2022;39(2).