

Patient Outcome through Collaborative Practice in Interprofessional Education: Views of the Major Stakeholders' in Bangladesh

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Abstract

Background: Interprofessional collaborative practice is required to deliver the highest quality of care for a better patient outcome. Interprofessional education (IPE) builds the foundation for collaborative practice. In this study, the views of the major stakeholders in Bangladesh were explored regarding possible patient outcomes through collaborative practice, which is promoted by interprofessional education.

Methods: This descriptive cross-sectional study was carried out in seven medical colleges, three nursing institutes, one health technology institute, several hospitals, and health complexes from July 2022 to June 2023. A semi-structured self-administered questionnaire was used to conveniently collect information from 273 intern doctors, 51 recently graduated doctors, 153 nursing students, 71 senior nurses, and 104 health technicians.

Results: The study showed that the means of agreement of their views on different issues related to the patient outcome through collaborative practice were within 75.6% to 86.8%. Although majority of the respondents were convinced about the patient outcome benefits of collaborative practice, the means of agreement of the intern doctors were statistically significantly lower than means of agreement of other groups in different variables.

Conclusions: Results of this study showed that the majority of the respondents acknowledged that better patient outcomes are possible through collaborative practice, which could be promoted by IPE sessions during their academic years. From this study, it is recommended that IPE should be introduced for further improvement of health service delivery, patient satisfaction, and cost effectiveness.

Keywords: Interprofessional collaborative practice, Interprofessional education, Patient outcomes, Health professionals, Healthcare costs.

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Introduction

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Today's health service delivery is a complex process that aims at cure and prevention of the disease as well as health promotion, involving more than one health professionals. Patients' health needs are multiple and they require multi-professional collaborative care rather than mono-professional service. Patient outcome is better when they are served by an interprofessional team through a collaborative approach¹. An interprofessional team may consist of not only doctors but also nurses, physiotherapists, pharmacists, dieticians and many other health professionals. World Health Organization has defined interprofessional collaborative practice as 'when multiple health workers from different professional backgrounds work together with patients, families, caregivers, and communities to deliver the highest quality of care'¹. Interprofessional collaborative practice is possible on the foundation of mutual trust and respect, proper understanding of others' roles and responsibilities and acquisition of values and ethics of health profession which is facilitated by interprofessional education (IPE) during health education. 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'¹.

Health professionals' education is rapidly changing throughout the world. The doubling of life expectancy during the 20th century was possible due to improvements in living standards and to advances in knowledge. Widespread reforms in health professional education was initiated in the beginning of the 20th century by the reports of Flexner, Welch-Rose and Goldmark, which transformed education of physicians, public health workers, and nurses^{2,3}. Those reforms in the education of health professionals helped to catalyze improvement in health service in the past century.

However, in the 21st century, a lot of problems are seen to emerge in health service. Health systems are struggling to keep up with the changing demography, technology, people's expectations, and are becoming more complex and costly. In many countries, professionals are dealing with diverse patients with chronic conditions, who are more demanding in their health-seeking behavior. Patient management requires coordinated care demanding teamwork that was never

known before. Professionals have to integrate the latest knowledge and technologies with available resources to achieve better patient outcome³.

To deal with the situation, a new concept in health service delivery, that is patient-centered and team-based approach is introduced by several health authorities. Promotion of interprofessional and transprofessional education, which eliminates professional silos and improves collaborative and nonhierarchical connections in effective teams, is one of the reforms suggested by the Lancet commission.³

In Bangladesh there are many problems in collaboration between health professionals that adversely affect health service, such as, negative attitude, lack of communication, poor relationship, lack of mutual trust, disrespect, superiority complex, conflicting interest, power differentials and underestimation of other professionals. The hierarchical nature in our society is very much obvious. There is a large communication gap between the doctors and other health care professionals like nurses, health technologists, physiotherapists, pharmacists and dentists. Also there are issues of trust and respect. These factors adversely influence effective involvement of all team members and also

patient outcome. A collaborative effort of all healthcare professionals is a must for improvement of health service. We have a huge gap in collaborative team based practice due to this communication gap. Patient centered health care is a challenge to our health system. Lack of collaborative service as well as negative attitude and behaviors of doctors and nurses greatly contributes to patients' dissatisfaction. IPE and collaborative practice can play a significant role in reducing many of the challenges faced by our health system^{4,5}.

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 the benefits of collaborative practice for better patient outcome.

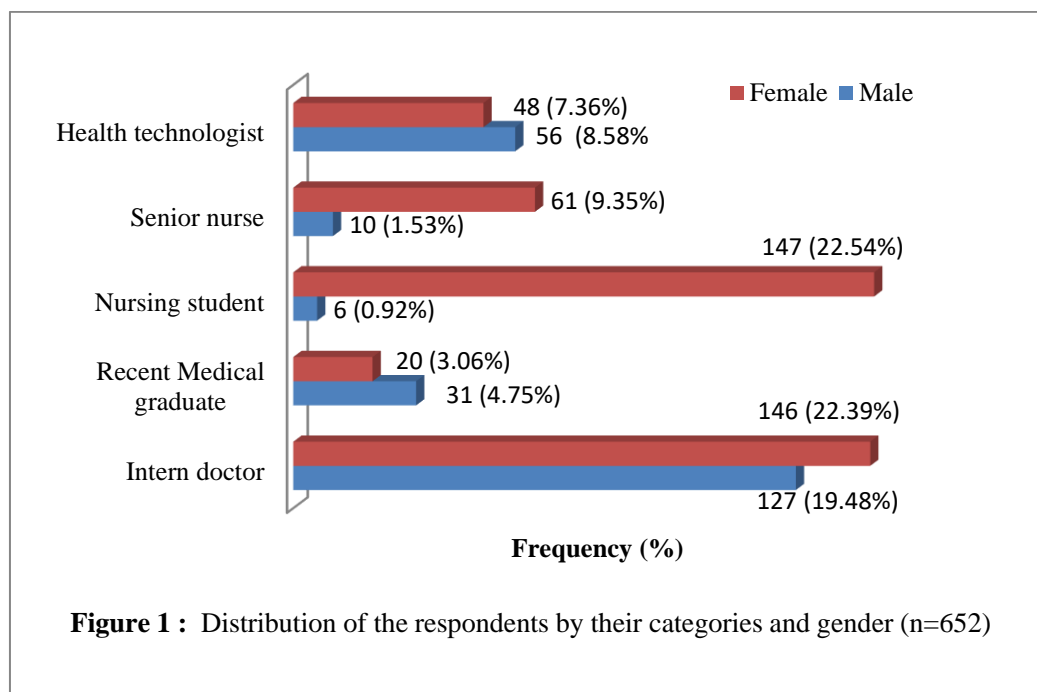
Methods

This descriptive type of cross-sectional study was conducted from July 1, 2022, to June 30, 2023, among 652 health professionals, including 273 intern doctors, 51 recent medical graduates, 153 final-year nursing students, 71 senior nurses, and 104 health technology graduates. Data were conveniently collected from the respondents at seven medical colleges,

three nursing colleges, one health technology institute, and several hospitals in Bangladesh. One self-administered semi-structured questionnaire constructed with a Likert scale, adapted and modified from the Readiness for Interprofessional Learning Scale (RIPLS) of Parsell and Bligh⁶, was used in this multi-center cross-sectional survey. Data were processed and analyzed using the computer software Statistical Package for Social Science (SPSS) version 25.

Results

Among the 652 respondents, intern doctors were the highest in number (41.87%), followed by nursing students (23.46%), health technologists (15.95%), senior nurses (10.88%), and recent medical graduates (7.82%) (Figure 1). The majority of the participants were female (422; 64.7%). The mean age (\pm standard deviations) of the participants was 26.58 (\pm 4.931) years. The median and mode were both 25 years old. Most of them belonged to the 21–30 age groups (Figure 2).



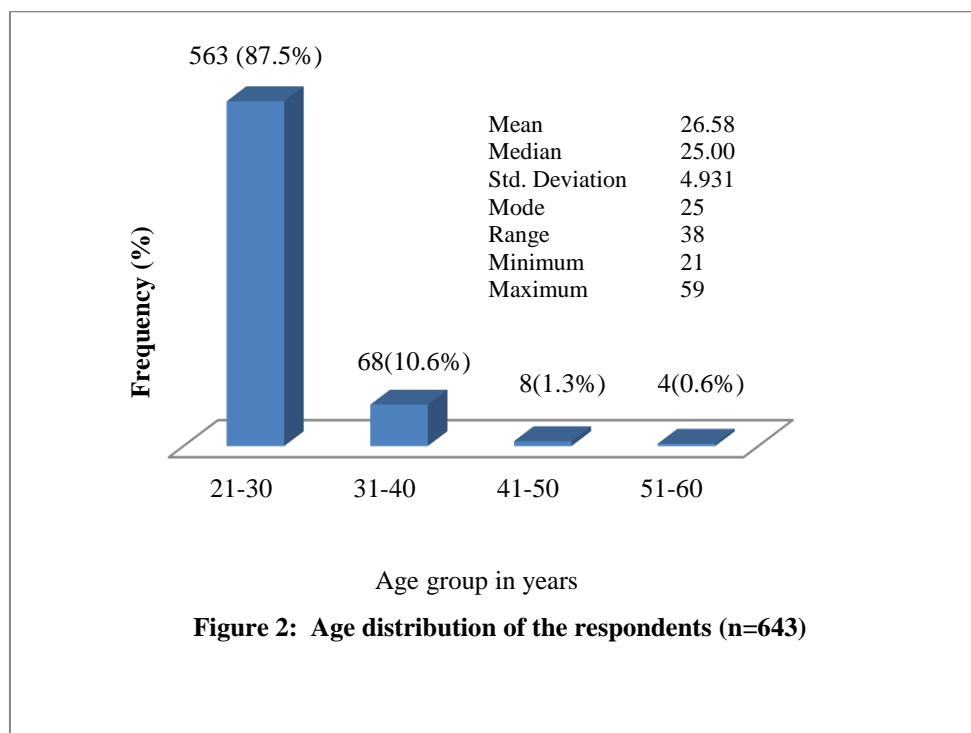


Table 1: Distribution of the respondents by their views regarding “Patient outcomes from collaborative practice”

Statement	Frequency (%) of level of agreement with corresponding score					Mean (±SD)
	SDA =1	DA =2	NANDA =3	A =4	SA =5	
Patient outcome is improved and they would be benefited when treatment is given by an interprofessional team. (n=650)	9 (1.4)	13 (2.0)	71 (10.9)	304 (46.8)	253 (38.9)	4.2 (0.815)
Patient satisfaction would be more when care is given by an interprofessional team. (n=650)	8 (1.2)	18 (2.8)	74 (11.4)	297 (45.7)	253 (38.9)	4.18 (0.832)
Healthcare cost would be reduced when treatment would be given by an interprofessional team. (n=650)	16 (2.5)	47 (7.2)	165 (25.4)	260 (40.0)	162 (24.9)	3.78 (0.983)
Patient/client-centeredness increases when care is delivered by an interprofessional team. (n=649)	7 (1.1)	23 (3.5)	116 (17.9)	334 (51.5)	169 (26.0)	3.98 (0.824)

Shared learning will help me better understanding the nature of patient problems. (n=645)	5 (0.8)	10 (1.6)	70 (10.9)	314 (48.7)	246 (38.1)	4.22 (0.758)
Patients would ultimately be benefited if healthcare students worked together to solve patient problems. (n=640)	6 (0.9)	11 (1.7)	47 (7.3)	269 (42.0)	307 (48.0)	4.34 (0.767)

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

The views of the respondents regarding possible benefits of IPE in promoting patient outcomes from collaborative practice are shown in Table 1. It was found

that the mean agreement on different issues related to the “patient outcomes from collaborative practice” were within 3.78 to 4.34 out of 5 point Likert scale.

Table 2: Comparison of the views of respondents regarding ‘Patient outcome is improved and they would be benefited when treatment is given by an interprofessional team’. (n=650)

Categories of respondents	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	Df	P value
Intern doctor	271	3.99	0.876		Control group	
Recent medical graduate	51	4.24	0.907	-1.83 [¥]	320	0.068
Nursing student	153	4.33	0.733	-4.04 [¥]	422	0.000
Senior nurse	71	4.34	0.844	-3.01 [¥]	340	0.003
Health technologists	104	4.44	0.537	-4.93 [¥]	373	0.000

[§]: 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 agreements of the intern doctors and recent medical graduates regarding improved patient outcome when

treatment is given by an interprofessional team was lower than the mean agreements of nursing students, senior nurses, and health technologists, and these differences were statistically significant.

Table 3: Comparison of the views of respondents regarding ‘Patient satisfaction would be more when care is given by an interprofessional team’. (n=650)

Categories of respondents	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	Df	P value
Intern doctor	271	3.96	.851	Control group		
Recent medical graduate	51	4.31	.812	-2.72 [¥]	320	0.007
Nursing student	153	4.32	.824	-4.20 [¥]	422	0.000
Senior nurse	71	4.31	.872	-3.04 [¥]	340	0.003
Health technologists	104	4.40	.631	-4.79 [¥]	373	0.000

Symbols are same as table 2

The mean agreements of the intern doctors regarding patient satisfaction when treatment is given by an interprofessional

team was lower than the mean agreements of other four groups and these differences were statistically significant (Table 3).

Table 4: Comparison of the views of respondents regarding ‘Healthcare cost would be reduced when treatment would be given by an interprofessional team’. (n=650)

Categories of respondents	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	Df	P value
Intern doctor	271	3.79	.992	Control group		
Recent medical graduate	51	3.57	1.082	1.42 [¥]	320	0.158
Nursing student	153	3.54	.966	2.45 [¥]	422	0.015
Senior nurse	71	4.08	.952	-2.28 [¥]	340	0.023
Health technologists	104	3.99	.853	-1.98 [§]	215.41	0.049

Symbols are same as table 2

The mean agreements of the intern doctors and recent medical graduates regarding healthcare costs would be reduced when treatment is given by an interprofessional

team were statistically significantly different than the mean agreements of nursing students, senior nurses, and health technologists (Table 4).

Table 5: Comparison of the views of respondents regarding ‘Patient/client-centeredness increases when care is delivered by an interprofessional team’. (n=649)

Categories of respondents	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	Df	P value
Intern doctor	271	3.91	0.793	Control group		
Recent medical graduate	51	3.94	0.835	-0.24 [¥]	320	0.808
Nursing student	152	3.96	0.853	-0.59 [¥]	421	0.553
Senior nurse	71	4.07	1.060	-1.18 [§]	91.54	0.241
Health technologists	104	4.13	0.639	-2.57 [¥]	373	0.011

Symbols are same as table 2

In this table 5, the mean agreement of the intern doctors about patient/client centeredness, is not statistically significantly different than the mean

agreements of recent medical graduates, nursing students, and senior nurses; while the mean agreement of health technologists is higher and statistically significant.

Table 6: Comparison of the views of respondents regarding ‘Shared learning will help me better understanding the nature of patient problems’. (n=645)

Categories of respondents	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	Df	P value
Intern doctor	266	4.00	.892	Control group		
Recent medical graduate	51	4.25	.627	-1.92 [¥]	315	0.056
Nursing student	153	4.44	.637	-5.29 [¥]	417	0.000
Senior nurse	71	4.25	.603	-2.23 [¥]	335	0.027
Health technologists	104	4.40	.531	-5.30 [§]	309.42	0.000

Symbols are same as table 2

The mean agreements of the intern doctors and recent medical graduates regarding better understanding of the nature of patient problems, was lower than the mean

agreements of nursing students, senior nurses, and health technologists, and these differences were statistically significant (Table 6).

Table 7: Comparison of the views of respondents regarding Patients would ultimately be benefited if healthcare students worked together to solve patient problems. (n=640)

Categories of respondents	Descriptive statistics			Inferential statistics		
	N	Mean	Std. Dev.	Statistic (t)	Df	P value
Intern doctor	262	4.04	0.926	Control group		
Recent medical graduate	51	4.41	0.638	-2.756 [¥]	311	0.006
Nursing student	153	4.59	0.507	-7.819 [§]	411.54	0.000
Senior nurse	70	4.57	0.527	-4.621 [¥]	330	0.000
Health technologists	104	4.57	0.553	-6.713 [§]	308.66	0.000

Symbols are same as table 2

The mean agreements of the intern doctors regarding how patients would ultimately benefit if healthcare providers worked

together to solve patient problems were lower than the mean agreements of the other four groups, and these differences were statistically significant (Table 7).

Discussions

The World Health Organization and its collaborators acknowledge, after almost 50 years of thorough research, that there is enough evidence to claim that successful interprofessional education promotes effective collaborative practice.

Collaboration enhances health outcomes and fortifies health systems.¹ IPE enables students from different health professions the opportunity to learn with, from and about each other’s profession, thus safely promote the collaboration skills students require in their later profession. Health professionals who were trained to

collaborate as a team in interprofessional educational setting during their student years are far more likely to be effective collaborators in their future professional clinical setting⁷. This study explores the views of the doctors, nurses and health technologists of Bangladesh regarding possible benefits of IPE in promoting patient outcomes from collaborative practice.

In this study, majority of the respondents were female (64.7%) and they were predominant among the nurses. Most of the participants (87.5%) belonged to 21-30 years age group, which reflect the views of a younger generation. Only 0.6% senior nurses were in 51-60 years age group (figure 2). The mean agreement of stakeholders views (Table-1) on different issues related to the “Patient Outcomes from Collaborative Practice” were within 75.6% to 86.8%. From these findings we can assume that the respondents believe patients’ outcome would be improved, they would be more satisfied, healthcare cost would be reduced and patient centeredness would be improved with collaborative practice facilitated by IPE. Respondents would understand patient’s problem more and they would be ultimately benefited from collaborative practice. These findings are similar to the results of a meta-analysis done by Guraya and Barr.⁷ Better patient outcome from collaborative practice is supported by other studies done by Illingworth and Chelvanayagam⁸.

Table 2 analyzes the comparison of the views of respondents regarding ‘patient outcome is improved and they would be

benefited when treatment is given by an interprofessional team’. Although all of the respondents agreed with this, but the mean of agreement of recent medical graduates have no significant difference from the intern doctors while the means of nursing students, nurses and health technologists are significantly different. This reflects intern doctors and recent medical graduates are less in agreement than others about the benefits of IPE. There is significant difference in means of agreement of intern doctors from all other participants regarding ‘patient satisfaction would be more when care is given by an interprofessional team’. It shows intern doctors are less convinced than others about patient satisfaction of an interprofessional team approach (Table 3). The intern doctors although agreed about reduction in healthcare cost when treatment is given by an interprofessional team, but the mean of their agreement is significantly different from the means of nursing students, nurses and health technologists (Table 4). The means of agreement of recent medical graduates, nursing students and nurses regarding ‘patient/client-centeredness increases when care is delivered by an interprofessional team’ have no significant difference from the intern doctors (Table 5). Although all the respondents agreed that shared learning would help them to better understand the nature of patient problems, intern doctors and recent medical graduates are significantly less in agreement than the nursing students, nurses and health technologists (Table 6). All five groups of respondents agreed that patients would ultimately benefit if healthcare providers worked together to solve patient problems,

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but intern doctors are significantly less in agreement than others (Table 7).

In this study, it is evident that the majority of the intern doctors, recent medical graduates, nursing students, nurses, and health technologists consider that IPE during undergraduate education would improve their collaborative working skills, which can ultimately benefit the patient outcome, although intern doctors are relatively less convinced and reluctant than others. In the study of Lestari et al., they found that although the majority of the participants believed IPE would improve collaboration and patient outcomes, some of them had a negative perception. Mainly the nursing students were less in favour of IPE in that study, which is not similar to our study; we found doctors are less in favour of IPE⁹.

In a Cochrane review report, seven of the 15 studies included that satisfied the criteria for inclusion indicated good results for healthcare processes, patient outcomes, or both. Four studies showed mixed (positive and neutral) results, while four studies revealed no impacts of IPE. Despite the fact that some favorable results were reported by these researches, it was impossible to make conclusions regarding the essential components of IPE and its efficacy due to the small number of studies and the heterogeneity of the interventions and outcome measures¹⁰.

In clinical practice adverse outcomes may arise from a series of seemingly trivial errors that effective teamwork could have prevented. Being a part of a small, intricate 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. Working in teams involves sharing one's expertise and relinquishing some professional autonomy to work closely with others, including patients and communities, to achieve better outcomes. Shared accountability, shared problem-solving, and shared decision are characteristics of collaborative teamwork and working effectively in teams. Valuing working with others to deliver patient-centered care that is community/ population-oriented, being clear about one's own and others' roles and responsibilities, and practicing interprofessional communication contribute importantly to teamwork behaviors and effective team functioning.

Improved interprofessional teamwork and team-based care play core roles in many of the new primary care approaches. The concept of primary care and how it relates to the larger context of health are being reexamined. First, in primary care there is a focus on expanded accountability for population management of chronic diseases that links to a community context. Second, health care delivery professionals jointly with public health professionals share roles and responsibilities for addressing health promotion and primary prevention needs related to behavioral change. Third, health care professionals and public health professionals work in collaboration with others on behalf of persons, families and communities in maintaining healthy environments, including responding to public health emergencies. All of these elements link direct health care professionals more closely with their public health colleagues. Therefore, the principles

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of collaborative practice included both patient-centeredness and a community/population orientation¹¹.

Conclusion

Results of this study showed that the majority of the intern doctors, recent medical graduates, nursing students, nurses, and health technologists believed that better patient outcomes were possible through collaborative practice, which could 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 service delivery, patient satisfaction, and cost effectiveness.

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