






Investigation the Attitude of Professors of Shahid Beheshti University of Medical Sciences Towards the Necessity of Implementing Interprofessional Education in 2022

Hashem Khoshbakht ^{1,*}, Soleiman Ahmady ¹, Amin Habibi ²

¹ School of Medical Education and Learning Technologies, Shahid Beheshti University of Medical Sciences, Tehran, Iran

² Department of Medical Education, Smart University of Medical Sciences, Tehran, Iran

*Corresponding Author: School of Medical Education and Learning Technologies, Shahid Beheshti University of Medical Sciences, Tehran, Iran. Email: hashemkhoshbakht@gmail.com

Received: 3 July, 2024; Revised: 27 October, 2024; Accepted: 4 November, 2024

Abstract

Objectives: This research aims to study the attitude of Shahid Beheshti University of Medical Sciences towards the necessity of implementing interprofessional education (IPE) in 2022. Professors' research was applied in terms of purpose and descriptive in terms of type.

Methods: Considering that the target population is around 2500 people, using Sullivan's formula with a 5% margin of error and a 95% confidence level, the predicted total sample size was 333 people. Sampling was done using cluster and random methods. The study tool included a demographic information questionnaire and a professor attitude questionnaire towards IPE. Data were collected using a standard questionnaire. Out of a total of 330 people selected in the sampling, 138 people completed the questionnaire on Porsline software platform, and 180 completed the questionnaire by visiting in the Porsline. A total of 318 questionnaires were collected. For data analysis, the questionnaire data was entered into SPSS software.

Results: The results of descriptive statistics showed that out of 318 professors, 113 have clinical medicine specialties, 26 have medical and health education specialties, 47 have nursing specialties, 72 have basic medical science specialties, 45 have health specialties, and 15 have health specialties. They managed healthcare services. Most of the professors had clinical medical specialties. But in terms of age, the dispersion of people is more, 40.3% of them who are 50 - 60 years old constitute their dominant population. Also, the results of inferential statistics showed that the attitude questions have a significance coefficient of less than 0.05%, which indicates the significant positive attitude of professors in IPE.

Conclusions: Research has shown that professors of Shahid Beheshti University of Medical Sciences, on the whole, have a positive attitude towards IPE. The positive effect of IPE in improving the attitude of students towards learning and the need for interprofessional cooperation in the health system indicates the availability and essential and motivational background ideal attitude for the integration of IPE in health sciences. For this purpose, managers should aim to plan and implement IPE in the country's health education system in order to employ capable and talented workforces to respond to the health and hygiene needs of the current and future generations.

Keywords: Education, Interprofessional, Professors' Attitude

1. Background

Generally, a team of different health professionals provides healthcare (1). Our health professions are taught separately, with longstanding inter-professional and intraprofessional rivalries. Most faculty members teach in a closed environment and are not well-prepared to teach skills that promote multidisciplinary collaboration and shared decision-making (2). When

multiple professions learn from and alongside one another, interprofessional education (IPE) takes place, facilitating effective cooperation and enhancing health outcomes (3). Patient management frameworks are strengthened in healthcare settings by interdisciplinary collaborative practice, according to the World Health Organization (WHO). Moreover, it considers IPE to be among the most promising approaches for achieving successful teamwork in healthcare environments. IPE

assists students in becoming familiar with both the primary responsibilities of their own occupations and the duties of teammates from other professions (4). While this educational approach has been employed for over 30 years with a special emphasis and attention from the WHO and an increasing trend internationally, especially in developed countries, and research and knowledge related to it are expanding, however, IPE has not yet been formally used in health science education in our country (5). Preparing the programs to improve interprofessional collaboration among Iranian healthcare professionals needs more attention. Few qualitative research studies have investigated in depth how professors and students view IPE in the Iranian context. The findings of Irajpour et al.'s (as cited by Khabaz Mafinejad et al.) study revealed that learning similar to IPE is more common in Iran than previously thought (6). In order to improve collaborative approaches in the healthcare system, IPE should be considered in the curriculums of students from the early years of education. A crucial step is to respond to the cultural barriers, identify IPE, and implement successful executive models based on cogent research evidence and the results from these models over the past few decades across the world.

2. Objectives

This current research is trying to investigate the attitude of professors of Shahid Beheshti Medical Science University towards the necessity of implementing IPE so that it will be a prelude for the next research on the importance and necessity of employing IPE for students from different professions and its impact on their professional practices.

3. Methods

3.1. Study Design

For this research investigation, a cross-sectional study design was used.

3.2. Study Setting

Research participants in this study included professors from Shahid Beheshti Medical Sciences University. The criteria for entry into the study were having work experience as a faculty member for more than one year. First, the list of professors was obtained from the educational deputy of the university. Then, a corresponding number of samples were randomly selected equal to the number of faculty members in each faculty. The present research is registered in the

Medical Sciences research system of Shahid Beheshti University, with the code of ethics IR.SBMU.SME.REC.1401.061.

3.3. Target Population and Sample Size

Considering that the target population is around 2500 people, using Sullivan's formula with a 5% margin of error and a 95% confidence level, the predicted total sample size was 333 people. Sampling was done by cluster and random methods.

3.4. Data Collection Tools

The study tool included a demographic information questionnaire and a professors' attitude questionnaire towards IPE. Data were collected using a standard questionnaire. Out of a total of 330 people selected in the sampling, 138 people completed the questionnaire on the Porsline software platform, and 180 people completed the questionnaire by visiting in person. A total of 318 questionnaires were collected. For data analysis, the questionnaire data were entered into SPSS software.

4. Results

The research's findings are separated into two categories: Findings related to professors' attitudes and findings related to demographics. Based on the respondents' dominant characteristics, the frequency of demographic factors is shown in [Table 1](#).

Table 1. Description of the Statistical Sample Population

Dominant Demographic Characteristics	Frequency
Sex	
Female	57.2
Age	
50 to 60 years old	40.3
School of service	
Medical	36.5
Faculty type	
Assistant Professor	43.1
Specialized field of professors	
Medical Clinical specialties	35.5
Academic degree of professors	
Clinical specialized doctorate	56
Work history of professors	
20 to 30 years	38.7

Based on these results, it can be said that the dominant gender of the target population of this study, i.e., the professors of Shahid Beheshti University of Medical Sciences, is female. Half of the respondents have

a doctorate in clinical specialization, serve in the medical faculty, are assistant professors, and have a field of study in clinical medicine specialties. The results of descriptive statistics showed that out of 318 professors, 113 have clinical medicine specialties, 26 have medical and health education specialties, 47 have nursing specialties, 72 have basic medical science specialties, 45 have health specialties, and 15 are specialized in managing healthcare services. Most of the professors had clinical medical specialties. In terms of age distribution, the dispersion is broader, with 40.3% of participants aged 50 - 60 years, constituting the dominant age group.

4.1. Description of Professors' Attitudes Toward Interprofessional Education

There are various methods for screening IPE attitude factors. Generally, the purpose of screening education attitude questions is to reduce their significant number and apply appropriate analyses to the remaining factors. Statistical tests are among the most important field screening methods. Screening statistical tests are divided into two groups: Parametric and Nonparametric tests. Nonparametric tests are used when data distribution is not normal.

In this study, considering that the data distribution is not normal, the Binomial nonparametric test was used.

The Binomial nonparametric test involves two hypotheses: The null hypothesis and the opposite hypothesis.

- The null hypothesis (H_0) indicates that the average of professors' attitudes toward the desired factors, as shown in Table 2, is less than or equal to three (very low, low, or neither low nor high).

- The opposite hypothesis (H_1) states that the average of the data for the desired factor is greater than three (high or very high).

If the significance coefficient (P-value) is less than 5%, it implies that the attitude towards that question is significant for professors.

The Binomial test was conducted to analyze the 15 attitudinal questions presented in Table 2. Due to publication space limitations, the results of two of these tests are provided as examples in Tables 3. and 4. Table 3 illustrates the professors' positive opinions on the role of IPE in fostering students' development of positive attitudes towards other healthcare professionals. Table 4 displays the professors' negative attitudes toward the idea that clinical problems can only be solved by students if they are trained exclusively within their own faculty.

Professors' attitude towards this question has a significance coefficient of less than 0.05, indicating a significant positive attitude of professors towards it.

Professors' attitude towards this question is not significant, with a significance coefficient greater than 0.05, indicating that they do not have a priority. The Binomial test output indicated that questions 2, 5, and 8, with a significance coefficient greater than 0.05, are questions that are not significant and do not have priority, considering the attitude of professors. In contrast, the remaining questions, which have a significance coefficient of less than 0.05, indicate a significant positive attitude of professors towards IPE.

5. Discussion

Based on these results, it can be said that the dominant gender of the target population of the current study is female. All faculty members of Shahid Beheshti University of Medical Sciences included in the study are women. Half of them hold a doctorate degree in clinical specialization, and they primarily work in the medical school. Their academic ranks are mostly assistant professors, and their field of study is clinical medicine specialties. The results of inferential statistics showed that questions related to attitudes have a significance coefficient of less than 0.05, which indicates a significant positive attitude of professors towards IPE.

Our study aimed to measure the attitude of professors at Shahid Beheshti University of Medical Sciences towards the necessity of implementing IPE. Research has shown that, on the whole, professors have a positive attitude towards IPE. Our findings align with previous literature on professors' attitudes regarding the significance of IPE. Professors agree that IPE may be effective in teaching students about patient-centered care. Interprofessional education can lead to several positive outcomes, including improved problem-solving skills, enhanced clinical decision-making, better quality hygienic care, improved patient safety, upgraded communication skills, and increased understanding of different professional roles in healthcare settings.

Numerous studies worldwide have highlighted the benefits of interprofessional practice in enhancing patient care. It has been shown that patient-centered care is crucial, and IPE can facilitate its integration into medical and healthcare-related educational programs (4). For example, Mirzabigi et al.'s research demonstrated that nurses and physicians who received IPE showed a significant increase in empathy and interprofessional collaboration in the emergency department. IPE increased empathy and collaboration

Table 2. Attitude Toward Interprofessional Education

Questions	Very Low (1)	Low (2)	Neither Low Nor high (3)	High (4)	Very High (5)
1	15	0	44	155	104
2	59	82	96	81	0
3	6	0	15	163	134
4	13	17	22	96	170
5	37	82	44	81	74
6	15	30	66	111	96
7	6	22	37	171	82
8	140	89	30	37	22
9	0	0	15	185	118
10	0	4	10	156	148
11	0	5	16	184	113
12	0	0	15	118	185
13	0	0	13	134	171
14	0	0	22	133	163
15	0	0	23	147	148

Table 3. Interprofessional Learning Will Help Students to Catch a Positive Mindset Towards Other Health Professionals

Variable	Category	N	Binomial Test		Exact Sig. (2-tailed)
			Observed Prop.	Test Prop.	
q1				0.50	0.000
Group 1	<= 3	59	0.19		
Group 2	> 3	259	0.81		
Total		318	1.00		

by 36% and 43%, respectively (7). A review study also recommended that interprofessional and teamwork training be included in educational programs to form the triangular process of patient-physician communication in educational settings, enabling students to work in teams and exhibit interprofessional cooperation in support of healthcare goals (8).

Ud-din et al. suggested that students' perceptions have a strong positive connection with their readiness for interprofessional learning. Interprofessional education helps students understand other professionals' roles, fostering collaboration and teamwork, and improves communication between patients and healthcare professionals (9). Garousi et al. concluded that the perspectives of faculty members and graduates at Kerman University of Medical Sciences highlight IPE's usefulness for educational planning and program development. Such planning can improve the quality of health services (10). To further support IPE, educational planners should address obstacles to its implementation to create a foundation for broader acceptance in academic settings (11).

Research has emphasized the necessity of developing programs for academic staff regarding IPC and IPE.

Additionally, innovative strategies should be designed to implement these programs in diverse academic environments (12). Dallaghan et al. found that professors generally have a positive attitude towards IPE, and their attitude is not a barrier to participation in interprofessional activities. Instead, the main obstacle lies in weak educational planning (13). Overall, university health chancellors have an ideal understanding of interprofessional teamwork and education (14). Professors generally exhibit supportive attitudes toward interprofessional learning and are receptive to IPE. Most professors agree that IPE effectively prepares students for collaboration in healthcare teams, which is essential for all health sciences students. Professors also recognize the feasibility of teaching and learning in interprofessional groups.

5.1. Conclusions

The positive effect of IPE in improving students' attitudes towards learning and emphasizing the necessity of interprofessional cooperation in the health system highlights the availability of an essential and

Table 4. Solving Clinical Problems Can Only be Effectively Learned When Students Receive Training in Their Department or Faculty

Variable	Category	N	Binomial Test		Exact Sig. (2-tailed)
			Observed Prop.	Test Prop.	
q1				0.50	0.000
Group 1	<= 3	237	0.75		
Group 2	> 3	81	0.25		
Total		318	1.00		

motivational background, fostering an ideal attitude for integrating IPE into health sciences. To achieve this, managers should prioritize planning and implementing IPE within the country's health education system. This approach will prepare capable and talented workforces to address the health and hygiene needs of both current and future generations. Ultimately, patients will benefit as health science students collaborate to solve their health issues effectively.

5.2. Highlights

(1) Interprofessional education (IPE) fosters collaboration among healthcare professionals, improving teamwork and enhancing patient care outcomes.

(2) Professors at Shahid Beheshti University of Medical Sciences exhibit a positive attitude towards the implementation of IPE, creating a strong foundation for its integration into medical education curriculums.

(3) Incorporating IPE into health sciences education can prepare future healthcare professionals to address complex health system challenges through effective interdisciplinary collaboration.

5.3. Lay Summary

This study explored the attitudes of professors at Shahid Beheshti University of Medical Sciences towards IPE a collaborative learning approach where students from different healthcare fields learn together. The results showed that most professors had a positive view of IPE, recognizing its potential to improve teamwork and patient care. By introducing IPE into medical education, future healthcare professionals can develop the skills needed to work collaboratively in addressing the growing complexities of healthcare systems. This research highlights the importance of integrating IPE into education to enhance the quality of healthcare delivery for future generations.

Footnotes

Authors' Contribution: Study concept and design: H. Kh.; analysis and interpretation of data: H. Kh. and S. A.; drafting of the manuscript: H. Kh.; critical revision of the manuscript for important intellectual content: S. A. and A. H.; statistical analysis: H. Kh.

Conflict of Interests Statement: The authors declared that they have no conflict of interest.

Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after publication.

Ethical Approval: The present research is registered in the Shahid Beheshti University of Medical Sciences research system with ethics code [IR.SBMU.SME.REC.1401.061](https://doi.org/10.1186/s12909-016-0704-3).

Funding/Support: There was no financial support.

Informed Consent: All participants took part in this research voluntarily and with full awareness, without their names being disclosed. The information provided by the participants will be kept confidential.

References

- Lestari E, Stalmeijer RE, Widyandana D, Scherpbier A. Understanding students' readiness for interprofessional learning in an Asian context: a mixed-methods study. *BMC Med Educ*. 2016;**16**:179. [PubMed ID: [27422207](https://pubmed.ncbi.nlm.nih.gov/27422207/)]. [PubMed Central ID: [PMC4946087](https://pubmed.ncbi.nlm.nih.gov/PMC4946087/)]. <https://doi.org/10.1186/s12909-016-0704-3>.
- Baxi DG, Palekar DT. Health Science Teacher's Attitudes Towards Interprofessional Education.: Health Science Teacher's Attitudes Towards Interprofessional Education. *National J Integrated Res Med*. 2018;**6**(3):84-7.
- Hean S, Craddock D, Hammick M, Hammick M. Theoretical insights into interprofessional education: AMEE Guide No. 62. *Med Teach*. 2012;**34**(2):e78-101. [PubMed ID: [22289015](https://pubmed.ncbi.nlm.nih.gov/22289015/)]. <https://doi.org/10.3109/0142159X.2012.650740>.
- Maharajan MK, Rajiah K, Khoo SP, Chellappan DK, De Alwis R, Chui HC, et al. Attitudes and Readiness of Students of Healthcare Professions towards Interprofessional Learning. *PLoS One*. 2017;**12**(1). e0168863. [PubMed ID: [28060838](https://pubmed.ncbi.nlm.nih.gov/28060838/)]. [PubMed Central ID: [PMC5217964](https://pubmed.ncbi.nlm.nih.gov/PMC5217964/)]. <https://doi.org/10.1371/journal.pone.0168863>.
- Vafadar Z, Vanaki Z, Ebadi A. [Interprofessional Education a Response to Health System Challenges]. *Iran J Med Educ*. 2014;**14**(2):148-64. FA.

6. Khabaz Mafinejad M, Ahmady S, Soltani Arabshahi SK, Bigdeli S. Interprofessional education in the integrated medical education and health care system: A content analysis. *J Adv Med Educ Prof.* 2016;**4**(3):103-10. [PubMed ID: 27382577]. [PubMed Central ID: PMC4927252].
7. Mirzabeigi M, Mahdi E, Mirmehrabi A, Mirzabeigi A. [Evaluation of effectiveness educational based on inter-professional approach on rate of empathy and inter-professional collaboration among nurses and physicians in emergency department during the Covid-19 pandemic]. *Quarterly J Ners Management.* 2022;**11**(2):24-41. FA.
8. Moaddab F, Javadi N, Ghanbari A, Taheri-Ezbarami Z, Pouralizadeh M. [The Status, Challenges, and Solutions of Professional and Inter-professional Communications in Nursing in Iran: A Review Study]. *Sci J Nurs, Midwifery Paramedical Faculty.* 2021;**6**(3):48-57. FA.
9. Ud-din Y, Ghani N, Khatoon Z, Ali H, Badshah S; Zartasha, et al. Perception and Readiness Towards Inter-Professional Education Among Different Health Care Disciplines at Khyber Medical University Peshawar. *bioRxiv.* 2022;**Preprint.** <https://doi.org/10.1101/2022.12.21.521507>.
10. Garrusi B, Amirkafi A, Garousi S. Assessing the Viewpoint of the Faculty Members and Graduates of Kerman University of Medical Sciences Toward Interprofessional Education and Interprofessional Teamwork. *Strides Dev Med Educ.* 2020;**17**(1):1-7. <https://doi.org/10.22062/sdme.2020.91551>.
11. Valipour Khajehghyasi R, Mirshah Jafari SE, Shahbaznejad L. A Survey of the Perception of Interprofessional Education among Faculty Members of Mazandaran University of Medical Sciences. *Strides Dev Med Educ.* 2017;**14**(2). <https://doi.org/10.5812/sdme.64086>.
12. Lestari E, Stalmeijer RE, Widyandana D, Scherpbier A. Understanding attitude of health care professional teachers toward interprofessional health care collaboration and education in a Southeast Asian country. *J Multidiscip Healthc.* 2018;**11**:557-71. [PubMed ID: 30349287]. [PubMed Central ID: PMC6190822]. <https://doi.org/10.2147/JMDH.S178566>.
13. Dallaghan GL, Hoffman E, Lyden E, Bevil C. Faculty attitudes about interprofessional education. *Med Educ Online.* 2016;**21**(1). <https://doi.org/10.3402/meo.v21.32065>.
14. Curran VR, Deacon DR, Fleet L. Academic administrators' attitudes towards interprofessional education in Canadian schools of health professional education. *J Interprof Care.* 2005;**19** Suppl 1:76-86. [PubMed ID: 16096147]. <https://doi.org/10.1080/13561820500081802>.