

Relationship between Self-efficacy and Attitudes towards Interprofessional Collaboration and Communication in Learners of Different Disciplines of Medical Sciences

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Abstract

Background: Interprofessional collaboration is defined as a key component of a successful team in healthcare system. Interprofessional collaboration facilitates healthcare team members to provide the effective and safe healthcare services.

Objectives: This study aimed at investigating the relationship between self-efficacy and attitudes toward interprofessional communication and collaboration in learners of different disciplines.

Methods: This cross-sectional study carried out in Shahid Sadoughi University of Medical Sciences in 2020. In the first phase, the psychometrics properties of the scales; attitudes toward healthcare teams and self-efficacy in interprofessional collaboration and communication were evaluated. In the second phase, the survey were conducted among 178 residents, medical interns, and nursing students.

Results: The validity and reliability of the instruments were confirmed. According to exploratory factor analysis, the items of the self-efficacy in interprofessional collaboration and communication scale were classified into four areas; effective communication with the patient, patient involvement, interprofessional teamwork, and interprofessional interaction. The Cronbach's alpha coefficient was 0.74 and 0.95, and interclass correlation coefficient was 0.76 and 0.90 for attitudes toward healthcare teams and self-efficacy in interprofessional collaboration and communication scales, respectively. The mean scores of self-efficacies (2.10 ± 0.41) and attitudes toward health care teams (2.17 ± 0.43) were at a weak level, and a significant relationship was observed between them ($P = 0.001$, $r = 0.80$).

Conclusion: Regards the confirmation of validation of the tools, the validated instruments can be utilized for formative evaluation of learners in different fields in order to provide the necessary platform for the promotion of interprofessional collaboration behavior in clinical teams.

Keywords: Interprofessional, Collaboration, Attitude, Team, Self-efficacy, Interprofessional Communication

Background

Patient safety is considered the main indicator in healthcare delivery systems, and health system personnel are expected to acquire the core capabilities to provide safe and high-quality services (1). In this regard, the World Health Organization, scientific communities, and educational accreditations agencies in worldwide to develop frameworks to explain the capabilities needed to achieve the goals of providing safe and high-quality services in healthcare systems (1-4). Likewise,

interprofessional collaboration in educational programs of universities and institutes continuously receives special attention (4-6). Hence, interprofessional collaboration and teamwork are defined as core competencies in the curricula (5, 6). Various areas are defined in the literature for interprofessional collaboration, including professional values, recognizing roles and responsibilities, teamwork, interprofessional communication, leadership, and conflict management (4-7). Teamwork and interprofessional communication, as the basis for

interprofessional collaboration, can play an effective role in healthcare teams (7-9). The results of a review study on interprofessional training and cooperation indicated the need for further research to determine the factors affecting interprofessional cooperation in healthcare teams (10-11). Therefore, recognizing factors predicting and influencing behavior change, such as attitude and self-efficacy, among healthcare team members and planning based on it can provide a solution for the promotion of interprofessional collaboration behavior in educational interventions.

Self-efficacy and attitudes toward the desired behavior are considered important in choosing and performing it. Self-efficacy is the key determinant in Bandura's theory, introduced as an important and main precondition for behavior change. According to this theory, behavior is the result of interactions among environmental factors, behavior, and the individual (12-13). Self-efficacy is defined as one's understanding of his ability to organize and practice the pathways required to manage future situations (12, 13). Self-efficacy beliefs guide thinking, feeling, motivation, and ultimately, functioning. In Bandura's theory, self-efficacy refers to the sense of competence, adequacy, and ability to cope with life situations and the extent of one's perception of the degree of control over different situations. Self-efficacy is a personal factor influencing the choice and conduct of a particular behavior (12-15). It shows that how people think, feel, and behave (13, 16). Perceived self-efficacy determines the type of one's selective behavior, perseverance, and quality of performance (17). Self-efficacy, in the early stages, does not develop with "self-persuasion" and beliefs in "I think" and "I can", but is formed by the consistent support and pursuit of realistic plans, concepts that should be considered in organizations (18).

In clinical practice, self-efficacy is considered a key component of independent behavior (17) that helps learners to feel competent in different situations and accept their roles (19, 20). The results of a study by Mohammadi et al. showed that higher self-efficacy leads to better adaptation and, in turn, better functioning in the desired behavior (21). Robb stated in a study that the facilitation of self-efficacy converses learning into practice, leading to the decrease of the gap between theory and performance (22). It increases the motivation, self-confidence, and clinical performance of learners in complex and difficult situations (17).

Interprofessional collaboration is a complex concept whose realizing requires the knowledge of personal, cultural, and systemic factors in the desired community. The personal factors are recognized as the most important factors in interprofessional collaboration, among which knowledge expansion, decision-making, and teamwork skills are of great importance. In addition, attitudes and beliefs in the usefulness and perceived competence of personal abilities play an effective role in involvement in interprofessional collaboration (17). Attitude is another factor that plays a role in decision-making in behavior choice (23) and is introduced as an effective factor in

the development of knowledge and skills required for interprofessional collaboration (10). Therefore, it can be said that attitude and self-efficacy are among the factors affecting interprofessional cooperation and communication (24, 25). In other words, effective performance depends on individual skills, attitudes, and beliefs in self-efficacy, and those who believe in their abilities can take steps toward success (17). Therefore, it is necessary to properly analyze the current situation through studies to provide a basis for effective interventions. Given that in the present study setting, educational programs were mainly designed and implemented as a disciplinary based approach, the promotion of interprofessional cooperation skills is not included in the curricula. Hence, the evaluation of learners' attitudes and self-efficacy in interprofessional communication, in terms of person-behavior interaction, could be a starting point for planning the promotion of interprofessional cooperation among learners of different professions.

Objectives: The present study aimed to investigate the relationship between self-efficacy in interprofessional cooperation and attitudes toward the team among nursing students, as well as medical interns and residents at Shahid Sadoughi University of Medical Sciences.

Method

The current descriptive-analytical cross-sectional study was conducted in two phases at Shahid Sadoughi University of Medical Sciences, in 2020. In the first phase, the psychometric properties of the attitudes toward healthcare teams scale and self-efficacy in interprofessional team collaboration scale were examined. In the second phase, a survey of the learners of clinical education courses (including nurses as well as medical students at internship, and medical residents) was performed at Shahid Sadoughi University of Medical Sciences, who were selected by the census method.

The Communication Skill Self-Efficacy Beliefs scale was first developed by Hagemeyer et al. in 2014 to assess the self-efficacy in interprofessional collaboration and communication (26). Items are scored based on a Likert scale from strongly disagree (score 1) to strongly agree (score 5). The total score of the scale is calculated from the average score of all 33 items. Therefore, the score of each item ranges from 1 to 5, and the total scores are classified as very weak (1-2), weak (2.1-3), moderate (3.1-4), and strong (4.1-5).

The attitudes toward healthcare teams scale was first developed by Heinemann et al., and its reliability was confirmed by Cronbach's alpha coefficient ($\alpha = 0.83$) (27). This 19-item scale has two subscales, including "quality of health services" ($n=14$) and "physician-centered" ($n=5$). The items are scored based on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The total score is obtained from the average scores of all 19 items. Thus, the score of each item ranges from 1 to 5, and the total scores are classified as very weak (1-2), weak (2.1-3), moderate (3.1-4), and strong (4.1-5) (27).

In the first phase of the study, the psychometric properties of the instruments were assessed. The translation-retranslation process was performed by two experts fluent in Persian and English languages. The translated versions were compared to provide the initial Persian version. It was reviewed by medical education and nursing education experts, as well as clinical specialists (n=4), and accordingly, the final version was developed. Next, the Persian version was retranslated into the original language. After making sure that the re-translated version coincided with the original one, the expert's comments were made by a specialized team. Finally, the Persian version of the questionnaires was approved.

The content and face validity of the Persian version of the questionnaires were assessed by the Delphi technique. It was performed in four rounds with the participation of medical education faculty members and clinical specialists (n=15). First, the Persian version was reviewed by experts, and their comments on the content validity of the scale were qualitatively examined. After two weeks of each round, experts' comments were collected, and the second round was performed after making amendments. This technique was performed for four rounds until no new code was presented. Then, the content validity of the Persian version of the scale was qualitatively analyzed. The Content Validity Ratio (CVR) and Content Validity Index (CVI) were used. For this purpose, the experts were asked to rate each item on a three-point scale (i.e., necessary, useful but not necessary, and not necessary). Based on the Lawshe table, the minimum CVR value was determined (15). For CVI, the validity of each item was assessed based on a four-point scale (very high = 4, high = 3, low = 2, very low = 1) (16).

Next, the exploratory factor analysis of the Communication Skill Self-Efficacy Beliefs scale was conducted for the first time in the present study. This was done because of the importance of explaining the components of self-efficacy in interprofessional communication and the complexity of this concept. For this purpose, 350 learners in different disciplines of medical sciences (195 nursing students and 155 medical students) were included in the study. The inclusion criteria were studying in nursing or different disciplines of medicine and spending at least three months in clinical training at teaching hospitals affiliated with Shahid Sadoughi University of Medical Sciences. All eligible subjects were included in the study. In the exploratory factor analysis, the sampling adequacy was assessed by the Kaiser-Meyer-Olkin (KMO) test. In addition, the Bartlett test was performed to examine the suitability of the data. Varimax orthogonal rotations and principal component analysis were also used to identify the scale dimensions. The reliability of the instruments was assessed using internal consistency and reproducibility. The internal consistency was assessed using Cronbach's alpha coefficient and the internal consistency using the test-retest method.

In the second phase of the study, a survey was conducted to investigate the attitudes and self-efficacy in

interprofessional collaboration and communication among the study participants. The inclusion criteria were studying in nursing students or medical students at internship, and medical residents as well as, spending at least six months in clinical training at the hospital. The study samples were included by the census method. The questionnaires were distributed to the participants in the hospitals, and explanations were also given regarding the study objectives. The self-administered questionnaires were completed by nursing students, as well as medical students at internship, and medical residents.

Also, the scores of attitudes and self-efficacy in interprofessional communication were analyzed using descriptive (mean and standard deviation) and analytical (ANOVA and t-test) tests. Pearson correlation coefficient was performed to determine the relationship between the scores of self-efficacies in interprofessional communication and attitudes toward healthcare teams. Finally, the data were analyzed in SPSS version 24 (IBM Corporation, Armonk, NY). Significant level was considered as 0.05.

Questionnaires were completed anonymously, and a code was assigned to each participant in order to maintain confidentiality.

Results

In the first phase, a total of 15 medical education faculty members and clinical specialists participated, of whom eight were males (53.33%) and seven females (46.66%), with a mean age of 46±6 years. In addition, a total of 415 students of nursing and medical internes and residents participated in the validation phase that include exploratory factor analysis (n=350), internal consistency (n= 35), and reproducibility (n=30) of the scales. In the second phase, 178 subjects including 53 nursing students (29.8%), 90 interns (50.6%), and 35 specialty residents (19.7%) participated (response rate = 76%).

The face and content validity of both instruments were confirmed by the experts participating in the first phase of the study. According to the Lawshe table, all items of both scales obtained values greater than 0.49, using the CVR results. The items of both scales got CVI values greater than 0.79 and were retained in the questionnaire. Finally, both qualitative and quantitative validities of the 33-item self-efficacy in interprofessional communication scale and the 19-item attitudes toward the healthcare teams scale were confirmed.

For the self-efficacy in interprofessional collaboration and communication scale, the adequacy of sampling, based on the KMO index (0.90), confirmed, and the Bartlett test results showed the suitability of data (P=0.001). The present study results indicated a relationship between the variables examined in factor analysis. Based on the exploratory factor analysis, the measured scales included items with significant factor loading. As reported, the components of the self-efficacy in interprofessional communication scale included the following factors: effective communication with the patient, patient involvement, interprofessional teamwork, and interprofessional interaction.

Table 1. Factor Loads of the Items of Self-efficacy in Interprofessional Communication Scale

Item	Factor Load
Effective communication with the patient	
1- I have the necessary skills to effectively communicate with the patient.	0.56
2. I have the necessary skills to effectively communicate with the healthcare team members.	0.54
3- I clearly communicate with the patient.	0.66
4. I actively listen to patients to fully understand their views on the disease.	0.76
5. I make a good communication with my patient.	0.75
6- When I meet with patients, I consider the patient-centered communication principles.	0.73
7- I manage the information received from the patient in a way to ensure that I fully understand his needs and concerns.	0.61
8- I effectively consider the patient's feelings when interacting with him.	0.71
9- I communicate with the patient by building the trust.	0.74
10- I end the discussion with the patient while the information received by him is facilitated.	0.71
11. When a dispute arises over a treatment plan, I use patient participation strategies to gain a common perspective.	0.72
Patient Involvement	
12- I clearly communicate with the patient.	0.61
13- I professionally express my opinions to the patient.	0.62
14- I effectively explain the roles and responsibilities of team members to the patient.	0.71
15- I can effectively involve the patient in the treatment plan if he wishes.	0.63
16- I effectively provide information for illiterate patients.	0.50
17- I clearly state my role and responsibility to the patient.	0.50
18- I patiently communicate with the patient.	0.51
19. I effectively talk to the patient about my knowledge and skill limitations.	0.60
Interprofessional Teamwork	
20- I transparently transfer my knowledge to the healthcare team members.	0.70
21- I professionally respond to team members' feedback.	0.70
22- I effectively overcome barriers limiting communication with healthcare team members.	0.62
23- I respectfully give feedback to healthcare team members.	0.50
24- I encourage the healthcare team members to freely express their opinions.	0.61
25- I professionally respond to interprofessional conflicts.	0.55
26- I establish a positive, supportive relationship with healthcare team members.	0.56
27- I perfectly know the hierarchy of authority among healthcare team members.	0.66
28- I have a correct understanding of my role as a healthcare team member.	0.68
29- I have a good understanding of the role of team members.	0.78
Interprofessional Interaction	
30- I respectfully share my views with team members.	0.65
31- I actively listen to team members.	0.75
32. I respect the expertise of team members.	0.74
33. I trust team members.	0.69

Table 2. The comparison of the scores of the self-efficacy in interprofessional communication and collaboration and attitude toward health care team based on field of the study

Area	Discipline			P	F
	Interns Mean (SD)	Residents Mean (SD)	Nursing students Mean (SD)		
Self-efficacy in inter-professional communication					
Effective communication with the patient	10.51(2.0)	2.04(0.51)	1.94(0.61)	0.46	0.62
Patient involvement	27.55(2.0)	2.45(0.56)	2.29(0.78)	1.94	0.14
Interprofessional teamwork	10.49(2.0)	2.19(0.46)	2.03(0.52)	1.51	0.22
Interprofessional interaction	72.48(1.0)	1.85(0.49)	1.70(0.49)	0.46	0.18
Total score	5.40(2.0)	2.15(0.40)	2.02(0.47)	1.72	0.18
Attitudes toward healthcare team					
Quality of health care services	2.15(0.38)	2.14(0.38)	2.15(0.43)	0.82	0.44
Physician-centered	2.14(0.38)	2.15(0.38)	2.13(0.38)	0.58	0.56
Total score	2.15(0.4)	2.14(0.38)	2.15(0.36)	0.82	0.43

Table 1 shows the factor loading of each item.

For attitudes toward healthcare teams scale, the Cronbach's alpha coefficient and interclass correlation coefficient (ICC) were 0.74 and 0.95, respectively. The Cronbach's alpha coefficient and interclass correlation

coefficient (ICC) were 0.76 and 0.90, respectively for self-efficacy in interprofessional team collaboration scales, respectively.

In the second phase of the study, 178 nursing students, as well as medical students at internship, and medical

residents, participated, of whom 82 were males (43.4%) and 96 females (53.9%). Totally, 90(50.6%) interns, 35 (19.7%) residents, and 53(29.8%) nursing students participated in the study, with a mean age of 28.80 ± 5.88 years. As reported, self-efficacy in interprofessional communication, with a mean score of 2.10 ± 0.41 , was reported in a weak level. The mean score of females (2.16 ± 0.38) was significantly higher than that of males (2.02 ± 0.42) in self-efficacy ($P = 0.02$). There was no significant relationship between the mean score of self-efficacies and the age of participants ($P = 0.90$, $r = 0.20$).

The attitude towards healthcare teams was reported in a weak level among the participants, with a mean score of 2.17 ± 0.43 . The obtained scores ranged from 1.00 to 3.37. The mean score of participants in attitudes toward healthcare teams showed a weak level in the assessed domains (Table 2). The mean score of attitudes in men and women were 2.06 (0.14) and 2.28 (0.14), respectively, which showed that this score was significantly higher in female students ($P = 0.001$). There was no significant relationship between the mean score of attitudes and the age of participants ($P = 0.720$, $r = 0.10$).

The results showed a significant positive relationship between the mean scores of attitudes towards team and self-efficacy towards interprofessional collaboration and communication ($P = 0.001$, $r = 0.80$). The scores of participants related to self-efficacy and attitudes among participants by different disciplines are presented in Table 2. There was no significant difference between the mean scores of attitudes toward healthcare teams and self-efficacy in interprofessional collaboration and communication among the participants based on the study field and degree ($P > 0.05$).

Discussion

Interprofessional cooperation among healthcare team members is considered a way to achieve the provision of safe services (28). Therefore, it is necessary to promote the attitude, self-efficacy, and performance of interprofessional collaboration among healthcare team members (28, 29). The results of the present study showed that the validation of instruments used to measure attitudes toward healthcare teams and self-efficacy in the self-efficacy in interprofessional collaboration and communication were confirmed. The results of the second phase showed a significant positive relationship between the attitude and self-efficacy in interprofessional cooperation; however, the scores of nursing students, as well as medical students and residents, were low in both attitude and self-efficacy variables.

the present results showed the significant positive correlation between attitudes toward healthcare teams and self-efficacy in interprofessional collaboration. In line of our results, the findings of Khademian study indicated that students' interpersonal communication skills had a direct and significant relationship with their attitudes towards teamwork (30). A positive attitude leads to higher self-efficacy in interprofessional cooperation

and communication, and a belief in teamwork capability also helps to have a positive attitude. In the present results showed the alignment of the two attitude and self-efficacy variables indicated a negative attitude towards the interprofessional team collaboration led to low self-efficacy in teamwork, and also, low self-efficacy led to a negative attitude towards the interprofessional team collaboration among the participants, which is consistent with person-behavior in the Bandura (12) and Bandura and Adams (13) theories. This can be due to the neglect of training communication skills and interprofessional collaboration in both formal and informal curricula. In the present study, learners mainly spend the main courses in clinical ward by a uni-professional approach. They had less opportunity to practice and experience interprofessional collaboration in training situations. It seems that this issue, in addition to building a person-centered attitude, also affected the lack of self-efficacy in their teamwork.

Based on the results of the present study, the mean scores of attitudes and self-efficacy in interprofessional collaboration and communication were reported low among nursing students, as well as general practitioner and specialty assistants, which contradicted the results of a study by Williams et al. (30). In their study, the level of self-efficacy in interprofessional learning and collaboration was estimated at a moderate level (31). Differences in results can be due to the different disciplines of the participants, as well as the community culture in the two studies.

The results of a study by Mahfoozpour and Mozhdehkar showed that about 50% of physicians, nurses, and paramedics working in Labbafinejad Hospital, Tehran, believed that they had any teamwork (31). Therefore, it seems that the promotion of teamwork skills should be considered in healthcare personnel. In a study by Shaghayeghfard et al., the attitude of personnel in different rehabilitation disciplines, such as physiotherapy, occupational therapy, speech therapy, rehabilitation medicine, and artificial limbs, was reported desirable (32). The difference between their findings and the present results can be due to the working environment, the nature of rehabilitation activities, and a better understanding of the need for interprofessional teamwork to provide rehabilitation services among assistants and involved staff. In a study by Shaghayeghfard et al., inappropriate intra-group communication, a misconception of asking for help, and lack of knowledge of teamwork were reported as the challenges of teamwork (32). In their research, Nørgaard et al. reported that the participants' self-efficacy in interpersonal communication was moderate before the intervention, and inter-professional training had a significant effect on the promotion of self-efficacy in collaboration and communication (33, 34). It seems that the lack of experience in interprofessional training could have affected the attitudes and self-efficacy of participants in the present study.

The results of the present study showed that the score of participants in attitudes toward teamwork was low. In a

study by Khademian and Tehrani, the attitudes of nursing students towards teamwork were moderate to high, and interpersonal communication skills were at a moderate to desirable level (29), which was inconsistent with the present results; this could be due to different educational processes, especially in clinical training. Given that in Shiraz University of Medical Sciences, the membership of learners in medical teams during clinical education gains special attention, it seems that students can have more positive attitudes and skills in interprofessional collaboration and communication (29).

Based on the results of the present study, the score of participants in attitudes toward both high-quality and physician-centered healthcare services was low. One of the challenges to promote interprofessional teamwork is the belief in providing high-quality services through interprofessional collaboration. When team members do not have a positive attitude towards the team and teamwork, it is difficult to promote skills and change their behavior even if they have technical knowledge and skills. Another important point is the physician-centered approach that needs to be controlled in healthcare teams and shifted to an interprofessional one through the promotion of team members' capabilities. In this regard, Vafadar et al. considered the physician-centered approach as a key barrier to the promotion of interprofessional cooperation in medical education system at Iran (35). The findings of a study by Ardalan and Eskandari showed the significant positive effect of action-oriented team leadership components on team skills and synergy (36), which is consistent with the results of the present study. In the present study, the physician-centered approach (individualism) contributed to a weak attitude toward teamwork and perception of self-efficacy in interprofessional collaboration. The results of various studies introduced interprofessional education as a way to promote self-efficacy and attitudes toward interprofessional collaboration (35, 24). Interprofessional education helps to accept the role as a team member and understand related responsibilities, which can develop a team-oriented attitude among team members and affect team members' performance (24).

Based on the results of the present study, there was a significant difference in the scores of self-efficacy and attitudes toward interprofessional collaboration and communication between different degrees and disciplines. This highlights the need for all learners in the disciplines to be involved in healthcare services to promote their interpersonal communication capabilities. The present study participants consisted of nursing students, as well as medical interns and residents, who played role of healthcare teams members. Medical students may lead future healthcare teams whose skills and attitudes toward interprofessional collaboration can also effectively guide other team members. In the study by Costa et al., strong leadership was introduced as an essential component of establishing the culture of collaboration among professionals at the team and hospital levels. Collaborative

leadership motivates team members to perform well; it also supports organizational aspirations and plays a critical role in promoting interprofessional collaboration (37).

In research by van Schaik et al., team leadership is described as an essential competency for interprofessional collaboration. In their study, the ability to communicate, active listening, facilitating, problem-solving, and participatory decision-making were among the essential leadership skills based on the interdisciplinary approach (38). When a team leader has neither of an understanding of inter-professional collaboration nor adequate skills in leadership, he/she cannot be expected to implement a team-based treatment plan and guide the team as the most important strategy to provide safe and patient-centered healthcare services (39, 2, 1). On the other hand, team members need to know their individual and team responsibilities and believe that being a team member, they need to be responsible and accountable. The predominance of a uni-professional approach and the negligence of responsibilities towards other team members can lead to medical errors and inter-professional challenges (36). Therefore, building an interprofessional attitude, finding it useful to provide team-oriented services, growing the belief in teamwork, and cooperating with others need to be considered among the learners of various medical disciplines. This is consistent with the social cognitive theory and can be interpreted in the individual-behavior dimension. The personal attitude and perceived self-efficacy directly affect each other and shape one's behavior (12, 13). Therefore, the promotion of self-efficacy and positive attitudes towards interprofessional collaboration can be effective in increasing interprofessional collaboration among healthcare team members.

The results of the present study showed that participants got lower scores in interprofessional interaction and effective communication with the patient domains. This can be due to a lack of attention to training interpersonal and interprofessional collaboration and communication skills. Effective communication and active listening are among the core competencies of interprofessional collaboration (9) that need to be given special attention to promoting this capability among learners. The results of a study by Watters et al. showed that interprofessional training in a simulated environment increased learners' perceived ability in communication skills, teamwork, leadership, and management in clinical scenarios (40). Therefore, it is necessary to plan for the promotion of learners' commitment to patient-centered and team-based care in the education systems.

The use of self-administered questionnaires, small sample size, and limited disciplines were among the study limitations, which reduced the generalizability of the findings. Since the present study was conducted in a medical sciences university, the results can be influenced by environmental culture and personal and systemic features. In addition, self-reporting may result in exaggeration or underreporting. Therefore, it is recommended to conduct multicenter studies on people involved in different

disciplines of healthcare and rehabilitation services, as well as theory-based interventions, to develop factors affecting self-efficacy and attitudes toward interprofessional collaboration and communication.

Conclusion

Based on the results of the present study, the validity of the scales for self-efficacy in interprofessional collaboration and communication and attitudes toward healthcare teams was confirmed in the present study. Given the significant positive relationship between self-efficacy and attitudes toward interprofessional collaboration and communication and the weakness of participants in the two variables tested, it is suggested that in addition to providing training programs for the promotion of knowledge and skills, supportive opportunities and strengthening of a positive attitude toward interprofessional teamwork be considered by educational administrators. According to the psychometric approval of the mentioned tools, they can be used for formative assessment of learners in different fields to provide the necessary situations for the development of interprofessional collaboration in healthcare teams through continuous evaluation, feedback, and development planning.

Supplementary material(s): is available here [To read supplementary materials, please refer to the journal website and open [PDF/HTML](#)].

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