

Psychometric Properties of 'Attitudes to Health Professionals Questionnaire' (AHPQ) in Iranian Context

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Abstract

Background: The professional life has been frequently made by social interactions in which different forms of professional collaboration appear. Everybody has different attitudes through his/her life that could influence on choosing profession and probably the approach towards inter professional work. In order to study the current attitude towards planning educational courses and assess efficiency of the ongoing educational courses, the present study has normalized the Persian version of the 'Attitudes to Health Professionals Questionnaire' (AHPQ).

Method: After permission from questionnaire developers, in order to confirm face and content validity, the process of translation and back translation was performed. Then it was sent to ten scholars (Delphi Technique) and their comments were considered for providing the final copy. The questionnaire was back translation from Persian into English. The final version was compared with the original questionnaire in terms of concepts. Reliability confirm by test-retest and internal consistency (intra class correlation and Cronbach alpha coefficient). The construct validity was confirmed by exploratory factor analysis.

Results: According to the first phase (67 participants), wide range has caused unnecessary variations in answers; so reliability has been confirmed in larger sample size (104 participants) after decreasing the extent of scale from 10 to 5 points. Exploratory factor analysis was used by main construct and rotation of maximum variance. Final reliability was confirmed by Cronbach alpha as 0. 899. Three underlying constructs of professional ethics, professional autonomy and patient-centered care had been revealed in the questionnaire.

Conclusion: In addition to confirmation of AHPQ construct validity, reveals that such a tool is able to specify the attitude of health team members based on their perceived importance towards the basis of inter professional collaboration. Thus, recognizing and directing priorities of health care team in inter professional collaboration enables us to manage establishment, integrity, sustainability and coordination of group activities.

Background

Our professional life frequently has been made by social interactions with other which appear in different forms of communication and collaboration. It conveys the meaning of sharing, when a group tries to achieve a common goal with spirit of coordination and trust, particularly in the field of professional health. (1) It also causes decrease in hospital costs and patients' mortality (2), promotion of health care and improvement quality of care. (3, 4, 5) Such efficient communication brings about success for physicians and nurses (6), increases productivity, improves patients' conditions (7), and reduces length of hospital stay and medical costs of patients. (8) On the other hand, faulty communication results in making incorrect diagnosis, decreasing patients' participation in their therapeutic programs as well as weakening process of patient instruction. (9)

Attitude has been defined as an indicator of how people feel about their experience. (10) Everybody has different attitudes through his/her life that could influence on choosing profession and probably the approach towards inter professional work. (11)

A wide range of educational curricula are being implemented throughout the world in order to develop inter professional skills. (12–15) Similar curricula are being planned and implemented in Iran as well. (16, 17)

In order to study the current attitude towards planning educational courses and assess efficiency of the ongoing educational courses, an instrument is necessary to measure inter professional attitude. (11) Several tools have been developed for this purpose (18–21) of which, 'Attitudes to Health Professionals Questionnaire' (AHPQ), a questionnaire developed in 2005 by Lindquist et al. can evaluate level of inter professional attitude by 20 bipolar items. It has been organized in 5 sections, could be applied for 5 different health professions, including 20 similar questions for each section. At the end of each question, the respondent was asked to mark the place of an imaginary member of a health team on a 10-point visual analogue scale. The internal consistency for the final copy of AHPQ questionnaire was 0.87 for all 20 items. The exploratory factor analysis specified two categories of caring and service as the underlying constructs of the questionnaire; however, the two items of high-income/ low-income and aggressive/ non-aggressive have been kept in the questionnaire as the separate items. (11) The valid and reliable version of the questionnaire was not available in Iranian context. The present study has normalized the Persian version of questionnaire.

Methods

In present research, validity and reliability of Persian version of AHPQ have been studied. It has conducted on senior medical and nursing students of Tehran University of Medical Sciences.

AHPQ has been developed in order to assess level of inter professional attitude by Lindquist et.al. In 2005. It has 20 bipolar statements with score between 0-10. The higher mean score means higher capability of inter professional skills. The higher score in each sub scale also indicates to higher competence in the related field. (11)

First Phase

After permission from questionnaire developers, in order to confirm face and content, based on modified Toolkit on Translating and Adapting Instruments, the process of translation was performed. (20) Two independent language expert who were familiar with health profession terminology, translated the questionnaire. Then it was sent to ten scholars including psychologists, medical educationists and clinicians (Delphi Technique) and their comments were considered for providing the final copy. Afterwards, the questionnaire was back translation from Persian into English by two other English translators. The final version was compared with the original questionnaire in terms of concepts. The construct validity was confirmed by statistical methods.

Random stratified sampling was used in this research. The samples were 34 senior medical students and 34 senior nursing students. Ethical considerations were followed: Tehran University of Medical Science's Ethics committee approval letter was taken (code: 92-01-61-20964). The related letters for conducting study in hospitals were also prepared. After explaining the research objectives, the informed consent was taken from participants. They were also assured that their data were kept confidential.

In order to confirm reliability by test-retest, the questionnaire was filled by participants two times. Since the recommended interval between conducting retest must be long enough to avoid recall bias and the appropriate time interval to conduct the first test and retest must be 1 to 2 weeks (22), they were re-provided with the questionnaire after a week. Internal consistency was confirmed by calculating Cronbach alpha coefficient. Test-retest reliability was evaluated with intra class correlation coefficient. Based on Nunnally's theory, correlation coefficient equal or higher than 0.7 is acceptable. (23) Data were analyzed using SPSS: 16.

Second Phase

Based on the analysis of the first phase, wide range has caused unnecessary variations in answers; besides, larger sample size is necessary. Therefore, a five-point Likert scale (1-5) was applied in the second phase. In order to confirm construct validity, exploratory factor analysis was used by main construct and rotation of maximum variance. The sample size was calculated as 100 based on standards of psychometric studies, i.e. at least 5 participants for each item (24). Regarding the dropout, 104 were recruited. 52 senior medical students and 52 senior nursing students were introduced in the study through accessible sampling method. All participants returned their questionnaires (response rate=100%)

The condition for factor analysis was also confirmed including sample sufficiency by KMO= 0.844 method and Bartlett's test. Factor analysis was performed at 95% confidence level using SPSS: 16.

Results

Participants were senior students of medicine (6th and 7th year) and nursing (4th year). In the first step, 67 students attended of which 33(49.3%) were nursing student and the rest were medical. 22 students (32.8%) were male and 45(67.2%) were female). In the second step, 104 participants attended in study of which 52(50%) were nursing student and the rest were medical. 37(35.6%) were male and 67(64.4%) were female.

In order to confirm content and face validity, ten experts were asked to read questionnaire, then their comments were considered for preparing final version. The reliability was confirmed by Cronbach alpha as 0.882 in the first phase and 0.899 in the second. ICC was also calculated as 0.882 resulted from the first phase. The confirmation of the conditions under which the factor analysis has been performed including sample sufficiency through KMO method and Bartlett's test were significant. The second phase factor analysis interpretation through underlying constructs and maximum difference in rotation, has

identified three underlying constructs for questionnaire (Tables 1 and 2), which on the whole, revealed 58% variance. These three constructs were classified in order based on the highest percentage of dispersion as follows:

Table 1

Results from the questionnaire(Stage Two)Principal Component Analysis; 3 components extracted

	Component		
	1)37.831% of total Variance) $\alpha = .833$	2) 13.655% of total Variance) $\alpha = .934$	3) 6.538% of total Variance) $\alpha = .893$
Caring/ non-caring	.746	-.193	-.255
Empathetic/ non-empathetic	.778	-.237	-.259
Approachable/ non-approachable	.402	-.354	.242
Values team work/ does not value team work	.633	.154	.232
0			
Sympathetic/ non-sympathetic	.688	-.372	-.154
Thoughtful/ not thoughtful	.825	.037	-.184
Flexible/ not flexible	.772	-.294	.071
Patient-centered/ not patient-centered	.359	.041	.797
Not self-centered/ self-centered	.562	-.357	.304
Gentle/ rough	.729	.028	-.202
Not arrogant/ arrogant	.779	-.090	-.106
Practical/ theoretical	.548	.216	.221
Conciliatory/ not conciliatory	.785	-.014	.186
Vulnerable/ confident	.232	.682	-.175
Non-assertive/ assertive	.416	.728	.046
Does not value autonomy/ values autonomy	.704	.339	.075
Not technically focused/ technically focused	.613	.519	-.051
Not independent/ independent	.162	.740	.034
Poorly paid/ well paid	.297	-.368	.102

	Component		
Not confrontational/ confrontational	.616	- .121	- .292

Table 2

Results from the questionnaire(Stage Two)Principal Component Analysis, Varimax with Kaiser Normalization; Rotation converged in 5 iterations

	Component		
	1	2	3
)37.831% of total Variance) $\alpha = .833$) 13.655% of total Variance) $\alpha = .934$) 6.538% of total Variance) $\alpha = .893$
Caring/ non-caring	.798	.088	.118
Empathetic/ non-empathetic	.841	.058	.135
Approachable/ non-approachable	.340	-.189	.441
Values team work/ does not value team work	.373	.369	.450
0			
Sympathetic/ non-sympathetic	.762	-.100	.211
Thoughtful/ not thoughtful	.758	.331	.178
Flexible/ not flexible	.706	.002	.435
Patient-centered/ not patient- centered	-.073	.162	.857
Not self-centered/ self-centered	.446	-.134	.564
Gentle/ rough	.689	.288	.124
Not arrogant/ arrogant	.726	.196	.248
Practical/ theoretical	.287	.396	.396
Conciliatory/ not conciliatory	.574	.266	.500
Vulnerable/ confident	.052	.721	-.164
Non-assertive/ assertive	.091	.828	.103
Does not value autonomy/ values autonomy	.443	.568	.311
Not technically focused/ technically focused	.366	.704	.133
Not independent/ independent	-.118	.749	-.016
Poorly paid/ well paid	.320	-.239	.274

	Component		
Not confrontational/ confrontational	.683	.110	.018

1. Inter professional collaboration based on “professional ethics” with 37.83% dispersion
2. Inter professional collaboration based on “professional autonomy” with 13.65% dispersion, and
3. “Patient-centered” inter professional collaboration with 6.53% dispersion.

Reliability of questionnaire in second step was calculated as 0.899, on the other hand, reliability of main construct and maximum difference methods for the first second and third subscales were 0.833, 0.934 and 0.893 respectively. The question 19 was the most incompatible item in questionnaire which was regarded in second subscale (professional autonomy). The 19th item had a reverse content compatibility. Although it was less than 0.5 and could be ignored, its consistency with the other items of second subscale, caused to keep it like the original study.

Discussion

The aim of this research was to review the standardization process of AHPQ in Iran in order to study the attitude towards health care professions.

Validity and reliability of AHPQ were confirmed in two fields of medicine and nursing. Also, the participants were selected from main and referral hospitals; therefore, the results may be different in other parts of Iran.

In the first phase, the questionnaire included 20 semantic differential questions ranged between 1–10 point scales. As to the results, extent of scale has caused unnecessary dispersion in responses, also larger sample size is necessary. Decreasing the extent of scale from 10 to 5 points and increasing sample size in the second phase, led to revealing three underlying constructs of professional ethics, professional autonomy and patient-centered care in the questionnaire.

The validity of AHPQ is also evaluated in Danish. The questionnaire in Danish has been valid in its original form; contains 20 items, each consisting of two opposite attributes, serves as verbal anchors for each end of a 10 cm visual scale. The word "Assertive" is unclear in Danish, so for a better understanding the short explanation has been presented in Danish in brackets in front of the word. (25) In our study, according to Delphi it was suggested that the words caring and empathetic should be explained too.

The triple constructs are not necessarily in disagreement with each other. In other words, the individuals with attitudes towards professional ethics or professional autonomy are not necessarily opposed to patient-centered care and vice-versa; but it reveals that they preferred the relevant items. This finding is consistent with the original questionnaire. According to the original questionnaire, the relationship

between the two components has remained constant during the AHPQ tool development process. The components are in direct relationship with each other so that the lower score in the caring Component has a lower score in the subservient component and vice versa. Therefore, professions that are less caring, seems to have less activity than other colleagues in equal positions in the health team and, instead, are more dominant. (26)

For example, most participants believed in respecting ethical principles in communication skills (first factor) such as Caring, Empathy, Approachability, Values team work, Sympathy, Thoughtfulness, Flexibility, Gently, Not arrogantly, Practicality, Conciliatory, Not confrontationally, are the key fundamentals for inter professional collaboration.

The others preferred expertise and professional autonomy of members (second factor) manifested by indicators such as confidence, assertiveness, values autonomy, technically focus, independency and observe economic value of professional services in inter professional collaboration.

At the same time, for the other participants, the patient-centered care and respect for patient rights and conditions (third factor) is the most important basis for inter professional collaboration. Patient-centered care directs the basis of inter professional collaboration, health care team and their relationships in the first two factors, towards patient, and in fact, it encourages the health care member to sacrifice and self-devotion in favor of the patient. The third factor in factor analysis is confirmed weekly but based on maximum difference it is confirmed in a clearly.

Thus, the present study improves the concept of attitude towards inter professional collaboration in health care team compared with the idea suggested by Lindquist et al. (11). In Lindquist study, three underlying constructs has been identified by factor analysis through underlying construct method with factor value higher than 1; but, just two constructs of care and service have been analyzed. Ignoring the third valuable factor has leded that this study covers only 43% population variance and identifies construct by 18 out of 20 items of the questionnaire.

In this study, two methods of underlying constructs and maximum difference in factor analysis, have been applied, therefore, the constructs of all questionnaire's items have been determined and the variance coverage of the population exceeds up to 58%, but also the third factor has been analyzed and finally, all constructs of the questionnaire have been analyzed more appropriately; patient care and providing health care services are of the health care team responsibilities, however, the questionnaire seeks to identify the attitude of health team during such inter professional duties.

Job stress is normally reported by health care professionals, such as nurses. Studies suggest that problems due to work load, inadequate time off from work scheduled and job independency limitations could lead to emotional exhaustion and even hatred toward patients. (27) In contrast, nurses' satisfaction increases, when they feel independency and make good working relationship with their managers and peers. (28) Wageman (2005) and Campion (1993) are the most comprehensive instruments, measure enabling conditions and cover aspects of task design (e.g., interdependence, autonomy), team

composition (e.g., competencies, diversity), as well as organizational climate (e.g., recognition, training). Neither instrument was developed in healthcare, nor have they had much prior use in healthcare contexts. (29) The dominance of the attitude of inter professional autonomy (second factor) in a health care team means that the members of the team do not interfere in the specialized tasks of one another. Therefore, each member, after independently carrying out the relevant duties to his/her own profession, will refer the patient to other team member with the results of his/her work. In this type of attitude, official interaction governs the activity of health care team, and any action by any member has been regarded as interference in his/her own expertise and could result in conflict and in severe cases can conducive to team disjoint.

Whereas, a health care team, in which the attitude of inter professional ethics prevails, the team members' interaction goes beyond official relationships of technical professions, but rather respect and friendly cooperation among team members makes the basis of their interaction. This way, team members may perform organizational tasks of each other with resilience, empathy and compassion, and defend their colleagues' performance before the non-team elements. Patient care is always high on healthcare delivery agenda. Team work is essential.

As a doctor, key player in a team, is trying to improve patient's health. The first priority must be optimal collaboration in order to help patients. Multi-disciplinary care as a team approach is not restricted to some hospitals rich in resources, but when there is challenging environments with limited resources, multi-disciplinary care approach could be included as a clinical performance in a developing country. A team consists of trainees, colleagues and advisors, nurses, medical assistants, managers, social workers, technicians and secretaries. Thus, it is necessary to learn how to work with others members properly. If a member had a hard day, he should be helped, ethics is a topic in WHO. (30) Facilitating team performance behaviors, need to distinguished personal values based on merits or ethics for team members. (31)

Although this attitude increases group cohesion, it should be taken into account that the concepts of flexibility, courtesy, tranquility, sobriety and pacifism in group interactions should not cause to rot patients' rights which could be eliminated by overcoming the attitude towards patient-centered care in inter professional collaborations. In this attitude patients' rights and their health overweight pseudo respect to colleagues and their professional independency. The way of interaction and inter professional collaboration of team could be linked with the missions and visions of forming team. In such a team, the concept of specialized tasks of team members and common ceremonies cause no mental and social barrier for patient care and health services provision. The representative characteristic of high quality health care system is providing health care based on patients' needs and expectations. Most systems where physicians have been supported, benefit of the modified redesign models in which health care is fully adjusted with patients' needs. Planning a medical examination in a clinic, specific for patient's anxiety, encourages them to participate in care control process. (32)

The results of this study suggest that major part of the statistical population, both physicians and nurses, have crossed the mental barrier caused by administrative structure based on specialization and

independence of activities and duties of each profession to a great extent, and have undertaken responsibilities based on inter professional human relationship in health team. In such a society, team work needs to be promoted based on professional ethics and mutual respect among co-workers; besides, prioritizing patient-centered care and sense of responsibility for patient to interpersonal ceremonies and interests of health team members should also be taught.

Conclusion

The present study, in addition to confirmation of AHPQ construct validity, reveals that such a tool is able to specify the attitude of health team members based on their perceived importance towards the basis of inter professional collaboration. Thus, recognizing and directing priorities of health care team in inter professional collaboration enables us to manage establishment, integrity, sustainability and coordination of group activities.

Further research is necessary to study the other professions of health system beyond physicians and nurses. Regarding the results, the weight of the three main constructs needs to be balanced by changing similar items or adding new ones. In the future, it will be tried to apply this tool in order to review attitude change over the time.

List Of Abbreviations

AHPQ

Attitudes to Health Professionals Questionnaire

Declarations

Ethics approval and consent to participate

This article was the result of a research project approved by Tehran University of Medical Sciences (Code: 92-01-61-20964). Participants also were explained the goals and objectives and taken informed consent. Participants were assured that their data will be kept confidential and the results will be reported as analysis of data anonymously

Consent for publications

Not applicable

Availability of data and materials:

The data that support the findings of this study are available from Students' Scientific Research Center but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission

Competing interest:

No conflict of interest has been declared

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Authors Contributions

Maryam Najafi, writing proposal, Data collection

Maryam Karbasi Motlagh, supervising on proposal preparation, comments on manuscript

Minoo Najafi, Writing proposal, Data collection

Mojtaba Khajeh Azad, data analysis

Nazila Zarghi, supervising on conducting project, writing the manuscript

Mandana Shirazi, mentoring the process, comments on manuscript

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