



Interprofessional Shared Decision-Making: Assessment of Behavioral Intention Through a Tool Based on the Theory Planned Behavior

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Abstract

Objectives: The present study was conducted with the aim of psychometric evaluation of a tool measuring behavioral intention in relation to interprofessional shared decision-making based on the theory of planned behavior and its assessment among medical and nursing students.

Methods: This descriptive study was carried out in two stages. In the first stage, the psychometric properties of the interprofessional shared decision-making (IP-SDM) tool were evaluated based on experts' opinions. In the second stage, the participants' behavioral intention was evaluated using the mentioned questionnaire. The questionnaire consisted of five domains of cognitive attitude (2 items), emotional attitude (2 items), subjective norms (3 items), perceived behavioral control (3 items), and intention to use interprofessional shared decision-making (3 items). Content validity of the questionnaire was evaluated qualitatively and quantitatively (using the content validity ratio (CVR) and content validity index (CVI)). Cronbach's alpha coefficient and interclass correlation coefficient (ICC) were used to determine the reliability of the questionnaire. In the second stage, the data were analyzed using descriptive statistics (mean and standard deviation) and Pearson's correlation test in SPSS software.

Results: Qualitative and quantitative content validity of the questionnaire was confirmed based on experts' opinions. The internal consistency of the tool, based on the Cronbach's alpha coefficient, was 0.92, and the tool's repeatability was calculated at 0.84 using ICC. Participants in the study intended to participate in interprofessional shared decision-making.

Conclusions: The behavioral intention measurement tool in relation to interprofessional shared decision-making based on the theory of planned behavior has good validity and reliability in Iran. Regarding the participants' behavioral intention to participate in shared decision-making, it is suggested that a suitable platform for shared decision-making and teamwork between health team members be provided in educational systems.

Keywords: Shared Decision Making, Decision Making, Shared Interprofessional, Theory Planned Behavior, Behavioral Intention

1. Background

The shared decision-making approach has been considered in recent decades as one of the factors influencing the achievement of patient-centered care. The objective of the shared decision-making approach is to integrate patient-centered and evidence-based medicine through sharing information about the benefits and risks of all options available to the patient. Shared decision-making emphasizes effective communication with various members of the health care team and the patient, and takes into account the patient's values and preferences and the informed decision of the patient (1, 2), which can reduce medical errors and improve health outcomes (3, 4).

Shared decisions are hinged upon various factors, such as relationship with the patient, attention to patient preferences,

interaction of different professions with each other and with the patient, negotiation of a decision between different members of the health care team, and resolution of any conflict between them.

In interprofessional collaboration and shared decision-making, the health care team can be considered as a three-dimensional triangle, where the physician, patient, and other health professions form its main dimensions (5). Therefore, establishing effective communication and collaboration between them is one of the prerequisites for implementing a patient-centered approach (6). Interprofessional collaboration and communication skills have been identified as the most important shared decision-making abilities (7). Interprofessional collaboration is defined as the collaboration of different health personnel with different professions with each other,

patients, patient families, other health personnel, and the community to provide quality treatment (8). One of the components emphasized in interprofessional collaboration is the realization of shared decision-making, which is expected to be effectively actualized in the collaborative process between patients and members of health care team in order to reach the best decision (9, 10).

An interprofessional education platform in educational systems creates a process where a group of students or health care providers with different educational backgrounds are trained in a certain period of time. In this process, interaction is an important goal in developing collaboration for the provision of health promotion services, prevention, treatment, rehabilitation, and other health services (11). Interprofessional education is expected to promote collaboration between professionals (6, 12).

Recently, the application of theory in the design of educational programs has been emphasized (13). The application of theory in the education and evaluation process leads to a systematic approach to creating and sustaining change among participants and can guide the teaching-learning process and the assessment of educational outcomes (14).

Legare et al. used the theory planned behavior to examine the behavioral intention of health team members in shared decision-making. They concluded that the participants' intention to participate in interprofessional shared decision-making in providing home-based primary care was positive (4). Considering that the theory planned behavioral constructs addresses individual and environmental factors, it can be appropriate for determining the effective factors in interprofessional shared decision-making. In this study, based on the nature of the interprofessional approach and the influence of various factors such as environmental and attitudinal indices on shared decision-making, the theory planned behavior was adopted. This theory emphasizes on behavioral intention and attitudinal constructs as factors influencing behavioral change. Based on this theory, behavioral intention is the most important determinant of behavior in an individual.

The theory planned behavior is a completed form of the reasoned action theory, where behavioral intention is the most important predictor of behavioral change. Behavioral intention is defined as the probability that a person decides to behave in a certain manner. This theory consists of three constructs. "Attitude towards behavior" is defined as the reaction or position of an evaluator who agrees or opposes a position, individual, or group, which is expressed in the form of feelings, beliefs, and even individual behavior. "Subjective norms" is a predictor of behavioral intention and arises from normative beliefs approved or rejected by the authorities in the community. In other

words, it is the effect of the social pressure perceived by a person to behave or not to behave in a certain manner. This factor is evaluated by the extent of individual's motivation to meet those expectations. The third construct is "perceived control" that depends on the two factors of the existence or absence of facilitators or barriers to behaviors and the extent to which each situation affects the difficulty or ease of performing a behavior (14).

Legare et al. have used several studies to explore interprofessional shared decision-making models and dimensions and have used interprofessional shared decision-making tools based on the theory planned behavior (10, 15).

In the present study, the factors affecting shared decision-making were determined based on the theory planned behavior using a mixed method. Considering that the issue of shared decision-making and interprofessional collaboration is one of the major challenges of the health system at the level of health care team, creating a tool for determining the status of members of health care teams and planning for improvement based on its results can be helpful.

2. Objectives

The present study was conducted to assess the psychometric properties of a tool measuring behavioral intention to participate in shared decision-making and determine the status of medical and nursing students in this regard.

3. Methods

This was an analytical cross-sectional study performed in 2017 at Tehran University of Medical Sciences in two stages. In the first stage, the validity and reliability of the shared decision-making tool were determined based on an interprofessional approach using the opinions of experts in the field. The tool used in this study was the interprofessional shared decision-making (IP-SDM) questionnaire that was developed and validated in the studies by Legare et al. (4) and Stacey et al. (16). This questionnaire consists of five domains of the intention to use interprofessional shared decision-making (3 items), subjective norms (3 items), perceived behavioral control (3 items), cognitive attitude (2 items), and emotional attitude (2 items). In the study of Legare et al., the Cronbach's alpha coefficients for each of the domains of intention to apply interprofessional shared decision-making, subjective norms, perceived behavioral control, cognitive attitudes, and emotional attitudes were 0.87, 0.75, 0.78, 0.74, and 0.88, respectively (4). Each item score ranged from -3 (completely disagree) to +3 (I totally agree).

In the first stage, the inclusion criteria for validity assessment phase were of working experience in clinical skills centers or communication skills courses and in research on behavioral change theories. In this stage, according to previous studies, 10 experts were entered into the study to evaluate face and content validity of the questionnaire. For the evaluation of reliability, we enrolled medical and nursing students with at least one semester in clinical practice.

In the second stage, the participants' behavioral intention was evaluated using the questionnaire. In this stage, samples were medical and nursing students of Tehran University of Medical Sciences who were chosen using the stratified random sampling method. In so doing, individuals were divided into two strata based on medicine and nursing fields. Then, they were randomly entered in the present study. Sample size was calculated at 97 with acceptable error value of 0.05, acceptable mean difference of 0.5, and expected standard deviation of 2.5. Thus, in each group, approximately 50 people were assigned based on field of study (nursing or medicine). A total of 120 questionnaires were distributed, 110 of which were completed. It is worth mentioning that 50% of the sample size ($n = 48$) was included in the study to assess the reliability of the questionnaire.

The face and content validity (quantitative-qualitative) and the reliability of the tool were examined. First, the questionnaire was translated separately by two professors with a good command of English, and a Persian version was prepared by comparing the two translated versions. In the next step, back translation was performed by a fluent English translator who did not know the content of the original questionnaire. In the final step, by comparison of this version and the original English questionnaire by experts, the Persian version of the tool was finalized.

In the first phase of the study, to assess the face and content validity of the questionnaire, a consent form and the Delphi-based implementation guide were sent to the experts. After two weeks of implementing Delphi's first round, expert opinions were gathered. The researchers, while respecting privacy and confidentiality, added all the suggestions in a separate column to the original framework and sent them back to the experts for confirmation. The experts were asked to submit their supplementary comments regarding the items of the questionnaire (Delphi's second round). After two weeks, the comments were collected and analyzed and sent for the implementation of the third round. In this round, no new opinions were added.

Then content validity indices including content validity ratio (CVR) and content validity index (CVI) were calculated. To determine CVR, the experts were asked to choose

from the three options of "necessary", "useful but not necessary" and "not necessary" for each item (17). According to the Lawshe table, the minimum CVR value was obtained ($CVR > 0.62$). The CVI value of each item in the questionnaire was also evaluated using a four-point Likert scale (18). In order to assess the reliability of the questionnaire, internal consistency and repeatability of the tool were assessed by means of the test-retest method. For this purpose, each participant completed the questionnaire at a two-week interval.

To evaluate behavioral intention with regard to interprofessional shared decision-making, the participants completed the mentioned self-report questionnaire.

Internal consistency was established using Cronbach's alpha coefficient and repeatability was tested using interclass correlation coefficient (ICC) (19, 20). In the second stage, descriptive tests (mean and standard deviation) were used to determine the students' behavioral intention. The relationship between the intention scores and demographic variables and field of study was also determined by Pearson's correlation test. Finally, the data were analyzed using SPSS version 19.

The present study was approved by the Ethics Committee of the National Center for Strategic Research in Medical Education of Tehran (ID = 960914).

4. Results

In the validity assessment stage, 10 experts were participated, four of whom were experts in medicine, three were experts in planned theory, and three were experts in clinical education. The participants were 6 women (60%) and 4 men (40%) with a mean age and mean work experience of 49.3 ± 4.2 and 10.2 ± 4.6 years, respectively. Also, 48 nursing and medical students participated in the reliability assessment phase, including 23 males (47.91%) and 25 females (52.28%). Their mean age was 23.2 ± 2.3 years. In the second stage, 110 students (50 nursing students (45.5%) and 60 medical students (54.5%)) with the mean age of 25.04 ± 3.90 years were enrolled. Of these, 44 (40%) were male and 66 (60%) were female.

Based on the results of this study, the validity of this tool was confirmed by the experts. The results of CVR calculation showed that according to the Lawshe table, all the items in the questionnaire obtained values of more than 0.64 in this index and remained in the questionnaire. In calculating CVI, all the items obtained values of more than 0.79 and remained in the questionnaire. Finally, the content validity of the questionnaire was confirmed quantitatively and qualitatively. Internal consistency of the tool was established by Cronbach's alpha coefficient of 0.92 and its repeat anility was confirmed by ICC of 0.84 (Table 1).

Table 1. Reliability Indices of the Tool Measuring Behavioral Intention for Interprofessional Shared Decision-Making

| Domains | ICC | Cronbach's Alpha |
|-------------------------------|------|------------------|
| Intention to apply | 0.73 | 0.89 |
| Subjective norms | 0.77 | 0.86 |
| Perceived behavioral controls | 0.76 | 0.80 |
| Cognitive attitude | 0.75 | 0.88 |
| Emotional attitude | 0.71 | 0.84 |
| Total questionnaire | 0.84 | 0.92 |

Abbreviation: ICC, interclass correlation coefficient.

The participants' mean score regarding intention to participate in interprofessional shared decision-making was 1.11 ± 0.51 (Table 2). Correlation test was used to determine the relationship between the intention scores and demographic variables (age and sex) and field of study. Based on the results of this study, there was a significant relationship between the students' behavioral intention and their age ($P = 0.001$, $r = 0.33$), field of study ($P = 0.001$, $r = 0.54$), and gender ($P = 0.040$, $r = 0.19$).

5. Discussion

Based on the theory planned behavior, behavioral intention is defined as one of the most important predictors of behavioral change. In this study, the psychometric properties of the instrument for measuring behavioral intention of participants were evaluated, and the results indicated that the mean scores of participants in relation to shared decision-making were positive, that is, they intended to participate in shared decision making.

In the patient-centered approach, emphasis is placed on respectful treatment and responding to patients' preferences, needs, and values in order to ensure that clinical decisions are guided by patient values. In this definition, the importance of collaborative work between the patient and the health care team to create the best possible outcomes has been emphasized (21).

In order to educate and direct members of health care teams to implement a collaborative and patient-oriented approach, educational plans and evaluations should be tailored to that end. The use of appropriate and theory-based measurement tools is important in the orientation of educational programs. In the present study, the tool was based on the theory planned behavior and its psychiatric properties were established using experts' opinions. The results showed that the instrument for measuring behavioral intention in relation to shared decision-making has good validity and reliability in Iran. Studies have mainly emphasized on assessing attitudes, and most results have been

positive in relation to attitudes towards shared decision-making (4). Although based on theory, behavioral intention has been identified as a predictor of behavior; limited studies have been conducted on behavioral intention in relation to shared decision-making (22). Using a psychometric tool can help determine the factors influencing interprofessional shared decision-making.

Behavioral intention as an effective factor in behavioral change is a complex concept that affects attitudinal constructs, subjective norms, and perceived behavioral control. The results of this study revealed that the participants intended to participate in shared decision-making. The cognitive attitude and perceived control associated with shared decision-making had the highest mean scores among the studied constructs. Considering the positive attitude that affirms the consent of individuals with interprofessional shared decision-making process, the perceived control construct measures the facilitators or barriers to perform a behavior.

In fact, planning for creating facilitating opportunities and factors supporting shared decision-making can provide a platform for shared decision-making in clinical settings. In various studies, the perceived control factor has been identified as one of the factors influencing behavioral intention (4, 23), which was consistent with the results of this study.

Legare et al. in a study based on the theory planned behavior enrolled participants from various professions including nurses, social workers, occupational therapists, physiotherapists, nutritionists, and physicians to provide home-based treatment services. The results showed that although the team members collaborated with each other, the factors affecting their behavioral intention were diverse. The results of their research showed that the type of occupation affects behavioral intention and shared decision-making (4). In the study by Legare et al., the two factors of perceived control and subjective norms among nurses and emotional attitudes among rehabilitation staff influenced behavioral intention. Therefore, it is necessary to consider educational interventions proportional to the factors affecting behavioral change among members of different professions (4).

Based on the results, there was no significant relationship between the scores of behavioral intention and field of study. This finding could be due to limited sample size and the limited number of occupations enrolled in the research. Deschenes et al. (23), in a study on the basis of the theory planned behavior examined the factors affecting the behavioral intention of dietitians to choose shared decision-making in two types of behaviors related to providing different treatment options and clarifying the patient's preferences. They concluded that the factors affect-

Table 2. Participants' Intention to Participate in Interprofessional Shared Decision-Making

| Theory Planned Behavior Concepts | Mean \pm SD | Range | |
|--|-----------------|---------|---------|
| | | Maximum | Minimum |
| Behavioral intention | 1.24 \pm 0.65 | 2.67 | -0.67 |
| Subjective norms | 0.87 \pm 0.72 | 3.00 | -1 |
| Perceived behavioral controls | 0.91 \pm 0.55 | 2.00 | -3 |
| Cognitive attitude | 1.63 \pm 0.79 | 3.00 | -2 |
| Emotional attitude | 1.06 \pm 0.67 | 2.33 | -1 |
| Behavioral indentation to shared decision-making | 1.11 \pm 0.51 | 2.07 | -0.29 |

ing the choice of shared decision-making differed in these two behaviors, and only the perceived control factor was similar in both behaviors.

In behaviors related to the clarification of patient preferences, "professional attitudes and norms", and in the behavior of providing treatment options to the patient, "subjective and moral norms" were effective (23). Guerrier et al. found that behavioral intention to participate in shared decision-making had no effect on the physicians' intention to choose the use of clinical guidelines. Training shared decision-making also did not affect it (1).

In sum, it can be stated that the behavioral intention of individuals in different behaviors is affected by various factors that can be addressed in different studies. Further studies are recommended to investigate the factors affecting behavioral intention in various treatment behaviors as well as the factors affecting the attainment of behavioral intention and behavior. The use of mixed methods can help determine the status of health care team members in relation to shared decision-making and explain the factors influencing the choice of shared decision-making behavior.

In this study, one of the factors affecting the process of patient-centered care and interprofessional collaboration was studied. In this regard, the status of medical and nursing students was also evaluated. The results showed that planning for the use of various mechanisms such as training to improve people's intention to use interprofessional shared decision-making is necessary. In this study, an interprofessional approach to medicine and nursing fields, which are considered to be the main health team professions, was adopted. It is suggested that other team members from different professions be investigated in future studies. Also, the limited sample size can be considered as a limitation of this study. In addition, only the face and content validity of the questionnaire was determined in this study, future studies are recommended to evaluate the construct validity of this tool.

5.1. Conclusions

The findings of this study showed that the tool for measuring behavioral intention in relation to interprofessional shared decision-making based on the theory planned behavior has good validity and reliability in the context of Iran. Also, the participants intended to participate in interprofessional shared decision-making. Therefore, proper planning taking into account factors affecting behavioral intention in relation to interprofessional shared decision-making is necessary in order to provide a suitable basis for achieving shared decision-making and teamwork among the members of the health team in educational systems.

Supplementary Material

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

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Footnotes

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