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Shared-decision-making Behavior in Hospitalized Patients: Investigating the Impact of Patient's Trust in Physicians, Emotional Support, Informational Support, and Tendency to Excuse Using a Structural Equation Modeling Approach

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Abstract

Patient participation in care decisions is facilitated by shared-decision-making (SDM). This study, therefore, aims to explore the impact of patient's trust in physicians, emotional support, informational support, and tendency to excuse on SDM. A cross-sectional study was conducted at the medical–surgical wards of 6 similar-sized public hospitals in Tabriz, northwest Iran, using a self-administered questionnaire, with 321 cases collected from October to December 2019. The structural equation modeling (SEM) analysis was used to test the hypothetical model. Using the SEM approach, the findings fully confirmed the study hypothesis, and patients' trust in physician (Beta = −0.44), emotional support (Beta = 0.29), tendency to excuse (Beta = 0.18), and informational support (Beta = 0.58) predicted the inpatient's SDM behavior ($R^2 = 0.65$, goodness-of-fit index = 0.902). To improve patient outcomes, physicians might advise incorporating techniques such as improving patient trust, informational and emotional supports to improve SDM. Improving the psychosocial skills of physicians also seems to be essential to help patients express their concerns.

Keywords

shared-decision-making, patient's trust in physicians, emotional support, informational support, tendency to excuse, structural equation modeling

Introduction

Shared-decision-making (SDM) is a well-known approach to implementing patient-centered care (1). When faced with the challenge of making decisions, health care professionals share the best available data, and patients are supported to consider alternatives and achieve balanced choices (2). According to a recent series of studies on the creation of activities to support SDM, 19 out of 22 various countries have health care policies that encourage or even recommend SDM adoption (3). While in some countries, policy systems require SDM adoption, findings of research in other countries point to weak performance in regular clinical practice (4).

Recent research has recognized the significance of considering individual and organizational factors that influence SDM implementation (5). The current research is based on the hypothesis that there is an association between SDM and social support (6). In general, social support distinguishes between 4 types of support involves appraisal, informational, instrumental, and emotional support (7). Furthermore, it already seems to be empirically proven that SDM is linked to the patient tendency to excuse and patient trust in physicians (6).

For example, trust and SDM are considered to be mutually related, but the processes by which they are associated are not well established (8). Persons' trust in other individuals or organizations is characterized as their anticipation that

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certain people or organizations will meet their obligations. In common, trust in physicians is categorized into 5 categories: competence, agency, control, confidentiality, and disclosure (9).

While the relation of SDM and patient trust has been confirmed in previous studies (10,11), little is known about the importance of other factors, such as emotional support, informational support, and tendency to excuse, in the SDM implementation. Empathy and concern are all examples of emotional support while informational support offers help in the form of information, knowledge, and talent that can be used to solve problems (7). The term "tendency to excuse" also refers to a patient's tendency to legitimize faults and inconveniences throughout a hospital stay (6).

The SDM paradigm arose as a solution to get the patient's and clinician's wishes together (12). In the typical paternalistic paradigm, information flows through one direction from the clinician to the patient, and the psychiatrist and other health providers are solely responsible for addressing treatment options and make the final decision with little or no involvement from the patient. The 3 foundations of high-quality SDM are 2-way information exchange between the clinician and patient, consultation based on the patient's needs, as well as patient and clinician engagement in the final decision-making plan (13). SDM has been linked to less decisional regret and distress regarding treatment plans, as well as optimized health outcomes and patient satisfaction (14).

While there is plenty of evidence of SDM's clinical benefits, there is a substantial gap in the literature when it comes to the contributing factors listed earlier. A better understanding of factors that may hinder or benefit the SDM implementation in routine care may aid in developing strategies to address these factors. This study, therefore, aims to explore the impacts of patient's trust in physicians, emotional support, informational support, and tendency to excuse on SDM. The following are the main hypotheses of the study (Appendix 1 in the Supplemental material):

1. Patients' trust in physicians affects their SDM behavior.
2. Emotional support affects patients' SDM behavior.
3. Tendency to excuse affects patients' SDM behavior.
4. Informational support affects patients' SDM behavior.

Materials and Methods

Study Design, Procedure, and Sampling

A cross-sectional study was conducted at the medical-surgical wards of 6 similar-size (at least 150 beds) public hospitals in Tabriz, northwest of Iran, from October to December 2019. These are noneducational hospitals in which no trainees are involved in care. Multidisciplinary levels of care such as gastroenterology, nephrology, oncology, urology, and medical cardiology care deliver in these wards.

The sample size was determined based on the need for a structural equation modeling (SEM) study, which implies that a minimum of 200 respondents was needed for an adequate proposed model (15). Convenience sampling was used to recruit the study participants. The sample involved patients aged ≥18 years who were not cognitively impaired and were hospitalized for at least 1 day. Patients who were unable to make health-related decisions due to their age or disability and those under the age of 18 years or who were unable to comprehend the questionnaire were excluded from the study.

Within the study period, participants who had completed their medical care (eg, therapeutic procedures or surgeries) were chosen from each of the sampled hospitals. Oral informed consent was obtained before the patients' participation in the survey.

Measures

A single survey instrument involving 5-sections was used to gather data. There are 17 items in the scale, across the dimensions of patients' trust in physicians (3 items), emotional support (4 items), informational support (3 items), tendency to excuse (3 items), and SDM behavior (3 items). The original questionnaire was developed by Ommen et al. (6) based on a project entitled "Cologne Patient Questionnaire—to measure the involvement of patients in care" (16) in Germany. The items of the questionnaire used a 4-point Likert scale from 1 for "strongly disagree" to 4 for "strongly agree." All the items were added together and then divided by the total number of items. In addition, demographic information was gathered by questions, including age, gender, educational status, and employment status. The Cronbach's alphas of the questionnaire were reported from 0.749 to 0.863 for subscales (6).

The Translation, Reliability, and Validity of the Questionnaire

First, a permit was obtained from the author for translating and applying the scale. Then, the questionnaire was translated from English to Persian by a modified forward/backward translation process (17), and the original Persian version of the questionnaire was developed based on comparing both translations. Subsequently, a proficient translator with no prior knowledge of health and clinical behavior translated the Persian text back into English. A final Persian version of the questionnaire was designed through a case-by-case comparison of the original and back-translated versions. Following this, the validity of the questionnaire was tested by a multidisciplinary board of health specialists and professors. These experts were requested to present their comments about the rationality, appropriateness, attractability, and rational order of items, as well as the succinctness and inclusiveness of the questionnaire.

To test the understandability and readability of the questionnaire, its face validity was assessed by 10 outpatients.

Simplification and modification of some items were performed based on the commentaries and viewpoints presented by the professionals and patients. Average values of content validity ratio and content validity index were 0.86 and 0.81, respectively, for the entire 17 items of the questionnaire. The reliability of the questionnaires was assessed by the internal consistency procedure, resulting in a total Cronbach's alpha of 0.84 for the scale.

Data Analysis

Data were analyzed statistically using SPSS version 20 (IBM Corp.) and IBM SPSS AMOS version 20. Descriptive statistics were used for the characteristics of the patients and evaluated parameters. Cronbach's alpha was determined for the variables. The structural equation model (SEM) was established to explore the relationship between endogenous and exogenous structures. Data were examined for normality, outliers, and multicollinearity prior to SEM.

The hypothesized model's fit was evaluated using multiple criteria: (a) chi-square/degrees of freedom (DF) < 3, (b) goodness-of-fit index (GFI) > 0.90, (c) standardized root mean square residual < 0.08, (d) comparative-fit index (CFI) > 0.90, (e) normed-fit index (NFI) > 0.90, incremental fit index (IFI) > .90, and (f) root mean square error of approximation (RMSEA) < 0.07 (18). The magnitude of path coefficients (standardized coefficient) and their significance were used to test hypotheses about the structural relationships of the objects in the final model. The factor capability of the sample was assessed by evaluating the fitting of the factor analysis, the Kaiser–Meyer–Olkin (KMO) indicator of sampling adequacy (>0.6 was assumed satisfactory), and the Bartlett test of independence.

Results

Participants' Characteristics

From a total of 420 questionnaires administered among the study participants, 321 completed questionnaires were returned (response rate = 76%) in this study. Table 1 outlines the characteristics of the participants. SDM behavior had significant correlations with age ($P = 0.031$), education level ($P < .01$), insurance ($P = .001$), residence ($P = .013$), and employment status ($P = .022$). However, SDM behavior had no significant correlations with gender, marital status, and ethnicity.

The mean and standard deviation (SD) for all variables of the scale are reported in Appendix 2 in the Supplemental Material. All the variables in this research had kurtosis and skewness values in an acceptable range; skewness between −1 and 1 while kurtosis between −2 and 2 (19) and as a result the presumption of a normal distribution being achieved. The Cronbach's alpha was assessed for internal consistency evaluation and the results with the variables ranged from 0.723 (SDM behavior) to 0.963 (trust in physician) (Appendix 2 in the Supplemental material).

Table 1. Mean Differences in Total SDM Behavior According to the Participants' Characteristics ($n = 321$).

Variables	*n* (%)	Mean (SD)	*P*
Gender[a]			
Male	119 (37.1)	3.36 (0.52)	.370
Female	202 (62.9)	3.30 (0.59)	
Marital status[a]			
Single	110 (34.3)	3.29 (0.62)	.451
Married	211(65.7)	3.34 (0.53)	
Age[b]			
≤25	63 (19.6)	3.27 (0.08)	.031
26-35	67 (20.9)	3.41 (0.05)	
36-45	78 (24.3)	3.18 (0.07)	
≥46	113 (35.2)	3.40 (0.04)	
Education level[b]			
Illiterate	22 (6.9)	2.5 (0.10)	.000
High school or lower	70 (22.7)	3.29 (0.06)	
College or more	229 (70.4)	3.41 (0.03)	
Insurance[a]			
Yes	291 (90.7)	3.29 (0.57)	.001
No	30 (9.3)	3.66 (0.25)	
Residence[a]			
Urban	277 (86.3)	3.52 (0.30)	.013
Rural	44 (13.7)	3.29 (0.59)	
Ethnicity[b]			
Turk	213 (66.4)	3.29 (0.04)	.91
Fars	52 (16.2)	3.25 (0.08)	
Kurd	10 (3.1)	3.48 (0.06)	
Lur	46 (14.3)	3.52 (0.13)	
Employment status			
Unemployed[c]	80 (24.9)	3.28 (0.06)	.022
Self-employed	50 (15.6)	3.42 (0.07)	
House wife	127 (39.6)	3.23 (0.05)	
Worker	64 (1.9)	3.45 (0.59)	

Abbreviations: SDM, shared decision-making; SD, standard deviation.
[a]Independent *t*-test.
[b]Analysis of variance.
[c]Including retired people and students.

The KMO measure of 0.796 and Bartlett tests ($\chi^2 = 2{,}613.3$, df = 136, $P < .001$) implied that the sample size and correlations for the factor analyses were acceptable. The standard loading factors and measurement error, as well as results of fitting indices of confirmatory factor analysis models, are shown in Appendix 3 in the Supplemental material. All items of patients' trust in physicians, emotional support, tendency to excuse, and SDM behavior were significant (the loading factor > 0.4) (20) in its items. As a result, no item was removed (Appendix 3 in the Supplemental material).

According to Pearson's correlation coefficient matrix of the components, SDM behavior was significantly correlated with all other latent variables ($P < .01$), which were used to construct the most appropriate SEM (Table 2).

Analysis of the Hypothetical Model

The final structural model fits the data well enough with the model-fit indices as follows: chi-square/df = 2.935, RMSEA = 0.078, CFI = 0.914, NFI = 0.877, IFI = 0.915, and GFI =

Table 2. Pearson Correlations of Study Variables.

Variable	1	2	3	4	5
1. Patients' trust in physician	–				
2. Emotional support	−0.111*	–			
3. Tendency to excuse	−0.064	0.523**	–		
4. SDM behavior	−0.404**	0.310**	0.255**	–	
5. Informational support	−0.245**	0.902	0.082	0.436**	–

*Correlation significant at 0.05, **Correlation significant at 0.01.

0.902 (Figure 1). Using the SEM approach, the findings confirmed the suggested study hypothesis, and patients' trust in physicians, emotional support, tendency to excuse, and informational support predicted the inpatient's SDM behavior, and this prediction was very good ($R^2 = 0.65$) (Table 3).

Discussion

The results of SEM analysis showed that patients' trust in physicians, emotional support, tendency to excuse, and informational support was significantly related to inpatient's SDM behavior. Additionally, higher patient trust in physicians was correlated with a lower level of SDM. There is evidence that higher patient trust has the ability to either improve or decrease patients' SDM (21). In line with our research, it has previously been shown that patients' "blind trust" in their doctors is associated with their desires for a passive role, while lower trust is correlated with preferred autonomous roles (10). In contrast, physician–patient relationships built on trust have the necessary context for SDM in a study by Lown et al. (11). Trust in physicians helps to persuade the patients to reveal their personal information and, in turn, their SDM process promotion (22). A study by Niranjan et al. (23) among patients with metastatic breast cancer suggests that patient autonomy and trust in doctors do not conflict in the SDM process, but rather live in harmony as a balancing act between professional opinion and lay viewpoints. Physicians might advise incorporating techniques to both engender their patients' trust and reinforce SDM to ultimately improve the outcomes of patients.

In this study, there was a significant positive correlation between the perceived emotional support of patients and their SDM behavior. The current results concur with other researchers who have identified emotions as a factor influencing SDM (24–26). The existing literature also emphasizes the significance of raising awareness of emotions as social information affecting SDM (25). Given that the "Ottawa Decision Support Framework" emphasizes the importance of targeted decision support, additional research may help to better understand how emotional states affect the SDM mechanism, with consequences for intervention use (24). When making critical decisions, emotions play a considerable role in our decision-making process. Emotions are necessary for decision-making, but they may also bias decisions (consciously or subconsciously). It has made some significant advancements in patient-centered clinical decision-making (25). This involves a greater reliance on patient-reported events, which have been shown to improve the execution of collaborative decision-making and can act as the foundation for clinical decision support systems (14). The use of patient decision aids is another technique that has been found to enhance decision-making (27).

The current study also found that tendency to excuse had a low but significant relationship with SDM, thereby confirming the third study hypothesis. It is important to be present not only physically but also emotionally and mentally when approaching patients and to be mindful of patients' areas of weakness to prevent flaws in interactions (28). As patients are required to adjust rapidly to hospital life, reduce their expectations, and be willing to overlook unfavorable circumstances, it was thought that the majority of inpatients might be able to disregard small inconveniences, which might occur throughout their hospitalization. However, the evidence suggests that patients only tolerate minor disruptions or discomforts (29). Instead of only supplying information, we believe that health care professionals should participate in conversations with patients and their close relatives about their needs. This approach is critical for providing health services founded on a shared understanding.

Our findings suggest a significant positive relationship of informational support with SDM, which confirms the last study hypothesis. Access to informational support is crucial, specifically because an absence of informational support might lead to a sense of isolation. The findings of the present study highlighted the relationship between SDM and informational support, which is in contrast with a previous study showing no significant relationships between informational support and SDM (6). Since SDM continues to evolve, it is essential to consider which informational support is needed for patients to feel adequately prepared to participate (30). The care plan, medical problems, and practical issues are examples of informational support that ought to be educative in nature and accessible to family members (31). According to previous studies, patients decided on the value of having health care professionals to address clinical conditions and care plans with (32). The patients' requests for informational support varied based on their particular traits and where they were in the illness's progression. Regardless of this, patients accepted that effective contact with health care professionals is critical (33).

Finally, the present study also revealed that SDM behavior differs with respect to demographic variables, including age, education level, insurance, place of residence, and employment status. Interestingly, recent studies have yielded divergent results on the topic. Some evidence confirms our results (34, 35), while others show a nonsignificant relationship between SDM and demographic variables (6, 36, 37). The reason for this difference is unclear and further research is required to ascertain the true interrelation, or lack therein, between SDM and these factors.

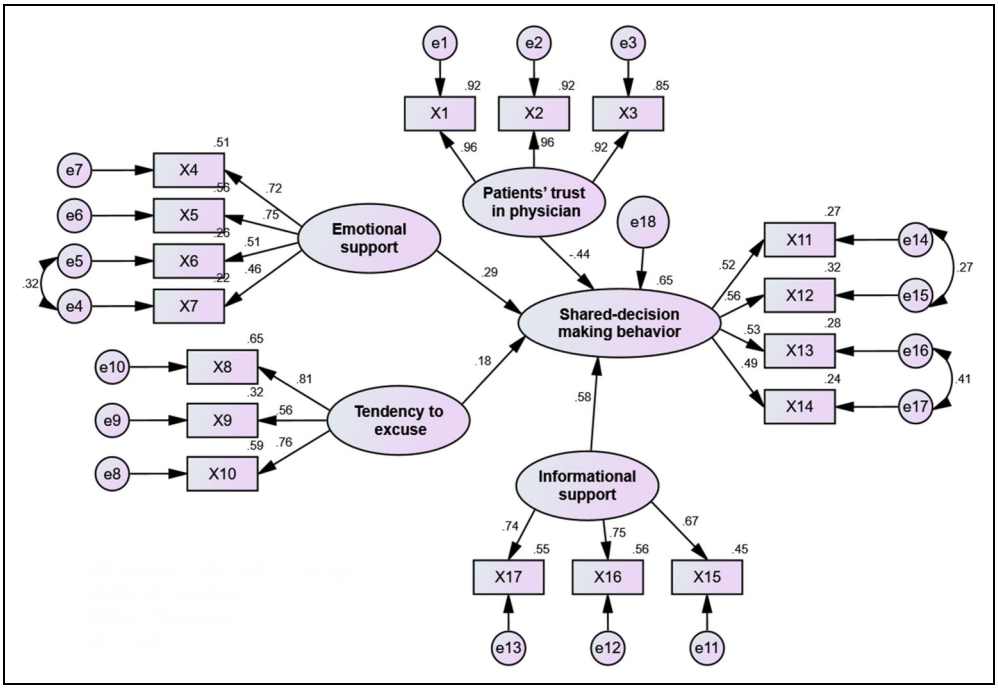

Figure 1. SEM method for analysis of factors influencing SDM behavior in hospitalized patients.
Abbreviations: SEM, structural equation modeling; SDM, shared-decision-making.

Table 3. Results of SEM.

Hypothesis	Path	Standardized coefficient	C.R.	*P*	Result
H1	Patients' trust in physician→SDM	−0.437	−5.540	.00	Confirmed
H2	Emotional support→SDM	0.293	3.305	.00	Confirmed
H3	Tendency to excuse→SDM	0.182	2.409	.016	Confirmed
H4	Informational support→SDM	0.584	5.701	.00	Confirmed

Abbreviations: SDM, shared decision-making; SEM, structural equation modeling; C.R., critical ratio; R^2, 0.65.

Limitations

The 3 research limitations mentioned therein must be carefully considered for this study. First, the demographic composition was a constraint since all respondents were patients from Tabriz public hospital medical–surgical wards. Second, since a self-reporting questionnaire was used here, there may be data bias. As a result, additional studies could complete the partial least squares structural equation modeling (PLS-SEM) model by incorporating demographic and latent variables in the model at the same time.

Conclusion

This study explored the effects of patients' trust in physicians, emotional support, tendency to excuse, and informational support on SDM behavior in Iran, with 321 hospitalized patients participating in the study. The results of the analysis of variance and *t*-test identified that SDM behavior had significant correlations with age, education level, insurance, place of residence, and employment status. Using the SEM approach, the findings fully confirmed our suggested study hypothesis, and patients' trust in physicians, emotional support, tendency to excuse, and informational support predicted the inpatient's SDM behavior and this prediction was very good ($R^2 = 0.65$). These results offer not only theoretical evidence for the preferred methods of patients' SDM conduct but also a valid roadmap for restoring SDM in practice.

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Authors' Note

The research was approved by the Ethics Committee of Tabriz University of Medical Science (the approval code IR.TBZMED.REC.1397.617). Participation was entirely voluntary, confidential, and uncompensated. Before the patients took part in the survey, they gave their verbal informed consent. All procedures in this

study were conducted in accordance with the Ethics Committee of Tabriz University of Medical Science (IR.TBZMED.REC. 1397.617) approved protocols (60750). Verbal informed consent was obtained from the patients for their anonymized information to be published in this article.

Authors' Contributions

ZCH designed and conducted the study, performed the analysis, and drafted the manuscript. ZCH advised on the study design and assisted in data analysis. ZCH and SMSI assisted in data collection, read, and approved the final manuscript.

Declaration of Conflicting Interests

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Supplemental Material

Supplemental material for this article is available online.

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