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Research Article

Attitudes of Health Professionals towards Integrated Health Campuses: A Second-Order Confirmatory Factor Analysis

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City hospitals (integrated health campuses) are a remarkable health policy action that has recently been implemented to meet the increasing public health needs. Health care professionals work in a collaborative atmosphere and provide interprofessional care on health campuses. This study is designed to explore the confirmatory factor structure of the Initial Attitudes towards Integrated Health Care (ATIHC) scale in Turkish health professionals, which was used to evaluate the attitudes of health professionals, consisting of senior managers and specialist physicians, towards city hospitals. Data were gathered from 196 health professionals, including senior managers and specialist physicians, working in a city hospital located in the rural part of the country. Confirmatory factor analysis (CFA) was used to analyze the data through the first-order and second-order stages. The performance of the second-order CFA model is meaningful ($p < 0.00001$) and acceptable ($X^2/df = 1663/430 = 3.8$; RMSEA = 0.12), and the goodness-of-fit indices are good (CFI = 0.92; NFI = 0.89; IFI = 0.92). The ATIHC scale, which consists of four latent variables under the second-order latent "attitudes" variable, better represents the sample, and health care quality and efficiency ($\beta = 1.03$, $p < 0.01$) and coordination of care components ($\beta = 1.02$, $p < 0.01$) are the prominent factors in explaining the attitudes of health professionals towards city hospitals. The Turkish version of ATIHC is a reliable and valid instrument for measuring the attitudes of health professionals towards city hospitals.

1. Introduction

City hospitals (integrated health campuses) are defined as integrating multipart structures of health care organizations in terms of management processes [1]. City hospitals have been one of the strategic health policy actions of the Turkish government since 2017 [2]. These hospitals are built with a public-private partnership model and strategic collaboration with health sector organizations and stakeholders [3]. This is a new and visible health policy action in Turkey, which is an emerging country and has become one of the most controversial issues in the Turkish health system in recent years. The main objectives in the realization of city hospital projects are to build health facilities with functional and modern architectural understanding, combine small-capacity public health facilities under larger campuses, increase the quality and efficiency of the health services offered to high standards, and share the risks by reflecting the cost of health services to private sector entrepreneurs [4–6]. City hospitals have an interdisciplinary working environment and multidisciplinary teamwork; interdisciplinary, transdisciplinary, and effective collaborative practices are provided in these hospitals in order to provide high-quality patient care [7, 8].

Interprofessional collaboration in health care is defined as an ongoing, active partnership among professionals from different backgrounds and cultures, possibly representing different organizations and sectors, working together to provide health care services to the public [9]. Team-based, interprofessional collaboration models involving the health and industrial sectors are considered more suitable for addressing complex health problems [10].

Changing health care systems with increasingly complex care needs require innovative and efficient patient care concepts. These concepts require core competencies such as effective communication among health care professionals, teamwork, and interprofessional collaboration [11–13]. Health professionals with different backgrounds provide care in an interprofessional working atmosphere. They have different perspectives and attitudes towards health policies and health system regulations [14]. However, collaborative work refers to smooth working relationships when faced with interdependent and highly interrelated tasks [15–17]. Understanding the attitudes of health care professionals towards health system regulations broadens the perspectives of health policymakers by considering the expectations of interprofessional collaboration [18]. Integration between professionals, which is often equated with health care teams, is very important in complex structures, such as city hospitals, where different occupational groups work together with shared responsibilities and improve the health status of the community [19]. The attitudes and intentions of health professionals towards health system regulations can inform health policymakers that may lead to improvements in the quality, efficiency, and effectiveness of health care [14, 20, 21].

This study is designed to explore health professionals' attitudes and intentions towards city hospitals that can inform health policymakers and improve the quality of health policies. In this study, the Initial Attitudes toward Integrated Health Care (ATIHC) scale, which was developed by Zvonkovic [22], was used to evaluate the attitudes of health professionals, including senior managers and specialist physicians, towards city hospitals. This scale was developed to determine the attitudes of health professionals towards integrated health services. A 6-point Likert scale (1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = somewhat agree; 5 = agree; 6 = strongly agree) was used to rate each item included in the scale. The purpose of this research is to determine the relationship between the dimensions of the ATIHC scale, such as health care quality and efficiency, coordination of care components, interdisciplinary care teams, and integration of health services in city hospitals, based on the evaluations of senior managers and specialist physicians working in a city hospital. After the presentation of descriptive statistics for senior managers and specialist physicians, the results of the confirmatory factor analysis (CFA) is presented which was carried out using the data collected through the 32-item ATIHC questionnaire. The original contributions of this study include (i) understanding the attitudes of health professionals towards city hospitals; (ii) stringent testing of the model and exploring the dimensions of the ATIHC scale with confirmatory factors and internal consistency analysis; (iii) providing health policy recommendations for interprofessional care coordinators and highlighting the need to consider the expectations of health professionals from visible health policies; and (iv) according to our existing knowledge, this study is the first application of second-order CFA to the ATIHC scale to prove all items in each latent variable.

2. Methods

2.1. Scale, Data Collection, and Participants. In this study, CFA was conducted to adapt the "Initial Attitudes towards Integrated Health Care (ATIHC)" scale developed by Zvonkovic [22] to the Turkish language to determine and compare the attitudes of healthcare professionals towards city hospitals. The original questionnaire, which is used as a data collection tool, has four dimensions consisting of (i) health care quality and efficiency, (ii) coordination of care components, (iii) interdisciplinary care teams, and (iv) integration of health services.

After obtaining the necessary written permissions from the author for the language validity of the ATIHC scale, the original questionnaire was translated into Turkish as the first step. It is recommended that people who are familiar with and have knowledge of the terminology of the translated scale take part in the translation process of the scale [23, 24]. Accordingly, the scale was first translated into Turkish separately by two people who were knowledgeable about the culture of the original scale but whose mother tongue was in the target culture's (Turkish) language and who knew English very well. After the scale was translated into Turkish by two translators who are experts in their fields and who have command of the English language, the scale translations were analyzed by three different experts and turned into a single translation with a common decision. Afterward, back-translation and two back-translated versions of the obtained translation scale were translated back into English by an expert linguist. After it was determined that there was no difference between the original questionnaire and the translated questionnaire, the Turkish version was checked again by a faculty member and took its final form so that it could be submitted for expert opinions. During the pilot testing of the prefinal version of the scale, it was presented to the opinions of 30 experts, including 5 senior managers, 18 specialist physicians, and 7 faculty doctors. Experts were asked for their opinions on inappropriate expressions during the interviews. The scale was restructured, considering all expert opinions, and statements that were deemed inappropriate were changed. The approved changes were applied to the new Turkish form, and the scale took its final form. Regarding the minimum sample size required for CFA, there are different opinions in the literature. A group of researchers considered the required sample size on the basis of the number of people. Accordingly, it was stated that the minimum sample size for CFA should be 100 [25, 26], it should be greater than 100 [27], it should be at least 100–200 people [28], it should be between 200–400 [29], and it should be greater than 250 [30, 31]. Some researchers argue that the minimum sample size will vary according to the number of items in the measurement tool. According to one view, the minimum sample size should be around 3–6 times the total number of items in the measurement tool [32], while another view argues that it should be at least 5 times [33] or 50–100 participants per variable [34]. According to another view in the literature, the minimum number of participants required is defined as a wide range starting with 3 times the number of variables and going up to 50 times [35]. In line with these different views, the scale adapted within the scope of this study regarding the minimum sample size contains a total of 32 items, which must be at least 100 according to Gorsuch [25] and Kline [26], 96–192 according to Cattell [32], and 160 according to Hair et al. [33]. Participants in this study consisted of 195 people. Therefore, in line with all the different views mentioned above, the number of participants (sample size) and the data collected are more than the minimum sample size required for confirmatory factor analysis and are therefore sufficient and appropriate for CFA.

This study was carried out at an integrated health campus (city hospital), which was located in rural parts of the country. Data collected from health professionals, consisting of senior managers and specialist physicians working in a city hospital between December 2021 and March 2022, were included in the scope of the study. Face-to-face surveys were performed with a total of 196 health professionals working in a city hospital.

2.2. Data Analysis. The data obtained within the scope of the research were transferred to the SPSS (25) program in a computer environment. Before starting the analysis of the data, the data set was reviewed in terms of missing data and outliers and made ready for analysis by making the necessary adjustments. In the study, the descriptive characteristics of senior managers and specialist physicians were examined with descriptive statistics such as frequency, mean, percentage, and standard deviation. Since questions 1, 2, 5, 8, 12, 15, 18, and 30 in the questionnaire contain negative statements and are not in the same direction as the other questions of the survey, these questions were reverse-coded and expression compatibility was assured with the other questions. In the study, the reliability of the questions about the attitudes of senior managers and specialist physicians towards city hospitals was evaluated with the internal consistency coefficient (Cronbach's alpha coefficient). CFA was used to test whether the adapted ATIHC scale was a valid and reliable instrument for measuring the attitudes of health care professionals towards city hospitals and to explore the validity and internal structure of the scale in our sample using the Lisrel 8.7 program.

2.3. Confirmatory Factor Analysis. CFA refers to a type of modeling that deals with the relations between latent variables and observed measurements [36]. CFA can be used for various reasons, such as developing new measurement tools, evaluating the properties of these measurement tools, verifying structures, and examining the effects of the tools used [37–39]. A factor in CFA is a variable that affects correlations between observed measures and more than one observed measure. The purpose of a factor analysis model is to determine the number and structure of factors that explain the covariation and variation among the observed measures. In addition to testing whether the data fit a theoretical measurement model that captures the variance-covariance structure of the measurements, CFA is commonly used to test whether the data represent a hypothetical measurement model [40]. CFA is used to analyze the extent to which the highly constrained priority structure is consistent with the sample data [41]. Forming part of structural equation modeling, CFA assumes that the researcher has a strong theory about the structure of the concept under study [42, 43]. In summary, CFA mainly serves the following purposes: assessing how well a particular model fits the data and estimating factor loadings, covariance-variance, and residual error variances of observed variables [44]. The CFA approach differs from exploratory factor analysis in that it tests whether measurements of the construct or factor match what the researcher believes the construct or factor is [36]. Furthermore, it explores the item-factor relationship in this case, called factor loads, as well as the number of variables underlying the instruments [45]. A second-order CFA, which expresses an ordinary factor model in which the covariances of latent variables are determined by one or more high-order latent variables, is a good representation of second-order variables [33, 46]. Basically, mimicking the logic of first-order factor models, second-order CFA represents reflective relationships between first-order factors and an underlying second-order factor [46]. Thus, second-order factor models are more interpretable and parsimonious than first-order factor models [47].

In this study, a CFA analysis was used to determine whether the ATIHC scale is a reliable and valid tool for measuring health professionals' attitudes towards integrated health campuses. We used chi-square value/degrees of freedom (χ^2/df), root mean square error of approximation (RMSEA), and goodness-of-fit indices such as the comparative fit index (CFI), the Bentler–Bonett normed fit index (NFI), the incremental fit index (IFI), and the relative fit index (RFI) to explore the fit between the observed data and the target model [30, 48].

3. Results

Descriptive study findings regarding the personal characteristics and professional knowledge of senior managers and specialist physicians are given in Table 1. Accordingly, 72.7% of senior managers are male and 27.3% are female. In terms of marital status, it is seen that all of the senior executives are married (100%). The age distribution of senior executives is between a minimum of 39 and a maximum of 58, with an overall average age of 49 (±5.64). On the other hand, 62.2% of specialist physicians are male and 37.8% are female. When examined in terms of marital status, 86.5% of them are married, and 13.5% of them are single. The age distribution of specialist physicians is between a minimum of 30 and a maximum of 65, and the mean age is 41 (±8.24). Considering the findings regarding the working hours of senior managers and specialist physicians, it is seen that 63.6% of senior managers have worked for 21 years and above, 18.2% have worked for 11–15 years, 9.1% have worked for 9–10 years, and 9.1% have worked for 1–5 years. It has been determined that 28.7% of the specialist physicians have worked in the profession for 21 years and above, 23.2% have worked for 11–15 years, 23.2% have worked for 6–10 years, 17.3% have worked for 16–20 years, and 7.6% have worked

Table 1: Descriptive statistics on the professional knowledge of senior managers and specialist physicians.

	Senior manager				Specialist physicians			
	N		(%)		n		(%)	
Sex								
Male	8		72.7		115		62.2	
Female	3		27.3		70		37.8	
Marital status								
Single	0		0		25		13.5	
Married	11		100		160		86.5	
Time of work in the profession								
1–5 years	1		9.1		14		7.6	
6–10 years	1		9.1		43		23.2	
11–15 years	2		18.2		43		23.2	
16–20 years	0		0		32		17.3	
21+ years	7		63.6		53		28.6	
Eligibility of integrated health campuses								
Yes	11		100		156		84.3	
No	0		0		29		15.7	
Internal/surgical branches								
Internal	0		0		99		53.5	
Surgery	0		0		86		46.5	
Total	11		100		185		100	
	Min.	Max.	Mean	SD	Min.	Max.	Mean	SD
Age	39	58	48.73	5.64	30	65	41.48	8.24

for 1–5 years. When the fields of specialization of the 185 specialist physicians included in the study were examined according to the internal and surgical branches, it was seen that 53.5% of the specialist physicians worked in the internal branches and 46.5% in the surgical branches.

In this study, the reliability of the dimensions for evaluating the attitudes of hospital senior managers and specialist physicians towards city hospitals was evaluated with the internal consistency coefficient (Cronbach's alpha). Table 2 presents information on the reliability of the subdimensions of the ATIHC scale for evaluating the attitudes of senior managers and specialist physicians towards the city hospitals. It has been determined that the reliability level of the dimensions for measuring the attitudes of senior managers and specialist physicians towards city hospitals is above 0.70, which is known as the acceptability limit [49].

3.1. Confirmatory Factor Analysis. In this study, CFA was used to evaluate the attitudes of health professionals towards city hospitals. Figure 1 presents the t-values and standard solutions of the observed variables for explaining the latent variables, respectively. In the figure, gray colors represent the ATIHC scale questions from 1 (Q1) to 32 (Q32) and green colors represent latent variables. It is known that if the "t" parameter values exceed 1.96, they indicate significance at the level of 0.05, and if they exceed 2.56, they indicate significance at the level of 0.01 [50]. It is seen that the initial model is statistically significant ($p < 0.00001$) and indicates a four-factor structure for the ATIHC scale. However, the literature states that it is normal for "p" values to be significant in many CFAs due to the large sample size [51]. Therefore, it is recommended to evaluate alternative fit indices regarding the fit between the two matrices [52]. For this purpose, another criterion is taken into consideration to determine that the model's performance is the ratio of $X^2/df = 2798.02/458 = 6$; RMSEA = 0.16; and goodness-of-fit indices such as CFI = 0.84; NFI = 0.81; IFI = 0.84; and RFI = 0.80. Model fit indices indicate model fit at a moderate level by considering RMSEA and goodness-of-fit index values. Note that RMSEA values between 0.05 and 0.08 indicate that the model has reasonable error estimates, while RMSEA values above 0.10 indicate poor fit [53, 54]. In this study, goodness-of-fit values are higher than 0.80 and that indicates a good model fit for the first model [55]. Table 3 also presents a summary of model fit indices obtained from the first and redefined models.

However, in the first model, the t-value obtained from question 16 (Q16) is insignificant ($t = 0.54$; $p > 0.05$) and is represented with red color in the figure. Q16 is located under the latent variable of "integration." Therefore, the study model is redefined by removing Q16 from the study model. Note that all of the other "t" values obtained from the rest of the other questions are significant ($p < 0.01$) and included in the modified and final models. These results require the exclusion of an unmeaningful observed variable, which is Q16, and to redefine the study model. Therefore, Q16 is removed from the model, a redefined model is generated, and performance scores are presented as can be seen in Figures 2(a) and 2(b).

Figure 2 presents the data structure to reveal the latent variables, which are verified through the variables observed in the model, which are obtained as a result of the first-order CFA. Figures 2(a) and 2(b) represent t-values and standardized path coefficients obtained from the redefined first-order CFA model, respectively. This model is generated after removing Q16 from the initial model. Before generating the redefined first-order CFA model all questions are renumbered. The redefined first-order CFA model is significant ($p < 0.00001$), and it is seen that all t-values obtained from the observed variables explaining the latent variables are significant ($p < 0.01$). Further model performance indicators show that $X^2/df = 1652.84/428$ is 3.08, indicating an acceptable fit [56]. RMSEA, which is another evaluation criterion for the CFA model's adequacy, is 0.12. Although it is known that an RMSEA value less than 0.08 indicates a good fit [53], it can be said that the fit for this model is moderate. Moreover, goodness-of-fit index values obtained from the first-order redefined CFA model are as follows: the CFI value is 0.92, the NFI value is 0.89, the IFI value is 0.82, and the RFI value is 0.88. When different CFA model performance criteria related to the model fit are evaluated together, it can be said that the goodness-of-fit of the redefined model is high. Moreover, it is also possible to say that removing Q16 from the analysis increases the values of the model fit indices obtained from the redefined model. In the next step, second-order CFA was applied to explore the second-order latent factor variable and to create a model of the extent to which behaviors explain the following four latent variables: health care quality and efficiency, coordination of care components, interdisciplinary care teams, and integration of health services.

Table 2: The items in the factors and the Cronbach alpha values.

Factor	Factor name	Questions in the factor	Cronbach alpha
Factor 1	Health care quality and efficiency	1, 7, 13, 27, 30	0.73
Factor 2	Coordination of care components	2, 8, 14, 18, 32	0.83
Factor 3	Interdisciplinary care teams	3, 9, 12, 15, 19, 24, 29	0.62
Factor 4	Integration of health services	4, 5, 6, 10, 11, 16, 17, 20, 21, 22, 23, 25, 26, 28, 31	0.75

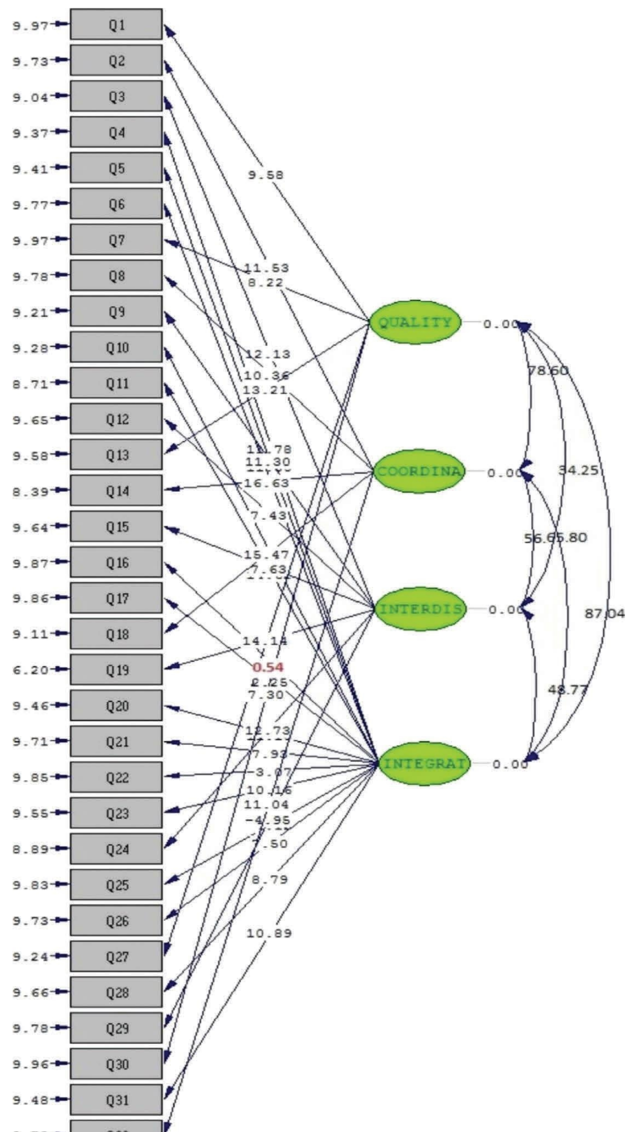

Figure 1: Observed variables statement and error variances of latent variables for the first-order model.

Table 3: Goodness-of-fit indices for model 1, model 2, and model 3.

	X^2	df	X^2/df	p	RMSEA	CFI	NFI	IFI	RFI
Model 1: first-order initial model (32 items)	2798.02	458	6.1	<0.001	0.16	0.84	0.81	0.84	0.80
Model 2: first-order redefined model (31 items)	1652.84	428	3.8	<0.001	0.12	0.92	0.89	0.92	0.88
Model 3: second-order redefined model (31 items)	1663	430	3.8	<0.001	0.12	0.92	0.89	0.92	0.88

RMSEA = root mean square error of approximation; CFI = comparative fit index; NFI = Bentler–Bonett normed fit Index; IFI = incremental fit index; RFI = relative fit index.

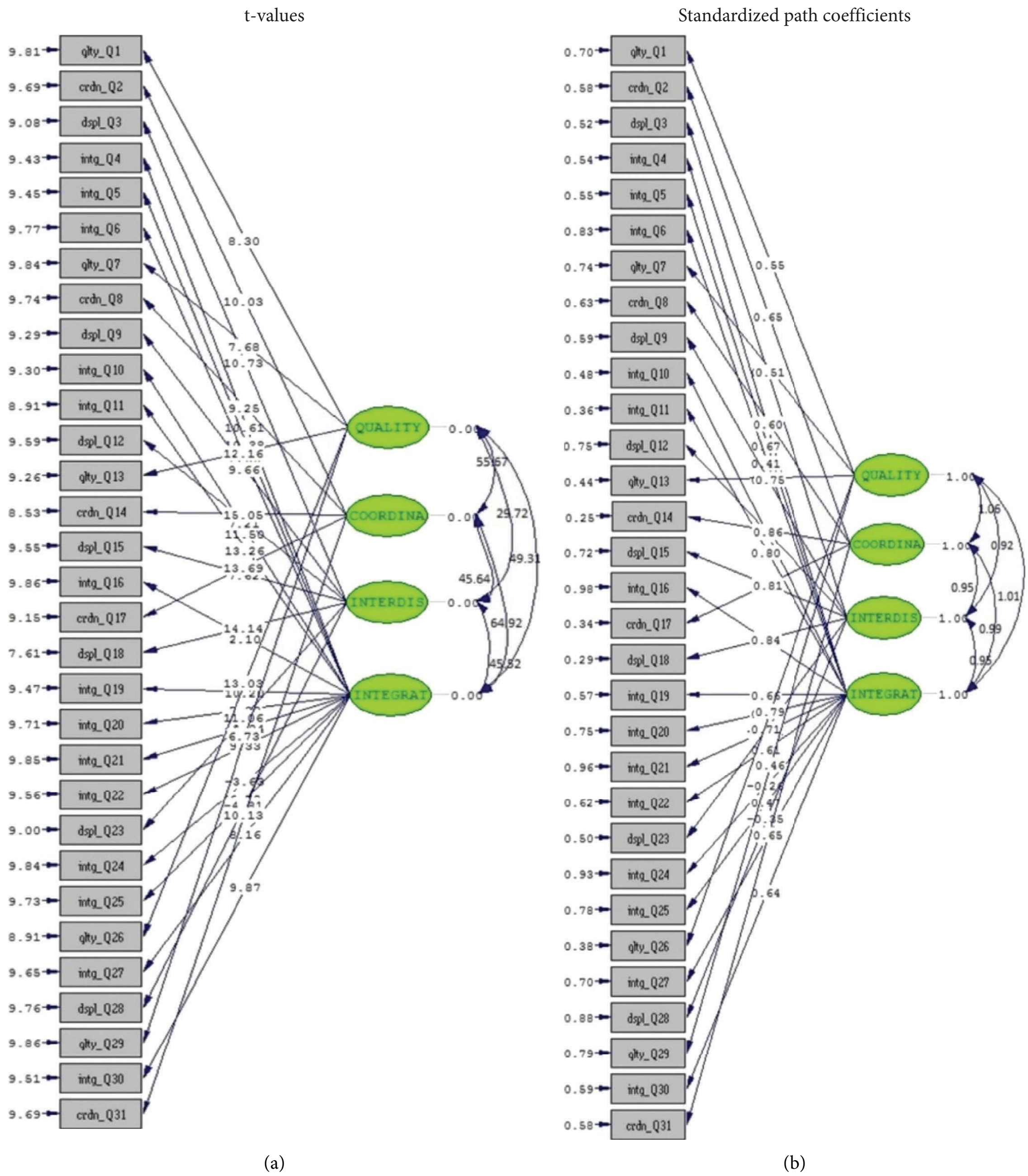

Figure 2: Observed variables statement and error variances of latent variables for the first-order redefined model.

Figure 3 presents the second-order redefined CFA model performances in terms of *t*-values and standardized path coefficients. The second-order redefined model is significant ($p < 0.00001$), and when the overall performance of the model is examined, it is seen that the X^2/df = 1663/430 is 3.8, indicating an acceptable fit. RMSEA, which is another criterion related to model performance, is 0.12 and indicates a moderate level of performance. Finally, the goodness-of-fit indices obtained from the model are high and indicate a good level of fit for the redefined second-order model into the data (CFI = 0.92, NFI = 0.89, IFI = 0.92, and RFI = 0.88). Figures 3(a) and 3(b) represent *t*-values and standardized path coefficients, respectively. Figure 3(a) shows that all *t*-values gathered from the redefined second-order CFA model are above 2.56 and are significant ($p < 0.01$). Moreover, the error variances are low. Figure 3 shows the extent to which the four latent variables of the second-order CFA model explain the second-order latent "attitudes" variable of health professionals' behaviors towards city hospitals. The four latent variables under this second-order latent "attitudes" variable are health care quality and efficiency, coordination of care components, interdisciplinary care teams, and integration of health services, respectively. Figure 3(b) presents the standardized path coefficients, and it is seen that the highest

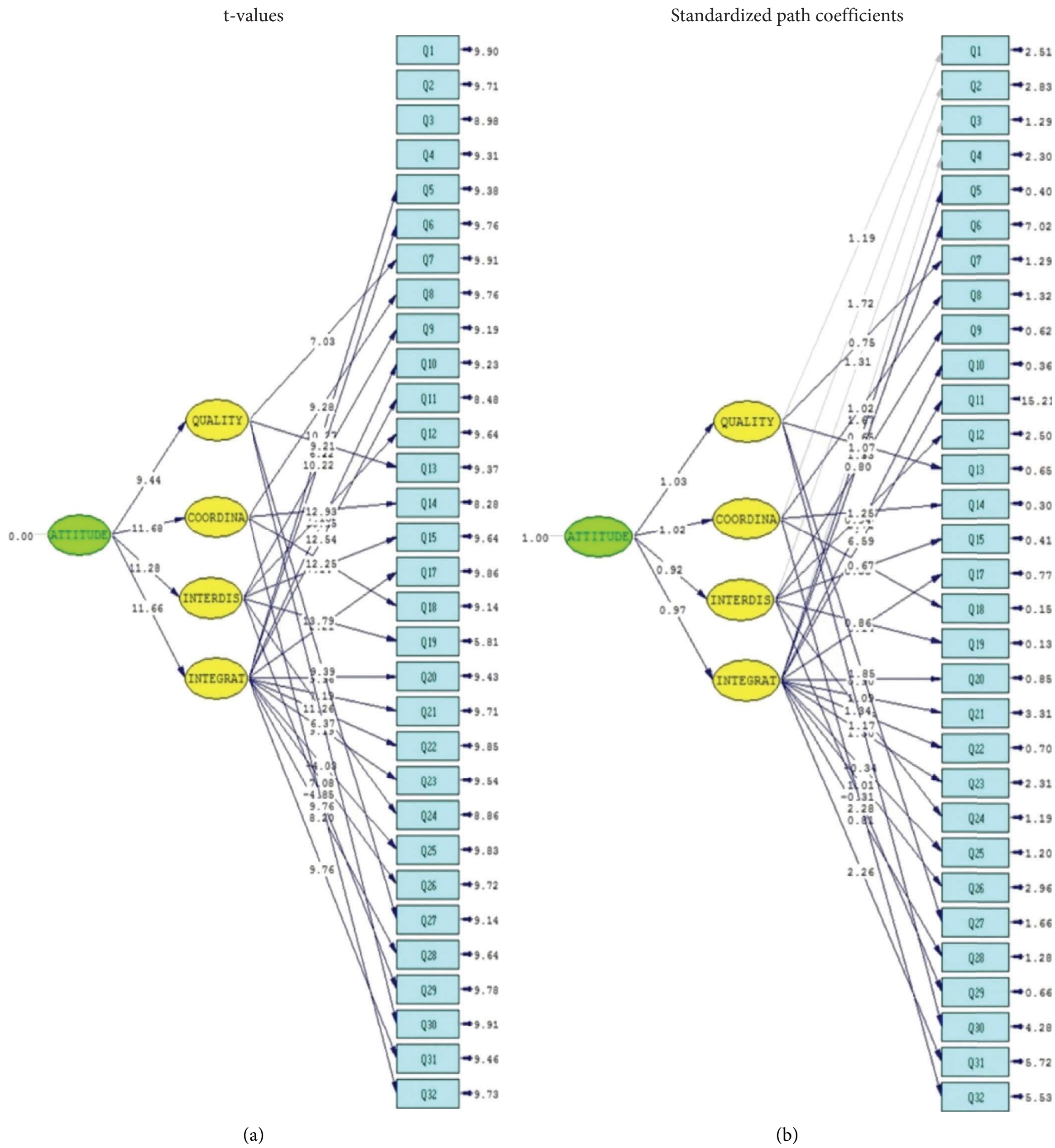

Figure 3: Observed variables statement and error variances of latent variables for the second-order confirmatory factor analysis model.

standardized beta coefficients are obtained from health care quality and efficiency ($\beta = 1.03$, $p < 0.01$) and coordination of care components ($\beta = 1.02$, $p < 0.01$) latent variables, respectively. Accordingly, it can be said that health care quality and efficiency and coordination of care components are the most effective latent variables in explaining the general attitudes of health professionals towards city hospitals.

A summary of goodness-of-fit indices obtained from the initial (model 1), redefined first-order CFA (model 2), and second-order redefined CFA models (model 3) are presented in Table 3. It is seen that the redefined second-order CFA model performance is good and confirms the second-order latent variable fit to the redefined data structure.

4. Discussion

The key findings of this study provide many insights for health policymakers to better understand the evaluations of health professionals towards city hospitals. The key facts of the study are summarized as follows: (i) this study confirmed the factor structure of the ATIHC scale applied on health professionals via senior managers and specialist physicians working in a city hospital located in a rural part of the country; (ii) the second-order redefined CFA model indicated four latent variables and a second-order latent variable called "attitudes"; (iii) the final model also confirmed the four latent variables of the model, which are health care quality and efficiency, coordination of care components, interdisciplinary care teams, and integration of health services; (iv) finally, standardized path coefficients gathered from the second-order redefined model indicate that health care quality and efficiency and coordination of care components are the most effective latent variables in explaining general attitudes of health professionals towards city hospitals; and (v) to the best of our existing knowledge, this study is the first second-order CFA to explore the attitudes of health professionals towards city hospitals.

The findings of this study highlight that the ATIHC scale is applicable to health professionals, including senior managers and specialist physicians working in a city hospital located in the rural part of an emerging country. To examine the fit of our model, we conducted CFA and examined attitudes towards city hospitals based on data obtained from 196 health care professionals. In the analysis, we left out the latent variables whose contribution to the model was meaningless in the first-order model. We then retested the model after excluding the variables. When the performance of the first-order redefined model was examined, it was observed that the fit index values of the model were good. In the next step, second-order CFA was applied to create a model of the extent to which behaviors explain four latent variables: health care quality and efficiency, coordination of care components, interdisciplinary care teams, and integration of health services. As a result of these analyses, it has been determined that the most effective latent variables in explaining the attitudes of health professionals towards city hospitals are the health care quality and efficiency and coordination of care components.

Hospitals, which consist of humans, machines, programs, living organisms, and systems, are expected to have some structural and process elements with temporal and spatial relations, representing a multidisciplinary working environment where different disciplines coexist [57]. For this reason, it has been stated that the most important factors in supporting access to health services and care provided in hospitals are interprofessional coordination, cooperation, and harmony [58]. The purpose of establishing city hospitals, which are formed in large health complexes, is to meet the health needs of the people of the region with the latest technology, medical facilities, and qualified health personnel by having various health units. For this reason, city hospitals are designed to offer many and various health services with interprofessional coordination and cooperation [59]. It has been stated that the existence of interprofessional teams in city hospitals provides support for service delivery in which these teams cooperate with each other. Moreover, health services are increasingly based on teams, collaboration, and interdisciplinary work [60]. Within the scope of our study, the fact that specialist physicians are more at the forefront in the provision of health services compared to senior managers, their workload perceptions are different, and they are active in clinical care decisions rather than organizational decision-making processes may cause differences in their attitudes towards city hospitals. In this study, when the opinions of senior managers and specialist physicians on the eligibility of city hospitals for the health sector are evaluated together, it is noteworthy that senior managers have a more positive approach than specialist physicians. Clarkson et al. [61] investigated the knowledge and attitudes of health personnel towards disease prevention. Significant differences were found between the occupational groups of the study participants. Accordingly, it has been determined that professional health care managers tend to have a more positive attitude than the personnel in clinical health care.

The first four-factor model found through CFA showed a partial fit to the data. Discussions on these findings are included in this section. There are multiple goodness-of-fit criteria at the stage of testing the adequacy of the models obtained using CFA [62]. In other words, while evaluating the goodness-of-fit of the models, a single criterion or index measure does not provide definitive evidence that the models are sufficient [63]. It is argued that various factors, such as statistical criteria, should be taken into account as well as practical and theoretical criteria [62]. In our case, the chi-square test obtained from the initial model resulted in a significant p value ($p < 0.01$) but the X^2/df value ($X^2 = 2798.02$, $df = 458$) was found to be 6.1. Since this ratio is below 3, it is accepted as an indicator of perfect fit [64]. It has been determined that there is no perfect fit in the first-order nondefined model. Another evaluation criterion, RMSEA, provides an overall assessment of how well the hypothetical models fit the data by measuring the deviation from a perfect model [65]. Considering the RMSEA value, which is a very informative measure that takes into account the approximation error in the population, it was determined that the RMSEA value was 0.16 in the first-order nonreduced model within the scope of our study. According to Stragier et al. [66], a CFI value over 0.95 is a "good" fit, a value over 0.90 is an "acceptable" fit, for NFI, a value of ≥0.90 is a "good" fit, and finally, an IFI value above 0.95 represents a "good" fit. In our study, it was found that NFI = 0.81, IFI = 0.84, and CFI = 0.84. According to these values, the CFI, NFI, and IFI fit indices are close to the acceptable fit values in the first-order, not redefined, model. For the integration variable, which is a latent variable of the first-order not redefined model, the contribution of the variable Q16 ($t = 0.54$, $p > 0.05$) to the model was found to be insignificant, and this latent variable was excluded from the analysis.

In the next step of the analysis, the variable whose contribution to the model was found to be insignificant was removed from the initial model and retested. The X^2/df value of the first-order redefined model ($X^2 = 1652.84$, $df = 428$) was found to be 3.8. While it is preferred that this ratio be above 3, the value we obtained in our model is close to 3. When looking at the fit indices used to evaluate the fit of the model, the RMSEA value is 0.12. Accordingly, it can be said that our model represents a weak fit. However, goodness-of-fit indices (CFI = 0.92, NFI = 0.89, and IFI = 0.92) were close to 0.95 and indicated a satisfactory fit to the model [67].

Finally, second-order CFA was applied to construct a model of the extent to which behaviors explain the four latent variables, which are: health care quality and efficiency, coordination of care components, interdisciplinary care teams, and integration of health services. As a result of this analysis, $X^2/df = 1663/430$ in the second-order model was determined to be 3.8. When the fit index values were examined, the RMSEA value was determined to be 0.12. CFI = 0.92, NFI = 0.89, and IFI = 0.92 values were very close to 0.95, and a very satisfactory fit was found in the model. In addition, as a result of the second-order factor analysis model, the most effective latent variables in explaining the health professionals' attitudes towards city hospitals were found to be health care quality and efficiency ($\beta = 1.03$, $p < 0.01$) and coordination of care components ($\beta = 1.02$, $p < 0.01$). As a result, it was determined that the Turkish version of the CFA preserved the original factor structure of the ATIHC and that most of the goodness-of-fit indices showed a satisfactory solution considering the acceptable fit thresholds mentioned above.

4.1. Strengths of this Study. As far as we know, one of the strengths of the study is that it is the first second-order CFA applied on the ATIHC scale. Another strength of the study is that health care quality and efficiency and coordination of care components are the most effective latent variables in explaining the attitudes of health professionals, consisting of senior managers and specialist physicians, towards city hospitals. The result of this study presents the evaluations of interprofessional health workers towards city hospitals. Study findings highlight the state-of-the-art latent confirmatory factor structure of health professionals in integrated health campuses.

4.2. Limitations and Advice for Future Studies. Considering the limitations of this study, senior managers and specialist physicians working in one city hospital operating in Turkey were included in the scope of the research. Therefore, it is not recommended to generalize the results obtained from this study to the behaviors of health professionals working in city hospitals throughout Turkey. Future research may expand generalizability by including other city hospitals. In addition, studies can be carried out on examples from other countries in structures similar to city hospitals, and these studies can be compared at the international level. Another limitation of the study was that only senior managers and specialist physicians were included in it. In future studies, larger samples from different interprofessional groups could be studied.

5. Conclusions

In this study, CFA was conducted using the Turkish version of the scale to evaluate the attitudes of health professionals, consisting of senior managers and specialist physicians, towards city hospitals using the ATIHC scale. The findings of the study determined that the Turkish version of the ATIHC scale preserved the original factor structure of the scale to a large extent and supported it with satisfactory fit indices. In addition, study findings indicate that the Turkish version of the ATIHC scale is a reliable and valid scale for measuring the attitudes of health professionals, consisting of senior managers and specialist physicians, towards city hospitals.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Additional Points

What Is Known about This Topic. (i) City hospitals (integrated health campuses) are one of the most recent and controversial health policy actions in Turkish health policy. (ii) Health care quality and efficiency and coordination of care components are the most effective latent variables in explaining the attitudes of health professionals towards city hospitals. (iii) It is the first second-order confirmatory factor analysis applied to the ATIHC scale used in the study. *What This Paper Adds.* (i) The Turkish version of the ATIHC scale is a valid and reliable scale to measure the attitudes of senior managers and specialist physicians towards city hospitals. (ii) Health care quality and efficiency and coordination of care components are the most effective latent variables in explaining the attitudes of health professionals towards city hospitals.

Ethical Approval

This study was approved by the Hacettepe University Ethics Committee (Reference No. E-12908312-050.06-00001819158) on October 26, 2021.

Disclosure

This study was prepared from a part of a master's thesis written by Saylan B. (2022) titled "Comparison of health professionals' attitudes towards integrated health campuses (city hospitals)" approved by Hacettepe University, Institute of Social Sciences, Department of Health Care Management, Ankara, Turkey.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

B.S. and S.C. conceived and planned the experiments; B.S. collected the data, carried out the experiments, and took the lead in writing the manuscript; B.S. and S.C. contributed to the study design, methodology, and interpretation of the results; S.C. guided throughout the study and edited from an intellectual aspect. All authors were involved in drafting and revising the manuscript and approved the final version.

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