

# Satisfaction Levels Among Users of Traditional and Complementary Medicine Services: A Questionnaire Development Study

## Geleneksel ve Tamamlayıcı Tıp Hizmeti Alanların Memnuniyet Düzeyleri: Bir Ölçek Geliştirme Çalışması

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**ABSTRACT Objective:** Traditional and complementary medicine (TCM) practices have developed rapidly in recent years. For this reason, both the World Health Organization and the countries have made new policies and legal regulations. Depending on these rapid developments, the applications of patients to TCM applications have also increased. For this reason. The aim of this study is to develop a scale to determine the satisfaction levels of TCM service recipients. **Material and Methods:** The data of the research, which is a methodological study, were collected face-to-face among patients who received TCM service from a public hospital between May 1, 2021 and November 30, 2022 and completed all their sessions. The data collected from the research were analyzed with SPSS 26.00 and SPSS AMOS graphics 24.00 programs. exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) was used in the study. **Results:** As a result of the research, a scale consisting of one dimension and 15 statements was obtained. According to EFA results, the explained variance was 73.20%, Kaiser-Meyer-Olkin 0.91, and Cronbach's alpha 0.97. According to CFA results,  $\chi^2$ /degree of freedom was determined as 4.251, Goodness-of-Fit Index 0.909, Adjusted Goodness-of-Fit Index 0.805, Normed Fit Index 0.962, Comparative Fit Index 0.971, Relative Fit Index 0.930, Incremental Fit Index 0.971 and root mean square error of approximation 0.064. According to the results of EFA and CFA, the fit index of the scale was found to be at an acceptable level. **Conclusion:** As a result of the study, it was determined that the scale was valid and reliable.

**ÖZET Amaç:** Geleneksel ve tamamlayıcı tıp uygulamaları son yıllarda hızla gelişmektedir. Bu nedenle hem Dünya Sağlık Örgütü hem de ülkeler yeni politikalar ve yasal düzenlemeler yapmışlardır. Bu hızlı gelişmelere bağlı olarak hastaların geleneksel ve tamamlayıcı tıp uygulamalarına başvuruları da artmıştır. Bu nedenle bu çalışmanın amacı geleneksel ve tamamlayıcı tıp hizmeti alanların memnuniyet düzeylerini belirlemeye yönelik bir ölçek geliştirmektir. **Gereç ve Yöntemler:** Metodolojik bir çalışma olan araştırmanın verileri 01.05.2021-30.11.2022 tarihleri arasında bir kamu hastanesinden GETAT hizmeti alan ve tüm seanslarını tamamlayan hastalardan yüz yüze toplanmıştır. Araştırmadan elde edilen veriler SPSS 26.00 ve SPSS AMOS graphics 24.00 programları ile analiz edilmiştir. Çalışmada Keşfedici ve Doğrulayıcı Faktör analizi kullanılmıştır. **Bulgular:** Araştırma sonucunda tek boyut ve 15 ifadeden oluşan bir ölçek elde edilmiştir. AFA sonuçlarına göre açıklanan varyans %73,20, KMO 0,91 ve Cronbach's Alpha 0,97'dir. DFA sonuçlarına göre  $\chi^2$ /df 4.251, GFI. 909, AGFI. 805, NFI. 962, CFI. 971, RFI. 930, IFI. 971 ve RMSEA .064 olarak belirlenmiştir. AFA ve DFA sonuçlarına göre ölçeğin uyum indeksinin kabul edilebilir düzeyde olduğu görülmüştür. **Sonuç:** Çalışma sonucunda ölçeğin geçerli ve güvenilir olduğu tespit edilmiştir.

**Keywords:** Traditional and complementary medicine; satisfaction; scale

**Anahtar Kelimeler:** Geleneksel ve tamamlayıcı tıp; memnuniyet; ölçek

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Diseases have been constantly evolving since the inception of human existence. Experience of humans in combating diseases utilising natural resources have led to the development of traditional and complementary medicine (TCM) in all cultures.<sup>1-8</sup> The World Health Organization (WHO) has published a report on TCM practices, practitioners and methods to prevent endangering the health of patients due to TCM. This WHO report provided information on modalities of TCM and characteristics of TCM practitioners and products.<sup>9</sup>

Türkiye issued a “Regulation on TCM Practices” on October 27, 2014. This regulation specifies how, where and by whom TCM should be delivered and describes 15 methods of TCM, including leech therapy, cupping therapy, acupuncture, phytotherapy, maggot therapy, homeopathy, reflexology, hypnosis, apitherapy, chiropractic, musicotherapy, ozone therapy, osteopathy, prolotherapy and mesotherapy.<sup>10-12</sup> This regulation issued by the Turkish Ministry of Health (MoH) provides a legal framework for TCM practices and ensures TCM is delivered only in suitable facilities by certified professionals. Currently, there are 1,401 units, 78 practice centres and 26 TCM training centres in Türkiye.<sup>13,14</sup>

In recent years, several studies have been conducted on TCM in Türkiye and globally. Most studies analysed the individuals’ knowledge and attitudes toward TCM. To the best of our knowledge, no study has investigated the satisfaction level of individuals receiving TCM services. Therefore, this study aimed to develop a TCM satisfaction questionnaire based on data obtained by surveying patients who availed TCM practices and completed all sessions.

## MATERIAL AND METHODS

### LOCATION AND DURATION OF THE STUDY

The data for this methodological study were collected between November 1, 2021 and December 30, 2022. Patients who received services from a TCM centre in a public hospital in Samsun province of Türkiye were included in this study.

The scientific literature on scale development recommends using a sample size of 5-10 subjects per

item for developing a scale.<sup>15</sup> Therefore, 10 subjects per item were included, and the draft questionnaire was filled by 150 subjects (15 items×10 subjects=150). Participants for this study were selected using simple random sampling method. After receiving consent to participate in the study from patients who completed all sessions, 301 patients were included in the study.

### DATA COLLECTION TOOLS AND COLLECTION OF DATA

Data related to personal and health-related characteristics of the patients were collected using a “demographic questionnaire” and a draft of “TCM satisfaction questionnaire”.

The demographic questionnaire comprised 10 questions to analyse the socio-demographic characteristics of the patients who presented to the clinic, availed a TCM service and completed all sessions.

TCM satisfaction questionnaire was used to assess content validity. A 20-item draft questionnaire was analysed by an expert panel comprising 4 specialist physicians, 2 psychologists and 1 measurement and evaluation expert. Experts’ opinions were collected using an “expert assessment form”. This form was sent via an e-mail to the experts who agreed to evaluate the questionnaire. Expert opinions were assessed using Davis method, which involved grading the expert opinions using a 4-point scale as follows: a) “Highly appropriate”, b) “Fairly appropriate”, c) “Somewhat appropriate” and d) “Inappropriate”. In this technique, the number of experts who marked (a) and (b) was divided by the total number of experts to obtain the content validity index (CVI) for each item.<sup>16</sup> The CVI of the draft questionnaire ranged from 0.60 to 1.00. The items that were marked problematic by the experts were revised as per the suggestions. Thus, 4 items were revised and 5 items were removed, resulting in a 15-item draft questionnaire. Before using the questionnaire in actual setting, the draft scale was pretested with ten subjects.

### ETHICS APPROVAL

The study received ethics approval from the Health Sciences University Samsun Training and Research Hospital Non-Invasive Clinical Research Ethics

Committee (decision dated: April 21, 2021; no 2021/8/1). The study was performed in accordance with the principles of the Declaration of Helsinki.

## DATA ANALYSIS

The collected data were analysed using IBM SPSS 26.00 and IBM SPSS Amos Graphics 24.00 software (USA). Percentage, frequency, exploratory and confirmatory factor analysis (CFA) were used to analyse the data.

## RESULTS

40.2% of the participants were aged 41-50 years, among whom 68.1% were females, 53.2% had a bachelor's degree or higher, 79.7% were married, 82.7% had children, 76.1% were employed, 49.5% were covered by the Social Security Institution (SSI), 43.9% had at least one chronic disease and 54.6% had an income of \$501 or more (Table 1).

Construct validity of the questionnaire was assessed using exploratory factor analysis (EFA) and CFA. The EFA yielded a Kaiser-Meyer-Olkin value of 0.915, indicating that the sample size is sufficient as the value was greater than 0.60.<sup>17</sup> The items had a factor loading of 0.424, and an explained variance of 73.32%. The questionnaire was single dimensional (Table 2). Items with factor loadings of 0.40 and above are reported to be valid.<sup>17</sup> Additionally, according to Bartlett's test of sphericity, the data matrix was suitable for factor analysis and statistically significant ( $\chi^2=6223.145$ , degree of freedom (df)=105,  $p=0.000$ ) (Table 2).

Construct validity of the questionnaire was determined using CFA using SPSS AMOS Graphics 24.00 software. Some of the best known fit indices including  $\chi^2/df$ , Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI) and root mean square error of approximation (RMSEA) were calculated.<sup>18</sup> Inter-item correlations are given in Figure 1.

Table 3 shows the goodness-of-fit indices yielded by CFA. CFA results show that GFI, AGFI, GFI, Normed Fit Index, Comparative Fit Index, Relative Fit Index and Incremental Fit Index values were at acceptable levels. RMSEA values less than or equal to 0.05 indicates good fit, values between 0.05

**TABLE 1:** Socio-demographic characteristics of participants (n=301).

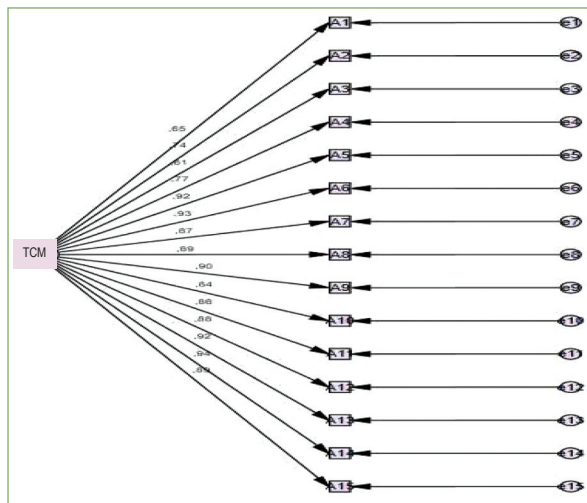
Characteristics	n	%
<b>Age</b>		
18-30	28	9.3
31-40	60	19.9
41-50	121	40.2
51-60	60	19.9
60-80	32	10.6
<b>Sex</b>		
Female	205	68.1
Male	96	31.9
<b>Education qualification</b>		
Primary school	36	12
Middle school	16	5.3
High school	49	16.3
Associate degree	40	13.3
Undergraduate and above	160	53.2
<b>Marital status</b>		
Married	240	79.7
Single	61	20.3
<b>Do you have children?</b>		
Yes	249	82.7
No	52	17.3
<b>Employment status</b>		
Employed	229	76.1
Unemployed	20	6.6
Pensioner	52	17.3
<b>Social security coverage</b>		
Social Security Institution	149	49.5
Pension fund	132	43.9
Bağ-kur	16	5.4
Private insurance	4	1.3
<b>Do you have any chronic disease?</b>		
Yes	132	43.9
No	169	56.1
<b>What is your chronic disease? (132)</b>		
Diabetes	32	24.24
Rheumatism	30	22.72
Heart disease	28	21.21
Hypertension	16	12.2
Other	26	19.63
<b>Household income</b>		
\$0-\$250	36	12
\$251-\$500	194	54.5
>\$501	101	33.6

and 0.08 indicates reasonable fit, and values between 0.08 and 0.10 indicates poor fit. The RMSEA value in this study was 0.064, which indicated reasonable fit.<sup>19,20</sup> In addition, the  $\chi^2/df$  value in this study was

**TABLE 2:** Exploratory factor analysis results.

Items	Factor loading	KMO	Variance explained %
TCM outpatient clinic is suitably located in the hospital and is easy to access	0.480		
TCM outpatient clinic is easy to reach by phone	0.620		
TCM outpatient clinic has charged me a reasonable price	0.424		
Cost of travelling to the TCM outpatient clinic/hospital is affordable	0.640		
Health professionals working in the TCM outpatient clinic are skilled	0.828		
Health professionals working in the TCM outpatient clinic are friendly	0.867		
TCM outpatient clinic uses modern medical equipment	0.769		
Healthcare professionals working in the TCM outpatient clinic care about my privacy	0.804	<b>0.915</b>	<b>73.320</b>
Physicians working in the TCM outpatient clinic are experienced in the procedures they perform	0.820		
TCM outpatient clinic has quality for reducing societal prejudices	0.721		
I am satisfied with the interior design of the TCM outpatient clinic	0.752		
I am satisfied with the duration of treatment in the TCM outpatient clinic	0.778		
I am satisfied with the information provided on my treatment in the TCM outpatient clinic	0.832		
I am satisfied with the cleanliness of the TCM outpatient clinic	0.865		
I am satisfied with the counselling services provided by the TCM outpatient clinic	0.798		
Cronbach's alpha	<b>0.970</b>		

KMO: Kaiser-Meyer-Olkin; TCM: Traditional and complementary medicine.



**FIGURE 1:** Confirmatory factor graph.

4.251, which is within the acceptable range as its value was less than 5. Overall, fit indices confirmed the validity of the factor structures.

**TABLE 3:** Confirmatory factor analysis fit indices.

$\chi^2/df$	GFI	AGFI	NFI	CFI	RFI	IFI	RMSEA
4.251	0.909	0.805	0.962	0.971	0.930	0.971	0.064

df: degree of freedom; GFI: Goodness-of-Fit Index; AGFI: Adjusted Goodness-of-Fit Index; NFI: Normed Fit Index; CFI: Comparative Fit Index; RFI: Relative Fit Index; IFI: Incremental Fit Index; RMSEA: Root mean square error of approximation.

Table 4 shows the means of the items. The highest mean was  $4.69 \pm 0.673$  for the item “Physicians working in TCM outpatient clinic are experienced in the procedures they will perform”. In general, the mean of all items is above four. The overall mean of satisfaction was  $4.49 \pm 0.660$ .

## DISCUSSION

TCM practices are becoming increasingly popular in Türkiye in recent years and delivered in both public and private hospitals and clinics. TCM practices are mostly preferred by individuals with chronic diseases. This trend has prompted WHO to publish scientific articles and conduct trainings to ensure that the TCM practitioners use an evidence-based approach while performing procedures and developing products. WHO has also listed prioritised actions in its 2014-2023 Traditional Medicine Strategy.<sup>21</sup> These developments have been closely followed by the

TABLE 4: Items and averages.

Items	$\bar{X}$	SD
TCM outpatient clinic is suitably located in the hospital and is easy to access	4.44	0.884
TCM outpatient clinic is easy to reach by phone	4.24	0.965
TCM outpatient clinic has charged me a reasonable price	4.10	0.948
Cost of travelling to the TCM outpatient clinic/hospital is affordable	4.25	0.866
Health professionals working in the TCM outpatient clinic are skilled	4.59	0.750
Health professionals working in the TCM outpatient clinic are friendly	4.69	0.730
TCM outpatient clinic uses modern medical equipment	4.48	0.790
Healthcare professionals working in the TCM outpatient clinic care about my privacy	4.64	0.686
Physicians working in the TCM outpatient clinic are experienced in the procedures they perform	4.69	0.673
TCM outpatient clinic has quality for reducing societal prejudices	4.50	0.773
I am satisfied with the interior design of the TCM outpatient clinic	4.56	0.717
I am satisfied with the duration of treatment in the TCM outpatient clinic	4.53	0.737
I am satisfied with the information provided on my treatment in the TCM outpatient clinic	4.55	0.699
I am satisfied with the cleanliness of the TCM outpatient clinic	4.53	0.772
I am satisfied with the counselling services provided by the TCM outpatient clinic	4.56	0.717
Satisfaction average	4.49	0.660

SD: Standard deviation; TCM: Traditional and complementary medicine.

Turkish MoH, which has introduced new laws to regulate TCM practices and practitioners.

Peltzer and Pengpid investigated the satisfaction of adults toward TCM practices in 32 countries and reported that the prevalence of using TCM practices was 26.4% and satisfaction rates were below 10% in Bulgaria, Poland and Slovenia; above 50% in China, the Philippines and the Republic of Korea; and above 80% in Denmark, Slovenia, Spain, Switzerland, Taiwan and the USA. They also found that satisfaction was significantly correlated with chronic disease, sex, middle age and disability. However, the survey used in their study only measured patients' satisfaction with treatment, and thus differs from the questionnaire developed in the present study.<sup>22</sup>

The mean satisfaction in the study was determined as  $4.49 \pm 0.660$ . A study conducted by Kaur et al. in Malaysia assessed satisfaction levels of 822 patients who availed TCM services and the effect of socio-demographic characteristics on satisfaction. The study found that satisfaction levels were high and were not influenced by socio-demographic characteristics. Further, it was reported that patients thought public hospitals should provide more TCM services.<sup>23</sup> In their study conducted by Zeng et al. in China, also

found the average satisfaction level to be 3.1.<sup>24</sup> In our country, in the study conducted by Kılıç and Soylar on patients who have TCM practices, it was determined that satisfaction was high.<sup>25</sup>

Most previous studies sought to measure knowledge levels and the efficacy of TCM treatment by interviewing subjects with chronic diseases.<sup>26-32</sup> In addition, Hashem-Dabaghian et al. developed a Treatment Satisfaction with Traditional Medicines Questionnaire and analysed its validity and reliability.<sup>5</sup>

## CONCLUSION

The study aimed to develop a TCM satisfaction questionnaire. Factor analysis yielded acceptable results, indicating that the questionnaire could measure satisfaction levels among patients receiving TCM. The final questionnaire was one dimensional and had 15 items.

This study was conducted during coronavirus disease-2019 pandemic, which may be considered a limitation as it may have adversely affected the number of participants. In addition, the single-centre design of the study may be considered another limitation, but this is moderated by the fact that our hospital served as a single centre for a large region

and admitted patients from all neighbouring provinces. Finally, the lack of sufficient data on this issue has made discussion complicated.

### Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

### Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or mem-

bers of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

### Authorship Contributions

**Idea/Concept:** Yaşar Demir, Onur Öztürk; **Design:** Yaşar Demir, Onur Öztürk, Bahadır Yazıcıoğlu; **Control/Supervision:** Yaşar Demir, Onur Öztürk; **Data Collection and/or Processing:** İsmail Şen, Ayşegül Elbir Şahin, Çetin Gökteş, Onur Öztürk; **Analysis and/or Interpretation:** Yaşar Demir, Onur Öztürk, Bahadır Yazıcıoğlu, İsmail Şen; **Literature Review:** Çetin Gökteş, Ayşegül Elbir Şahin, Yaşar Demir, Onur Öztürk; **Writing the Article:** Yaşar Demir, Onur Öztürk, Bahadır Yazıcıoğlu; **Critical Review:** Çetin Gökteş, Ayşegül Elbir Şahin, İsmail Şen.

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