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Trust In The Healthcare System Among Rural Residents And Self-Reported Unmet Healthcare Needs

Kırsalda Yaşayanlarda Öz-Bildirime Dayalı Karşılanamayan Sağlık İhtiyaçları ve Sağlık Hizmetleri Sistemine Güven

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ABSTRACT

Aim: *The aim of this study was to examine the relationship between self-reported unmet healthcare need and the level of trust in the healthcare system among rural residents.*

Material and Method: *This cross-sectional study was conducted between April and June 2022 with 472 participants living in towns and villages affiliated with Kırklareli province, excluding the provincial center. In this study, rural settlement was defined as small-town and village residential areas located outside the provincial center. Data were collected using the Personal Information Form and the Multidimensional Trust in Healthcare Systems Scale (MTHCSS).*

Results: *A total of 58.3% of the participants, whose mean age was 59.28 ± 11.64, lived in towns. The mean MTHCSS overall score was found to be 62.43 ± 12.22. The prevalence of self-reported unmet healthcare needs in the last 12 months was 30.3%. Among the participants with self-reported unmet healthcare needs, 67.1% could not access healthcare professionals, 82.5% could not access healthcare/examination services, and 41.3% could not access information on disease-related equipment/medication/disease management. It was found that the median scores of the overall MTHCSS and all its subdimensions were significantly lower among participants who reported unmet healthcare needs and among those who were unable to access healthcare professionals or healthcare/examination services in the last 12 months ($p < 0.001$).*

Conclusion: *Targeted interventions aimed at improving appointment system accessibility and reducing structural barriers in rural areas may contribute to strengthening trust in the healthcare system.*

Keywords: *Trust, Healthcare systems, Medical Staff, Needs and Demand*

ÖZET

Amaç: *Bu araştırmanın amacı, kırsalda yaşayan bireylerde öz bildirime dayalı karşılanamayan sağlık ihtiyacı ile sağlık hizmetleri sistemine güven düzeyi arasındaki ilişkiyi incelemektir.*

Gereç ve Yöntem: *Kesitsel tipteki bu araştırma Nisan–Haziran 2022 tarihleri arasında, Kırklareli il merkezine bağlı olmayan ve ile bağlı kasaba/belde ve köy yerleşim birimlerinde yaşayan 472 katılımcı ile yürütülmüştür. Bu çalışmada kırsal yerleşim, il merkezi dışında kalan kasaba/belde ve köy yerleşim alanları olarak tanımlanmıştır. Veriler Kişisel Bilgi Formu ve Sağlık Hizmetleri Sistemine Çok Boyutlu Güven Ölçeği (MTHCSS) ile toplanmıştır.*

Bulgular: *Yaş ortalaması 59.28 ± 11.64 olan katılımcıların %58.3'ü kasaba/beldede yaşamaktaydı. MTHCSS genel puan ortalaması 62.43 ± 12.22 idi. Son 12 ay içinde öz-bildirime dayalı karşılanamayan sağlık ihtiyacı prevalansı %30.3'tü. Öz-bildirime dayalı karşılanamayan sağlık ihtiyacı bulunan katılımcıların %67.1'i sağlık profesyonellerine, %82.5'i sağlık bakım/muayene hizmetlerine ve %41.3'ü hastalık ile ilgili ekipman/ilaç/hastalık yönetimi ile ilgili bilgiye erişememişti. Son 12 ay içerisinde karşılanamayan sağlık hizmeti gereksinimi bildiren ve sağlık profesyonellerine ya da sağlık/muayene hizmetlerine erişemeyen katılımcılarda, MTHCSS toplam ve tüm alt boyut medyan puanlarının anlamlı derecede daha düşük olduğu saptanmıştır ($p<0.001$).*

Sonuç: *Kırsal bölgelerde randevu sistemine erişimin kolaylaştırılmasına ve yapısal engellerin azaltılmasına yönelik hedeflenmiş müdahaleler, sağlık sistemine duyulan güvenin artırılmasına katkı sağlayabilir.*

Anahtar Kelimeler: *Güven, Sağlık sistemleri, Sağlık personeli, İhtiyaçlar ve talep*

INTRODUCTION

Trust in the healthcare system is associated with service delivery, the ability to protect individuals' interests, and how people perceive the system and its actors. Trust is important because it affects the health behaviors of beneficiaries and the capacity of the healthcare system to achieve its goals (Peters & Youssef, 2016). It promotes positive health behaviors, functions as an indicator of high-quality care, and constitutes a fundamental element of the patient–provider relationship. For these reasons, trust in the healthcare system represents a critical component of public health and health system performance.

Access to healthcare services is recognized as a fundamental social right; however, inequalities in benefiting from these services and barriers to access remain major public health concerns (Erdem & Pirinçci, 2003). Previous research has demonstrated that unmet healthcare needs are associated with social determinants such as age, gender, income level, education, residence in rural areas, and lifestyle characteristics (Lim, 2017; Prazeres & Santiago, 2016). Significant disparities in access to healthcare services have been reported between rural and urban populations. Individuals living in rural areas may face structural, financial, and cultural barriers, including inadequate services, lack of specialist physicians, transportation difficulties, and limited internet access (Douthit et al., 2015). In addition, non-communicable diseases, unhealthy lifestyle behaviors, and avoidance of healthcare utilization are more common in rural areas. These factors contribute to higher levels of unmet healthcare needs and increased health inequalities in rural populations (Douthit et al., 2015; Spleen et al., 2014).

Perceived unmet health need emerges when individuals perceive that they need healthcare services but could not benefit from them. Barriers to accessing healthcare services are employed to identify the causes of an unmet health need (Hardin et al., 2021). The perceptions of individuals regarding the availability of healthcare plays crucial roles in experiencing unmet healthcare needs. For this reason, it is very important to develop community-based policies to improve the physical conditions and social aspects of healthcare services (Hwang et al., 2017). The organization of healthcare services, the appointment system, the referral system for specialist examinations, the quality of the services delivered, and the way patients are treated in the healthcare system are among the factors that affect the accessibility of healthcare services (Popovic et al., 2017). Identifying and removing barriers to access to healthcare has great importance because unmet healthcare needs are considered a critical indicator of the healthcare system of a country (Hwang, 2018).

The presence of health and social consequences of the level of trust in the healthcare system and perceived unmet healthcare needs carry these issues to an important point in terms of public health. For this reason, In the present study, the purpose was to determine the effects of perceived unmet healthcare needs of rural residents on the level of trust in the healthcare system.

MATERIAL AND METHODS

Research Type

A cross-sectional design was employed in this study.

Study Population and Sample

This study was conducted between April and June 2022 in the towns and villages of Kırklareli Province, Türkiye. In this study, rural areas were defined as the towns (small municipalities) and villages affiliated with Kırklareli Province, excluding the provincial center. Self-reported unmet healthcare need was defined as healthcare services that participants stated they needed but were unable to obtain within the last 12 months. The population of the study consisted of adults aged 40 years and over living in towns and villages of Kırklareli province. The mid-year population of Kırklareli in 2021 was 366.363 (TÜİK, 2022). Based on the distribution of the population of Kırklareli according to age groups, the population aged 40 and over was proportioned to the entire population (50.17%), and it was found that the individuals who were aged 40 and over constituted the study population were 183.824 people. The minimum sample size to be reached was calculated with the Epi Info 7.2.5.0 according to the sample size formula in Statcalc Program with a known universe, prevalence 50% (p=0.50), Type I Error 0.05 (α=0.05), Standard Deviation (d=0.05), and the minimum sample size was calculated as 383. Considering possible data losses, it was aimed to reach 460 people with a 1.2 design effect and 472 people were reached. A non-probability convenience sampling method was used in this study. Considering the

geographical dispersion of rural settlements and accessibility constraints, face-to-face interviews were conducted with individuals who agreed to participate. This method was preferred due to the rural characteristics of the study area and logistical limitations.

Data Collection Tools

The data were collected by using the personal information form prepared by the researchers and the Multidimensional Trust in Health-Care Systems Scale (MTHCSS).

The Personal Information Form:

Consisted of 3 sections in which the socio-demographic and some lifestyle characteristics of the participants, general health levels, disease-related characteristics, characteristics of health service use, and self-reported unmet healthcare needs were questioned.

Multidimensional Trust in Health-Care Systems Scale:

MTHCSS was developed by Egede and Ellis, (2008) as a 5-point Likert-type scale consisting of 17 items and 3 sub-dimensions; "Trust in Healthcare Professionals", "Trust in the Person/Institution that Covers the Cost", and "Trust in Healthcare Institutions" (Egede & Ellis, 2008). The scale, which was adapted into Turkish by Dinç et al., 2013, can be applied to literate patients/adults between the ages of 18-65 (Dinç et al., 2013). Dinç et al. (2013) reported the Cronbach Alpha Coefficient of the scale as 0.87 in their article, and it was calculated as 0.90 in the present study. In the Turkish adaptation study, the Cronbach's alpha coefficients were reported as 0.91 for "Trust in Healthcare Professionals", 0.82 for "Trust in the Person/Institution that Covers the Cost", and 0.61 for "Trust in Healthcare Institutions" (Dinç et al., 2013). In the present study, the Cronbach's alpha coefficients were calculated as 0.90, 0.83, and 0.66 for the respective sub-dimensions. Total and subscale scores were calculated by summing the individual items, with higher scores indicating greater trust in the healthcare system. The scale scores were treated as continuous variables, and no categorical classification was applied.

Data Collection

The data were collected face-to-face by the interviewer. An Informed Voluntary Consent Form was received from the participants. It was ensured that the participants who accepted to participate in the study answered the questionnaire.

Ethical Consideration

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Ethical approval was received from the Kırklareli University Rectorate Scientific Research and Publication Ethics Committee (Date: 08.06.2022, and Approval Number: E-35523585-302.99-49286). Permission was obtained from the relevant author to use the scale. An Informed Voluntary Consent Form was received from the participants.

Data Analysis

Descriptive statistics (n, %, median [Q1–Q3]) were used in the analysis of the data. The reliability of the scale was assessed using Cronbach's alpha coefficient. The normality of scale scores was evaluated using the Shapiro-Wilk test. Since the scale scores were not normally distributed, nonparametric tests were preferred. For comparisons between two independent groups, the Mann–Whitney U test was applied. The results were reported with median (Q1–Q3) values. Effect sizes were calculated using the formula $r = Z / \sqrt{N}$. The level of statistical significance was initially set at $p < 0.05$. To control for Type I error due to multiple comparisons, Bonferroni correction was applied. The adjusted significance level was calculated as α/k, where k represents the number of comparisons performed within each set of analyses. Statistical significance was evaluated according to these Bonferroni-adjusted p-values. All analyses were conducted using IBM SPSS Statistics version 26.0.

RESULTS

The mean age of the participants was 59.28 ± 11.64 years (range: 40–93), and 61.4% (n=290) were male. More than half of the participants lived in towns (58.3%, n=275), and the majority were married (79.0%, n=373). Regarding education level, when categorized as primary education or below versus secondary education and above, 71.2% (n=336) of the participants had primary education or below, whereas 28.8% (n=136) had secondary education or higher. Also, 62.7% (n=296) of the participants were not working in an income-generating job. Regarding

occupational distribution, housewives (26.3%, n=124) and retired individuals (26.3%, n=124) constituted the largest groups, followed by farmers (20.8%, n=98). Detailed occupational distribution is presented in Table 1. When categorized as good/moderate versus poor, 75.2% (n=355) of the participants perceived their income as good or moderate, whereas 24.8% (n=117) perceived it as poor. In addition, 84.5% (n=399) of the participants had social security coverage. A total of 16.5% (n=78) of the participants had a disability and 46.4% (n=219) had a chronic disease. Among the participants who had chronic diseases, the most frequently reported chronic disease was hypertension (HT) (24.4%, n=115), 57.5% (n=126) had moderate perceived disease severity, and 49.2% (n=232) of the participants defined their perceived general health level as good (Table 1).

Table 1. Distribution of Descriptive Characteristics of the Participants (n=472)

Variables	n	%
Gender		
Female	182	38.6
Male	290	61.4
Age (year)		
40-49 years	102	21.6
50-59 years	145	30.7
60-69 years	136	28.8
70 years and older	89	18.9
Place of residence		
Town	275	58.3
Village	197	41.7
Education level		
Illiterate and literate	35	7.4
Primary school	301	63.8
Secondary school	59	12.5
High school	53	11.2
University graduate and above	24	5.1
Marital status		
Married	373	79.0
Widow	48	10.2
Single or divorced	51	10.8
Working status		
Not working	296	62.7
Worker	176	37.3
Occupation		
Housewife	124	26.3
Retired	124	26.3
Farmer	98	20.8
Artisan	49	10.4
Other (officer, worker, unemployed, self-employed)	77	16.3
Social security		
Yes	399	84.5
No	73	15.5
Perceived income level		
Good	68	14.4
Middle	287	60.8
Bad	117	24.8
Disability situation		
Yes	78	16.5
No	394	83.5
Chronic disease		
Yes	219	46.4
No	253	53.6
Chronic diseases (n=219) *		
Hypertension	115	24.4
Diabetes mellitus	64	13.6
Heart diseases	60	12.7
Chronic obstructive pulmonary disease	24	5.1
Rheumatic diseases	22	4.7
Other (thyroid disease, psychological diseases, asthma, cancer)	46	9.7
Perceived disease severity (n=219)		
Mild	53	24.2
Middle	126	57.5
Severe	40	18.3
General health level		
Good	232	49.2
Middle	206	43.6
Bad	34	7.2

Table 2 gives the distribution of the characteristics of the participants regarding their self-reported unmet healthcare needs. The prevalence of self-reported unmet healthcare needs in the last 12 months was found to be 30.3% (n=143); 67.1% (n=96) of the participants with self-reported unmet/inaccessible healthcare needs could not access healthcare professionals, 82.5% (n=118) could not access healthcare/examination services, and 41.3% (n=59) could not access information on disease-related equipment/medication/disease management. Among those who reported not being able to access healthcare professionals, 78.1% (n=75) stated that they could not access a physician. Among those who could not access healthcare and examination services, 61.9% (n=73) reported difficulty in accessing examination services. Additionally, 52.5% (n=31) of the participants who experienced difficulty accessing health-related equipment, medication, or disease management information stated that they could not access prescribed medication.

Table 2. Characteristics of the Participants Regarding Self-Reported Unmet/Inaccessible Healthcare Needs (n=472)

Variables	n	%
Self-reported unmet healthcare needs in the past 12 months		
Yes	143	30.3
No	329	69.7
Unmet healthcare needs in the past 12 months (n=143)*		
Inability to access healthcare professionals	96	67.1
Inability to access healthcare/examination services	118	82.5
Inability to access disease-related equipment/medication/information	59	41.3
Inaccessible healthcare professionals in the last 12 months (n=96)*		
Physician	75	78.1
Dentist	24	25.0
Other healthcare professionals	15	15.6
Inaccessible healthcare services in the last 12 months (n=118)*		
Examination services	73	61.9
Treatment services	51	43.2
Oral and dental healthcare services	34	28.8
Home care/monitoring services (follow-up examination, healthcare screening, immunization, etc.)	13	11.0
Information on inaccessible disease-related equipment/medication/disease management in the last 12 months (n=59)*		
Prescribed drugs	31	52.5
Disease-related equipment	27	45.8

** Percentages were calculated based on the relevant subgroup totals.*

The overall MTHCSS mean score was 62.43 ± 12.22 (Min: 18, Max: 85; theoretical range: 17–85). The mean subdimension scores were 38.70 ± 8.09 for trust in healthcare professionals (theoretical range: 10–50), 13.64 ± 4.00 for trust in the person/institution covering the costs (theoretical range: 4–20), and 10.07 ± 2.19 for trust in healthcare institutions (theoretical range: 3–15) (not given in the table).

The descriptive characteristics of the participants and their MTHCSS median scores are presented in Table 3. In the study, no statistically significant differences were detected between MTHCSS general dimension and median scores of all sub-dimensions and gender, marital status, presence of social security, disability, and presence of chronic disease. It was found that MTHCSS general dimension scores were higher in those living in towns (p=0.003), those who had primary school education and below (p=0.002), and those who defined their income levels as good/moderate (p<0.001). Trust in healthcare professionals sub-dimension scores among those aged 65 and over (p=0.009), those living in towns (p=0.003), those who had primary school education and below (p=0.001) and were higher in those who defined their income as good or moderate (p<0.001). It was also found that the sub-dimension scores of trust in the person/institution that covered the cost those who defined their income level as good or moderate (p<0.001). The sub-dimension scores of trust in healthcare institutions were higher in those whose education levels were primary school or below (p=0.006) and those who defined their income levels as good or moderate (p<0.001).

Table 3. Comparison of MTHCSS Median Scores According to the Descriptive Characteristics of the Participants (n=472)

		General dimension				Trust in healthcare professionals				Trust in the person/institution covering the cost				Trust in healthcare institutions			
	N	**Median (Q1-Q3)**	**Z**	**p**	**r**	**Median (Q1-Q3)**	**Z**	**p**	**r**	**Median (Q1-Q3)**	**Z**	**p**	**r**	**Median (Q1-Q3)**	**Z**	**p**	**r**
Gender																	
Female	182	64 (57-71)	-0.069	0.945	-0.003	40 (35-46)	-0.974	0.330	-0.045	13 (11-16)	-1.838	0.066	-0.085	10 (9-11)	0.974	-0.033	-0.002
Male	290	64 (55-71)				39 (34-45)				14 (11-17)				10 (9-11)			
Age																	
40-64	323	63 (55,5-71)	-1.836	0.066	-0.084	39 (34-44)	-2.606	**0.009**	-0.120	14 (11-16)	-1.256	0.209	-0.058	10 (9-11)	-0.011	0.991	-0.001
≥65	149	65 (58-72)				41 (36-47)				14 (11-17)				10 (9-11)			
Place of residence																	
Town	275	65 (58-73)	-2.941	**0.003**	-0.135	40 (36-46)	-2.950	**0.003**	-0.136	14 (11-17)	-1.992	0.046	-0.092	10 (9-11)	-2.102	0.036	-0.097
Village	197	62 (54-69)				38 (33-43)				13 (11-16)				10 (9-11)			
Education level																	
Primary school education and below	336	64 (58-72)	-3.097	**0.002**	-0.142	40 (36-46)	-3.271	**0.001**	-0.151	14 (11-16)	-1.859	0.063	-0.086	10 (9-11)	-2.764	**0.006**	-0.127
Secondary school and higher education	136	59,5 (52-69)				38 (32-43)				13 (10-16)				10 (8-11)			
Marital status																	
Married	373	64 (57-71)	-1.180	0.238	-0.954	40 (36-45)	-0.141	0.888	-0.006	14 (11-16)	-1.435	0.151	-0.066	10 (9-11)	-1.689	0.091	-0.078
Other	99	62 (54,5-71)				39 (32,5-46)				13 (10-16)				10 (8-11)			

Table 3. (Continued) Comparison of MTHCSS Median Scores According to the Descriptive Characteristics of the Participants (n=472)

		General dimension				Trust in healthcare professionals				Trust in the person/institution covering the cost				Trust in healthcare institutions			
	N	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r
Working status																	
Worker	176	63 (54-71)	-1.782	0.075	-0.082	39 (32,5-44)	-2.009	0.045	-0.092	14 (11-16)	-0.562	0.574	-0.026	10 (8-11)	-1.930	0.054	-0.089
Not working	296	64 (57-71)				40 (36-46)				14 (11-16)				10 (9-11)			
Social security																	
Yes	399	62 (56-71,5)	-1.220	0.223	-0.056	40 (35-46)	-1.175	0.240	-0.054	14 (11-16)	-0.571	0.568	-0.026	10 (9-11)	-0.511	0.609	-0.024
No	73	62 (56-68)				38 (33-43)				14 (11-16)				10 (9-11)			
Perceived income level																	
Good/ Middle	355	65 (59-72)	-4.568	**<0.001**	-0.210	40 (37-46)	-3.981	**<0.001**	-0.183	14 (12-17)	-3.716	**<0.001**	-0.171	10 (9-11)	-3.596	**<0.001**	-0.165
Bad	117	57 (50-68)				36 (30-43)				12 (10-16)				10 (8-11)			
Disability situation																	
Yes	78	64 (54-73)	-0.210	0.834	-0.010	40 (33-46)	-0.383	0.702	-0.018	14 (11-17)	-0.100	0.920	-0.005	10 (8-11)	-0.419	0.676	-0.019
No	394	64 (56-71)				40 (35-45)				14 (11-16)				10 (9-11)			
Chronic disease																	
Yes	219	64 (56-71)	-0.182	0.829	-0.008	40 (36-46)	-1.157	0.255	-0.053	14 (11-16)	-0.617	0.573	-0.028	10 (9-11)	-0.981	0.399	-0.045
No	253	64 (56-72)				40 (33-45)				14 (11-16)				10 (9-11)			
General health level																	
Good	232	65 (56-73)	-1.943	0.052	-0.089	40 (35,5-46)	-1.314	0.189	-0.060	14 (11-17)	-1.622	0.105	-0.075	10 (9-11,5)	-2.056	0.040	-0.095
Middle/Bad	240	62 (56-69)				38,5 (34-45)				13 (11-16)				10 (9-11)			

Mann–Whitney U test (Bonferroni correction, α = 0.0125; r = Z/√N).

Table 4 presents the distribution of MTHCSS median scores according to self-reported unmet/inaccessible healthcare needs. It was determined that the median scores of the overall MTHCSS and all its subdimensions were significantly lower among participants who reported unmet healthcare needs, those who were unable to access healthcare professionals, and those who were unable to access healthcare/examination services in the last 12 months ($p<0.001$). Those who could not access equipment/medication/information about the disease ($p=0.003$), physician ($p<0.001$), dentist ($p=0.001$), oral and dental healthcare services ($p<0.001$) and the prescribed medication ($p=0.006$) in the last 12 months had lower overall dimension scores. The trust in healthcare professionals sub-dimension scores were found to be lower in those who could not access disease-related equipment/drug/information ($p=0.008$), physicians ($p<0.001$), dentists ($p=0.003$), examination services ($p=0.002$), oral and dental healthcare services ($p=0.001$) and prescribed medication ($p=0.009$). The sub-dimension scores of trust in the person/institution covering the cost were lower in those who could not access equipment/drug/information about the disease ($p=0.004$), physician ($p=0.001$), dentist ($p=0.001$), examination services. ($p<0.001$), oral and dental healthcare services ($p=0.001$). It was also determined that the trust in healthcare institutions sub-dimension scores were lower in those who did not have access to physicians ($p=0.002$), dentists ($p=0.011$) and examination services ($p<0.001$).

Table 5 presents the results of the multiple linear regression analysis examining predictors of trust in the healthcare system. The overall model was statistically significant ($F=9.95$, $p<0.001$) and explained 13% of the variance in trust scores ($R^2=0.13$; Adjusted $R^2=0.11$). Individuals who reported unmet healthcare needs had significantly lower trust scores compared to those without unmet needs ($B=-6.61$, $p<0.001$). Living in towns was associated with higher trust scores compared to living in villages ($B=3.71$, $p=0.001$). Participants with middle or higher education levels had significantly lower trust scores compared to those with low education ($B=-4.31$, $p=0.002$). Compared with individuals with high income, those with low income had significantly lower trust scores ($B=-5.61$, $p=0.002$), whereas middle income was not significantly associated with trust. Gender was not significantly associated with trust scores.

Table 4. Comparison of MTHCSS Median Scores According to Self-Reported Unmet/Inaccessible Healthcare Needs (n=472)

		General dimension				Trust in healthcare professionals				Trust in the person/institution covering the cost				Trust in healthcare institutions			
	N	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r
Self-reported unmet healthcare needs in the past 12 months																	
Yes	143	59 (50-67)	-5.691	**<0.001**	-0.262	37 (30-42.5)	-4.326	**<0.001**	-0.199	12 (10-15)	-5.997	**<0.001**	-0.276	10 (8-11)	-4.747	**<0.001**	-0.219
No	329	66 (59-73)				40 (36-46)				15 (12-17)				10 (9-11)			
Unmet healthcare needs in the past 12 months (n=143)																	
Inability to access healthcare professionals																	
Yes	96	59 (46.5-66.5)	-4.962	**<0.001**	-0.228	36 (29-42)	-4.683	**<0.001**	-0.215	12 (10-15)	-4.430	**<0.001**	-0.204	9 (7.5-11)	-3.680	**<0.001**	-0.169
No	376	65 (58-72)				40 (36-46)				14 (12-17)				10 (9-11)			
Inability to access health care/examination services																	
Yes	118	59 (50-66)	-5.474	**<0.001**	-0.252	37 (30-42)	-3.995	**<0.001**	-0.184	12 (10-14)	-6.013	**<0.001**	-0.277	9 (8-11)	-4.448	**<0.001**	-0.205
No	354	65 (58-73)				40 (36-46)				14 (12-17)				10 (9-11)			
Inability to access equipment/medication/information about the disease																	
Yes	59	58 (50-70)	-2.975	**0.003**	-0.137	36 (30-43.5)	-2.662	**0.008**	-0.122	12 (11-14)	-2.843	**0.004**	-0.131	10 (8-11)	-1.982	0.047	-0.091
No	413	64 (57-72)				40 (36-46)				14 (11-16)				10 (9-11)			
Healthcare professionals who could not be reached in the last 12 months (n=96)																	
Inability to access a physician																	
Yes	75	60 (46.5-67-5)	-4.078	**<0.001**	-0.188	37 (28-41)	-3.969	**<0.001**	-0.183	12 (9.5-15.5)	-3.478	**0.001**	-0.160	10 (8-11)	-3.025	**0.002**	-0.139
No	397	65 (57-72)				40 (36-46)				14 (11-17)				10 (9-11)			

Table 4. (Continued) Comparison of MTHCSS Median Scores According to Self-Reported Unmet/Inaccessible Healthcare Needs (n=472)

		General dimension				Trust in healthcare professionals				Trust in the person/institution covering the cost				Trust in healthcare institutions			
	N	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r	Median (Q1-Q3)	Z	p	r
Inability to access the dentist																	
Yes	24	51.5 (48-64.5)	-3.366	**0.001**	-0.155	33.5 (30.5-41)	-2.966	**0.003**	-0.137	10.5 (10-12)	-3.333	**0.001**	-0.153	8 (6.5-11.5)	-2.528	**0.011**	-0.116
No	448	64 (57-71.5)				40 (36-46)				14 (11-16)				10 (9-11)			
Inability to access other healthcare personnel																	
Yes	15	60 (51-67.5)	-1.077	0.282	-0.050	39 (34-42)	-0.671	0.502	-0.031	11 (9.5-14)	-1.979	0.048	-0.091	11 (7-13)	-0.165	0.869	-0.008
No	457	64 (56-71)				40 (35-46)				14 (11-16)				10 (9-11)			
Inaccessible healthcare services in the last 12 months (n=118)																	
Inability to access examination services																	
Yes	73	59 (50-68)	-4.305	**<0.001**	-0.198	37 (31-43)	-3.108	**0.002**	-0.143	12 (9-14)	-4.814	**<0.001**	-0.221	9 (8-10)	-4.349	**<0.001**	-0.200
No	399	65 (57-72)				40 (36-46)				14 (12-17)				10 (9-11)			
Inability to access treatment services																	
Yes	51	61 (50.5-68)	-2.038	0.042	-0.094	38 (31-46)	-1.328	0.184	-0.061	12 (10-16)	-2.119	0.034	-0.098	9 (8-11)	-2.306	0.021	-0.106
No	421	64 (56-72)				40 (35-46)				14 (11-16)				10 (9-11)			
Inability to access oral and dental healthcare services																	
Yes	34	58 (50-64)	-3.807	**<0.001**	-0.175	36 (31-40)	-3.271	**0.001**	-0.150	11 (10-12)	-3.444	**0.001**	-0.158	9 (8-11)	-2.257	0.024	-0.104
No	438	64 (57-72)				40 (36-46)				14 (11-16)				10 (9-11)			

Table 4. (Continued) Comparison of MTHCSS Median Scores According to Self-Reported Unmet/Inaccessible Healthcare Needs (n=472)

		General dimension				Trust in healthcare professionals				Trust in the person/institution covering the cost				Trust in healthcare institutions			
	N	**Median (Q1-Q3)**	**Z**	**p**	**r**	**Median (Q1-Q3)**	**Z**	**p**	**r**	**Median (Q1-Q3)**	**Z**	**p**	**r**	**Median (Q1-Q3)**	**Z**	**p**	**r**
Inability to access home care and monitoring services																	
Yes	13	55 (50-62)	-1.817	0.069	-0.084	34 (32-46)	-0.747	0.455	-0.034	11 (9-13)	-2.411	0.016	-0.111	8 (8-10)	-2.170	0.030	-0.100
No	459	64 (56-71)				40 (35-46)				14 (11-16)				10 (9-11)			
Inaccessible disease-related equipment or drugs in the past 12 months (n=55)																	
Inability to access prescribed drugs																	
Yes	31	57 (48.5-66.5)	-2.726	**0.006**	-0.125	36 (28.5-42)	-2.617	**0.009**	-0.120	12 (11.5-14)	-1.530	0.126	-0.070	10 (8-11)	-2.010	0.044	-0.092
No	441	64 (57-71)				40 (35-46)				14 (11-16)				10 (9-11)			
Inability to access disease-related equipment																	
Yes	27	61 (54.5-71)	-0.590	0.555	-0.027	39 (34-46)	-0.138	0.890	-0.006	12 (11-14)	-2.292	0.022	-0.106	10 (9-11)	-0.425	0.671	-0.020
No	445	64 (56-71)				40 (35-46)				14 (11-16)				10 (9-11)			

Mann–Whitney U test (Bonferroni correction, α = 0.0125; r = Z/√N.

Table 5. Multiple Linear Regression Analysis Predicting Trust in the Healthcare System (N=472)

Veriables	B	95% CI	β	p
Self-reported unmet healthcare need				
No (Ref)	-6.61	-8.99 – -4.22	-0.242	**<0.001**
Yes				
Gender				
Male (Ref)	-0.22	-2.49 – 2.05	-0.009	0.847
Female				
Age	0.03	-0.07 – 0.13	0.027	0.567
Residence				
Village (Ref)	3.71	1.50 – 5.93	0.146	**0.001**
Town				
Education				
Low (Ref)	-4.31	-6.98 – -1.64	-0.155	**0.002**
Middle/high				
Income				
High (Ref)	-1.83	-5.03 – 1.36	-0.071	0.260
Middle				
Income				
High (Ref)	-5.61	-9.21 – -2.02	-0.193	**0.002**
Low				

Model statistics: $R^2 = 0.13$, Adjusted $R^2 = 0.12$, $F = 9.95$, $p < 0.001$

DISCUSSION

In the present study, participants living in towns had significantly higher scores in the MTHCSS general dimension and in the "trust in healthcare professionals" sub-dimension compared to those living in villages. This difference may be attributed to the continuous provision of primary healthcare services through family healthcare centers in towns and the relatively easier access to healthcare services compared to rural villages. Unlike our study findings, according to the results of another study in which the same scale was used, the mean score of the sub-dimension of trust in the person/institution that covered the cost did not differ according to the place of residence, and the average score of the scale general dimension and other sub-dimensions were higher in those who lived in villages (Usta, 2016).

As a result of the present study, it was found that the general dimension, trust in healthcare professionals, and trust in healthcare institutions sub-dimension scores were significantly higher in those whose education level was primary school or below. In studies where the same scale was used, it was reported that the general scale scores of those who have primary education (Nal, 2021) or primary school and below (Usta, 2016) were higher, and the sub-dimension scores of trust in healthcare professionals decreased as education levels increased (Usta, 2016). When the international literature was examined, results supporting our study findings were found. In the study conducted in Israel, those who had lower education levels had higher levels of trust in the healthcare system (Pinchas-Mizrachi et al., 2020); In a study, which included participants from 144 countries, it was reported that among participants in the Middle East and North Africa and Sub-Saharan Africa, those who had higher education levels were less likely to trust doctors and nurses (Moucheraud et al., 2021). In a study that was conducted in Northern Sweden, it was reported that, unlike our findings, those who had low education levels had lower trust levels in the healthcare system (Baroudi et al., 2022). This discrepancy may be explained by differences in healthcare system structures, welfare models, and sociocultural contexts, which can influence how education level relates to institutional trust. It is considered that as the level of education increases, the expectations of individuals and the probability of questioning the services they receive will also increase. For this reason, in this study, it was expected that those who had low education levels had higher trust levels.

It was found in the present study that the general dimension and all sub-dimension scores of the scale were significantly higher in those who defined their income levels as good/moderate. It is considered that people who live in rural areas have more physical barriers to accessing

healthcare services than those living in urban areas. It can be considered that this finding is associated with the fact that income level is an important tool to overcome physical barriers. In the literature, studies are reporting that the level of trust in healthcare professionals, health institutions, and people/institutions who cover the cost is higher in those who have good income levels, in line with our study findings (Greene & Long, 2021; Moucheraud et al., 2021; Yeşiloğlu, 2020). Unlike our findings, studies are reporting that the mean scores of the scale's general dimension (Nal, 2021) and the sub-dimension of trust in the person/institution that covers the cost do not differ according to income levels (Usta, 2016) and that those who have low income have higher trust levels in the healthcare system and healthcare professionals (Baroudi et al., 2022; Usta, 2016).

In the present study, the sub-dimension scores of trust in healthcare professionals were found to be significantly higher among participants aged 65 and over. Similar to our findings, Usta (2016) reported that participants aged 60 and over had higher scores in the "trust in healthcare professionals" sub-dimension. Likewise, a study conducted in Northern Sweden found that younger participants exhibited lower levels of trust in primary healthcare services (Daerga et al., 2012). Older individuals tend to interact more frequently with healthcare professionals due to greater healthcare needs, which may contribute to higher levels of trust in healthcare professionals.

In the present study, the prevalence of unmet healthcare needs within the last 12 months was found to be 30.3%, which is considerably higher than the rates reported in the international literature. Previous studies have reported unmet need prevalences of 9.9% among adults in Greece (Pappa et al., 2013); 6.3% among individuals aged 16 and over in European countries (Chaupain-Guillot & Guillot, 2015); 17.4% among rural adolescents (Hardin et al., 2021); 9.7% among elderly women in Korea (Choi & Kim, 2021); and below 3% annually in Thailand (Vongmongkol et al., 2021). In our sample, 67.1% of participants with unmet needs reported being unable to access healthcare professionals, 82.5% were unable to access healthcare or examination services, and 41.3% reported difficulties accessing information related to health equipment, medication, or disease management. This apparent contradiction suggests that high healthcare utilization rates do not necessarily indicate equitable or effective access. Structural barriers such as appointment system congestion, regional disparities, waiting times, financial constraints related to indirect costs (transportation, medication, supplementary payments), and limitations in continuity of care may contribute to perceived inaccessibility despite high overall service contact rates. Therefore, unmet healthcare need should be interpreted not merely as the absence of service contact, but as the failure to obtain timely, appropriate, and satisfactory care.

As a result of the study, it was found that the median scores of the overall scale and all its subdimensions were lower among participants whose healthcare needs were unmet in the last 12 months, and among those who were unable to access healthcare professionals and healthcare/examination services. When the literature was reviewed, it was found that there was a significant relationship between inadequate access to healthcare services and distrust in the healthcare system (Mohseni & Lindstrom, 2007).

In the present study, participants who could not access a physician, dentist, or examination services in the last 12 months had significantly lower scores in the overall scale and relevant sub-dimensions. Similarly, individuals reporting self-reported unmet healthcare needs and those who were unable to access healthcare professionals or healthcare/examination services demonstrated lower levels of trust in the healthcare system. These findings are consistent with previous research conducted among prostate cancer patients, which showed that limited access to healthcare services was associated with lower trust in physicians (Do et al., 2010). Overall, the presence of self-reported unmet healthcare needs appears to be negatively associated with trust in the healthcare system.

CONCLUSION

The study demonstrated that participants who reported unmet healthcare needs and those who experienced difficulties accessing healthcare professionals and healthcare/examination services had significantly lower median trust scores in the healthcare system and its subdimensions. In light of these findings, interventions should specifically target structural barriers to access in rural areas. Practical actions may include the development of region-specific appointment support programs, simplified and assisted use of centralized appointment systems for elderly and low-

education groups, and prioritized scheduling mechanisms for individuals reporting repeated unmet healthcare needs. Additionally, community-based educational programs focusing on navigation of the healthcare system and digital appointment platforms may improve effective access. Future research should examine the impact of such targeted interventions on both healthcare utilization patterns and trust in the healthcare system, using longitudinal or quasi-experimental designs to evaluate their effectiveness.

Limitations

This study has some limitations. Due to its cross-sectional design, causal relationships cannot be established. Data were based on self-reports, which may involve recall or reporting bias. The study was conducted only in rural settlements of a single province using an accessible sampling approach, limiting generalizability. Although the Turkish validity and reliability of the MTHCSS had been established, confirmatory factor analysis was not performed in this sample.

Ethics Committe Approval

Ethics committee approval was received for this study from the Kırklareli University Scientific Research Ethics Committee (Date: 08.06.2022, and Approval Number: E-35523585-302.99-49286).

Author Contributions

Idea/Concept: N.P., Y.M.; Design: N.P., Y.M.; Supervision/Consulting: N.P., Y.M.; Analysis and/or Interpretation: N.P.; Literature Search: N.P., Y.M.; Writing the Article: N.P., Y.M.; Critical Review: N.P., Y.M.

Peer-review

Externally peer-reviewed.

Conflict of Interest

The authors have no conflict of interest to declare.

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