Makara Journal of Health Research

Volume 29
Issue 1 *April*

Article 2

4-30-2025

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Recommended Citation

Okuyan CB, Deveci E, Karasu F. Health Literacy, Health Perception, and Influencing Factors Among Immigrants. Makara J Health Res. 2025;29(1):8-16.

Makara J Health Res. 2025;29(1):8–16
doi: 10.7454/msk.v29i1.1770

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Health Literacy, Health Perception, and Influencing Factors Among Immigrants

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Abstract

Background: Individuals living in rural areas face several healthcare disadvantages, including limited access to medical facilities and specialists during emergencies. This study examines healthy lifestyle behaviors, health perceptions, and influencing factors among immigrants in a rural region of southern Türkiye.

Methods: This cross-sectional study involved immigrants registered at a family health center. Data were collected using a sociodemographic questionnaire, the Perception of Health Scale, and the Health Literacy Scale.

Results: Statistically significant differences in THLS-32 scores were found based on participants' occupation, marital status, and education level ($p < 0.05$). A moderately positive correlation was observed between health literacy and health perception scores ($p < 0.05$).

Conclusions: Research on the relationship between health literacy and health perception among immigrants may offer valuable insights for fostering healthier communities, contribute to the existing literature, and inform rural nursing interventions aimed at addressing negative health perceptions.

Keywords: health literacy, immigrants, nursing, perception, Turkey

INTRODUCTION

Immigration is the movement of individuals or groups to new regions for legal or personal reasons, often leading to economic, educational, and health challenges. Immigrant communities, particularly in rural areas, face limited healthcare access, language barriers, and low health literacy, contributing to poor health outcomes and increased hospital visits.[1,2] Health perception influences healthcare-seeking behaviors and preventive practices.[3] To enhance healthcare access and reduce inequalities, it is crucial to understand the factors affecting health literacy and perception.[4]

Health literacy, defined as an individual's ability to make appropriate health decisions and the capacity to understand and use health information, is a fundamental factor influencing health outcomes.[5] Limited or inadequate health literacy is common among immigrants in rural areas,[6] and is associated with negative health outcomes, increased hospitalizations, and higher healthcare utilization rates among this population.[2] Immigrants with low health literacy often experience restricted access to healthcare services.[1,7,8] Factors such as health, education, and culture play a significant role in shaping individuals' health literacy, health perceptions, and demand for healthcare services. Adequate health literacy promotes individual well-being by enabling better understanding and application of health-related information and by improving access to healthcare services. As such, assessing health literacy is essential to identify factors influencing health perceptions and their determinants.[9]

Health perception refers to an individual's view of their own health status.[10] It has been shown to vary based on individual characteristics such as age, gender, physical activity habits, employment status, ethnicity, occupation, education, and income status.[3] Examining health literacy and health perception together is critical to overcoming communication barriers and misunderstandings between patients and healthcare systems, improving health outcomes, and reducing inequalities in healthcare access.

Researchers suggest that exploring the relationship between health literacy and health perceptions among immigrants in rural areas can help build healthier communities, enrich the body of research, and provide opportunities for rural nurses to positively influence negative attitudes toward health. This study aims to enhance our understanding of health literacy and health perception by examining related factors and evaluating how health information impacts the well-being of diverse immigrant groups in rural areas. With these objectives,

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the study seeks to contribute significantly to both scientific literature and practical applications.

Therefore, improving health literacy among rural populations and addressing factors that adversely affect health perception are crucial, especially given the rising rates of migration and the growing migrant population. In light of these considerations, this study aims to examine the relationship between immigrants' sociodemographic characteristics and their health literacy and perception levels. It also explores key influencing factors such as education, cultural background, and healthcare access, and investigates whether a correlation exists between health literacy and perception. The findings are expected to inform targeted interventions to improve health outcomes in immigrant populations.

METHOD

Written approval for the study was obtained from the Public Health Directorate and the Ethics Commission of the University Faculty of Medicine (2019-18/02). The study adhered to the Declaration of Helsinki, ensuring ethical research practices and minimizing risks to participants. All participants provided informed consent. No personal data were collected through the surveys, and participants were free to withdraw from the study at any time.

This study was conducted in a rural area of southern Türkiye with a high concentration of Yörük immigrants, a semi-nomadic ethnic group with distinct cultural and socioeconomic characteristics. The region is economically constrained, with many residents dependent on agriculture, seasonal labor, and small-scale trade. Healthcare access is primarily provided by a single primary healthcare center, which serves as the main point of medical care for the local population. However, limited healthcare resources, language barriers, and cultural differences pose challenges to effective healthcare utilization. Traditional health beliefs, reliance on informal healthcare practices, and low health literacy further influence medical decision-making in the community. These contextual factors were considered when designing the study to ensure an accurate assessment of health literacy and health perceptions among the target population. The study population comprised 2,427 individuals aged 18 and older who were registered at the family health center in 2019. The sample size was determined to be 443 individuals, calculated with a 98% confidence interval and a 5% margin of error. Between April and July 2019, 758 individuals who were registered at the family health center and met the inclusion criteria were contacted using a simple random sampling method. However, 237 participants were excluded because they either withdrew during the survey, left the survey incomplete, or had difficulty communicating. Ultimately, the study included 521 participants.

The inclusion criteria for the study required participants to be 18 years or older, self-identify as Yörük, and reside in the Alahan region. They needed to be able to communicate verbally in Turkish, have no mental or hearing impairments, and voluntarily agree to participate and complete the survey independently. The data for the study were collected using a survey form developed based on literature, along with the Perception of Health Scale (PHS) and the Health Literacy Scale (THLS-32).

Research data were collected using a survey instrument designed in accordance with the existing literature.[1,7,8] The survey included 21 questions aimed at gathering information about participants' characteristics (e.g., age, gender, family type, educational status, marital status, income status), regular medication use, proximity to healthcare facilities, and exercise-related factors. The "Assessment of general bodily health" variable was self-reported, with participants categorizing their health as "good" or "bad" based on their own perception. The "Proximity to health facilities" variable was also self-perceived, with participants indicating whether they considered the nearest healthcare facility "close" or "distant," accounting for factors like transportation and accessibility.

Diamond *et al*. developed the Perception of Health Scale (PHS), dividing it into four subfactors: control center, self-awareness, precision, and health importance. Kadıoğlu and Yıldız revised the scale,[11] adjusting the minimum and maximum scores to 15 and 75, respectively. In this study, the Cronbach's alpha value for the scale was 0.734. The European Health Literacy Research Consortium developed the Turkish Health Literacy Scale (THLS-32) based on a conceptual framework.[12] The THLS-32 scale is a self-report instrument created by Okyay and Abacıgil[13] to assess health literacy. The matrix comprises two dimensions (treatment/service and disease protection/ health promotion) and four processes (accessing, understanding, evaluating, and applying health information), totaling eight components. In this study, Cronbach's alpha value for the scale was calculated as 0.949.

Prior to the start of the study, the data collection form was tested for clarity and comprehension through face-to-face interviews with 13 participants who met the study's inclusion criteria. Participants found the questions clear and understandable. Administering the survey took approximately 15–20 minutes. The face-to-face survey included all relevant questions and scale instruments used in this study.

Data obtained in the research were analyzed using SPSS version (Statistical Package for the Social Sciences) 24.0 for Windows. The normality of the data distribution was assessed using skewness and kurtosis values (± 1), and the data were found to be normally distributed. Descriptive

statistics, including percentages, frequencies, means, standard deviations, minimum and maximum values, were calculated. For normally distributed data, t-tests for independent groups, ANOVA, correlation, and regression analyses were performed. Pearson correlation analysis was used to measure the relationship between PHS and THLS-32 subscale scores. The Pearson correlation coefficient was categorized as very weak (<0.2), weak (0.2–0.39), moderate (0.4–0.59), high (0.6–0.79), and very high (≥ 0.8). Internal consistency was assessed using Cronbach's alpha, with significance set at $p < 0.05$.

RESULTS

The sociodemographic of the participants are shown in Table 1. The mean age of the participants was 36.47 ± 10.81 years, with 57.8% being female and 42.2 % being male. The analysis revealed statistically significant differences in THLS-32 scores among participants based on occupation, marital status, and education level. Additionally, educational status had a statistically significant effect on participants' total PHS scores ($p < 0.05$) (Table 2).

The study found that mean THLS-32 scores were higher among immigrants who regularly used medication, had visited a hospital or doctor within the past six months, and lived near healthcare facilities ($p < 0.05$). Similarly, the mean total PHS scores were higher among immigrants who regularly used medication and perceived their general physical health as good. Notably, a statistically significant difference was observed between these groups ($p < 0.05$) (Table 3).

The study revealed a statistically significant difference in total THLS 32 scores was found among immigrants who received health-related information from healthcare professionals, obtained information about prescribed medications, paid attention to health-related advertisements in mass media, focused on maintaining a healthy weight, and engaged in dieting, exercising, or consuming specific foods or drinks they disliked ($p < 0.05$). Similarly, immigrants who adopted these healthy lifestyle behaviors such as weight management, following a diet and exercise routine, consuming specific disliked foods or drinks for health, and attending to health-related advertisements also had higher mean PHS scores, with statistically significant differences observed between these groups ($p < 0.05$) (Table 4).

Immigrants had a mean total THLS-32 score of 22.65 ± 7.13. The mean scores for the treatment and service subscale and the protection from illness/development of health subscale were 23.08 ± 7.94 and 22.23 ± 7.50, respectively. The mean PHS total score was 40.52 ± 6.60, with the highestsubscale score observed in the "control center" dimension (12.60 ± 4.23) (Table 5). Distribution of categorical THLS-32 scores showed that 5.8% had excellent health literacy (42–50 points), 24.3% had adequate health literacy (33–42 points), 37.2% had problematic-limited health literacy (25–33 points), and 32.7 % had poor health literacy (0–25 points).

TABLE 1. Percentage distribution of descriptive qualities of participants (N = 521)

Variable	N	%
Gender		
Female	301	57.8
Male	220	42.2
Marital status		
Married	430	82.5
Single	91	17.5
Educational status		
Illiterate	55	10.6
Primary education	317	60.8
High school	96	18.4
University	53	10.2
Occupation		
Housewife	212	40.7
Laborer	125	24.0
Civil servant	41	7.9
Retired	81	15.5
Student	26	5.0
Unemployed	36	6.9
Health insurance		
Yes	413	79.3
No	108	20.7
Income status		
No	199	38.2
Yes	322	61.8

A moderate positive correlation was observed between the Perception of Health Scale (PHS) and health literacy levels, indicating that as health literacy increased, so did health perception ($p < 0.05$) (Table 6). The results of the simple linear regression analysis revealed a significant predictive relationship between THLS-32 and PHS scores ($R = 0.509$; $R^2 = 0.259$; $p < 0.01$). The analysis indicated that 25.9% of the variance in health perception was explained by health literacy.

DISCUSSION

In addition to individual social and cultural factors, immigration in rural areas plays a significant role in shaping both health literacy and health perception. Evaluating these factors is essential for minimizing misunderstandings between individuals and the healthcare system and for enhancing the effectiveness of rural nursing interventions aimed at addressing misconceptions. Fundamental determinants such as education and cultural background play a key role in shaping immigrants' health literacy and their interaction with healthcare services in rural communities.

TABLE 2. Distribution of mean THLS-32 and PHS scores among rural immigrants based on sociodemographic characteristics (N = 521)

Variable	THLS-32		PHS	
	Mean ± SD	*p*	Mean ± SD	*p*
Sex				
Female	22.56 ± 7.42	0.645	40.10 ± 6.52	0.146
Male	22.94 ± 6.74		41.09 ± 6.69	
Marital status				
Married	24.65 ± 7.27	0.027*	40.52 ± 6.24	0.992
Single	22.32 ± 7.06		40.51 ± 8.15	
Educational status				
Illiterate	15.86 ± 8.23	0.001*	36.82 ± 5.69	0.001*
Primary education	21.97 ± 6.19		39.58 ± 5.46	
High school	26.65 ± 6.35		42.63 ± 7.37	
University	27.24 ± 7.37		46.11 ± 8.51	
Occupation				
Housewife	22.95 ± 6.86	0.001*	39.35 ± 5.89	0.064
Laborer	23.21 ± 6.32		41.31 ± 6.83	
Civil servant	25.33 ± 7.59		42.63 ± 9.17	
Retired	21.18 ± 6.59		40.88 ± 5.39	
Student	27.74 ± 7.55		41.46 ± 9.25	
Unemployed	17.29 ± 9.18		40.65 ± 5.74	
Health Insurance				
Yes	22.83 ± 7.09	0.519	39.54 ± 6.09	0.134
No	22.30 ± 7.33		40.77 ± 6.72	
Income Status				
No	29.46 ± 9.14	0.606	48.54 ± 7.26	0.949
Yes	29.88 ± 9.14		48.58 ± 7.95	

*$p < 0.05$; THLS-32: Turkish Health Literacy Scale; PHS: Perception of Health Scale

TABLE 3. Distribution of average THLS-32 and PHS scores based on immigrants' use of medications and access to healthcare (N = 521)

Variable	N (%)	THLS-32		PHS	
		Mean ± SD	*p*	Mean ± SD	*p*
Continuous/regular medication use					
Does not use medication regularly	326 (62.6)	21.09 ± 7.03	0.002*	39.58 ± 6.67	0.040*
Uses medication regularly	112 (21.5)	23.71 ± 7.02		41.06 ± 6.62	
Attended a hospital/doctor within the last 6 months					
Yes	352 (67.2)	24.27 ± 6.34	0.007*	40.75 ± 6.64	0.434
No	169 (32.4)	21.98 ± 7.41		40.18 ± 6.81	
Attended a hospital/doctor how many times in the last 6 months					
Never	169 (32.4)	23.91 ± 6.35	0.373	41.14 ± 6.80	0.056
1-3 times	282 (54.1)	22.24 ± 7.26		40.47 ± 6.68	
≥ 4 times	70 (13.4)	22.72 ± 8.21		39.50 ± 6.54	
Reason for attending the hospital/doctor					
Health check-up	237 (45.5)	22.25 ± 7.01	0.572	40.45 ± 6.57	0.212
To get a prescription	90 (17.3)	22.37 ± 6.79		39.55 ± 6.92	
Due to illness	173 (33.2)	23.34 ± 7.64		40.92 ± 6.77	
Accident-injury	21 (4.0)	24.16 ± 5.73		43.23 ± 5.89	
Assessment of general bodily health					
Good	495 (95.0)	22.79 ± 7.14	0.491	40.74 ± 6.59	0.004*
Bad	26 (5.0)	21.52 ± 7.10		36.30 ± 5.72	
Proximity to health facilities					
Close	439 (84.3)	23.12 ± 6.79	0.021*	40.59 ± 6.67	t = 0.489
Distant	82 (15.7)	20.59 ± 8.61		40.14 ± 6.25	$p = 0.625$

TABLE 3. Continues

Variable	N (%)	THLS-32		PHS	
		Mean ± SD	Significance	Mean ± SD	Significance
Health facilities attended					
Family clinician	350 (67.4)	22.52 ± 6.71	0.256	40.08 ± 6.15	0.235
Public hospital	114 (21.7)	22.24 ± 8.33		41.42 ± 7.52	
University hospital	32 (6.1)	25.36 ± 7.87		40.75 ± 6.91	
Private hospital	25 (4.8)	24.44 ± 5.91		42.36 ± 7.72	
Most common reason for attending health organizations and facilities					
To get a prescription	219 (42.0)	21.61 ± 7.36	0.052	40.87 ± 6.94	0.644
Monitor chronic disease	48 (9.2)	22.72 ± 6.30		39.33 ± 6.99	
Preventive health services	33 (6.39)	25.60 ± 5.00		40.42 ± 7.71	
Unexpected situations	221 (42.4)	23.40 ± 7.25		40.44 ± 6.00	

*$p < 0.05$; THLS-32: Turkish Health Literacy Scale; PHS: Perception of Health Scale

TABLE 4. Distribution of mean THLS-32 and PHS scores according to immigrants' healthy lifestyle behaviors

Variable	N (%)	THLS-32		PHS	
		Mean ± SD	Significance	Mean ± SD	Significance
Place where information about health is reached					
Mass media tools	333 (63.8)	23.09 ± 6.58	0.010*	40.29 ± 6.78	0.443
Family members and friends, etc.	43 (8.3)	18.68 ± 9.15		41.83 ± 7.42	
Health employees	145 (27.8)	25.07 ± 7.49		40.66 ± 6.90	
Acquires information about prescribed medications					
Yes	392 (75.2)	24.55 ± 6.39	0.001*	40.84 ± 6.84	0.094
No	129 (24.8)	17.18 ± 7.11		39.55 ± 6.75	
Attention to information related to health provided by mass communication tools					
Yes	380 (72.9)	25.63 ± 5.95	0.001*	41.82 ± 6.74	0.029*
No	141 (27.1)	20.87 ± 7.37		39.71 ± 6.19	
Attention to weight to be healthy					
Yes	393 (75.4)	23.63 ± 6.84	0.001*	41.27 ± 6.73	0.001*
No	128 (24.6)	19.94 ± 7.50		38.22 ± 6.73	
Dieting for health					
Yes	274 (52.6)	24.45 ± 6.22	0.001*	41.26 ± 6.73	0.019*
No	247 (47.4)	20.81 ± 7.72		39.70 ± 6.39	
Regular exercise for health					
Yes	266 (51.1)	24.49 ± 6.89	0.001*	42.08 ± 7.33	0.001*
No	255 (48.9)	20.88 ± 7.04		38.89 ± 6.38	
Consuming some disliked food and drink for health					
Yes	331 (63.5)	23.79 ± 6.39	0.001*	41.61 ± 6.65	0.036*
No	190 (36.5)	20.86 ± 8.06		39.86 ± 6.54	

*$p < 0.05$; THLS-32: Turkish Health Literacy Scale; PHS: Perception of Health Scale

TABLE 5. Distribution of mean THLS-32 and PHS total and subscale scores

	Mean ± SD	Min – Max
THLS-32	22.65 ± 7.13	0 – 41
Treatment and service	23.08 ± 7.94	0 – 43
Obtaining information	23.62 ± 8.17	0 – 40
Understanding information	23.50 ± 8.00	0 – 38
Assessing information	22.75 ± 8.08	0 – 37
Using/applying information	22.46 ± 8.04	0 – 37
Protection from illness/development of health	22.23 ± 7.50	0 – 40
Obtaining information	23.37 ± 8.39	0 – 42
Understanding information	22.85 ± 8.93	0 – 39
Assessing information	20.79 ± 8.44	0 – 43
Using/applying information	20.42 ± 8.79	0 – 41
Obtaining information related to health	23.02 ± 8.12	0 – 43
Understanding information related to health	22.83 ± 7.95	0 – 41

TABLE 5. Continues

	Mean ± SD	Min – Max
Assessing information related to health	22.52 ± 7.64	0 – 42
Using/applying information related to health	22.25 ± 7.74	0 – 44
PHS	40.52 ± 6.60	15 – 60
Importance of health	9.06 ± 2.25	2 – 12
Self-awareness	8.97 ± 2.02	1 – 11
Precision	9.89 ± 3.51	3 – 17
Control center	12.60 ± 4.23	3 – 20
Positive health perception	17.52 ± 3.70	4 – 26
Negative health perception	23.00 ± 6.62	7 – 38

THLS-32: Turkish Health Literacy Scale; PHS: Perception of Health Scale

TABLE 6. Correlation between THLS-32 and PHS scores

	THLS-32	Treatment and service	Disease prevention/health promotion	PHS
THLS-32				
Treatment and service	0.942*			
Disease prevention/health promotion	0.935*	0.521*		
PHS	0.347*	0.318*	0.350*	

*$p < 0.05$; THLS-32: Turkish Health Literacy Scale; PHS: Perception of Health Scale

In this study, mean THLS-32 scores increased significantly with higher levels of educational attainment. Additionally, civil servants had the highest average THLS-32 scores among occupational groups, whereas unemployed individuals had the lowest scores. A similar trend was reported by Gele *et al*., who found that immigrants with higher education levels exhibited greater health literacy.[14] Furthermore, employed migrant women demonstrated higher health literacy than their unemployed counterparts. Education is a critical factor in accurately understanding and applying health-related information for disease management and health maintenance. In contrast, individuals in rural areas with low education levels often show poor adherence to treatment. Employment status has also been associated with health literacy.[15]

Immigrants who regularly used medication, had recently visited a hospital or doctor, or lived near healthcare facilities scored higher on the THLS-32. Additionally, those who actively sought health information from professionals or through mass media also had higher scores. Every day, health-related behaviors such as reading medical news in newspapers or magazines, following doctors' or pharmacists' instructions, reading medication labels, dieting, and exercising are closely associated with health literacy.[16,17] Immigrants who engaged in weight management, dieting, or physical activity for health purposes scored higher on the THLS-32. Increased health literacy has been shown to positively influence behaviors such as maintaining a balanced diet and regular physical activity.[18]

Understanding health literacy among immigrants also requires consideration of their diverse religious, cultural, and ethnic backgrounds. Health literacy is closely linked to the social environment in which individuals live,[19] and cultural factors interact with and shape health literacy.[20] Individual differences also play a role in health literacy and overall health status. While it is possible that participants' disease history before migration may have influenced their health literacy and perception, this study did not specifically examine pre-migration health conditions as a variable. However, pre-migration factors such as general health status, access to healthcare, cultural beliefs about medication use, and the level of adaptation to a new healthcare system likely play a critical role in shaping health literacy and health perception. Future research should further explore these aspects in greater depth to provide a more comprehensive understanding of the determinants of health literacy and perception among immigrant populations. In this study, participants scored highest on the "treatment and service" subscale and lowest on the "protection from disease/development of health" subscale of the THLS-32. Among the sub-processes, "accessing information" received the highest scores, whereas "using/applying information" had the lowest. These findings suggest that immigrants place greater emphasis on disease treatment rather than on health protection and development. Although Yörük immigrants actively seek health-related information, they face difficulties in evaluating and applying it.

Health literacy skills are essential not only for protecting and promoting health but also for increasing the utilization of preventive health services.[13] The mean THLS-32 total score in this study was 22.12 ± 7.13, with 69.9% of participants classified as having "inadequate or problematic/ limited" health literacy. These findings suggest that immigrants' health literacy levels were below average. The process of migration often results in significant health

challenges, with factors such as education, employment, financial stability, social security, housing, diet, cultural norms, and safety strongly influencing health outcomes.[21,22] Post-migration, individuals often experience a decline in their social, economic, and housing conditions compared to their previous circumstances. In this context, it is also important to consider the duration since migration as a potential influencing factor on healthcare utilization. Although our study did not collect specific data regarding how long participants had been living in the region since migrating, we acknowledge that this variable may significantly shape healthcare behaviors. Recent migrants may face challenges such as navigating a new healthcare system, language barriers, or unfamiliarity with available services, which could reduce their use of hospital services. In contrast, long-term immigrants may have better knowledge of, access to, and confidence in utilizing healthcare resources. Therefore, future research should include migration duration as a variable to gain deeper insight into evolving healthcare access patterns, barriers, and facilitators over time within immigrant populations.

Low health literacy is associated with a range of adverse health outcomes, including poor disease management, overreliance on treatment rather than prevention, increased hospitalization, higher healthcare costs, elevated rates of chronic illness, limited use of health indicators, and unhealthy lifestyle behaviors. The lack of comprehensive educational programs on health literacy may contribute to these challenges. In this study, the educational status of Yörük immigrants significantly influenced their health perceptions, aligning with existing literature that highlights the link between education and social determinants of health among immigrant populations.[23]

Individuals who regularly used medication and reported good physical health had higher mean PHS scores. Those who perceive their health positively are more likely to engage in behaviors aimed at maintaining and improving their health.[24] Access to accurate and reliable health information from professionals has also been associated with improved health perception.[25] Immigrants who paid attention to health-related content in mass media, managed their weight, followed a healthy diet, exercised, and consumed certain disliked foods or beverages for health reasons scored higher on the PHS. Individuals who prioritize their health tend to exhibit a stronger sense of responsibility toward their overall well-being.

Despite these behaviors, the study found that immigrants' overall health perception levels were below average. The highest mean score among the PHS sub-dimensions was recorded for “control center,” while “self-awareness” had the lowest scores. Yörük immigrants also scored higher on “negative health perception” compared to “positive health perception” (Table 5). Positive health perception is generally associated with better health management and the adoption of healthier lifestyles. However, the low scores across all sub-dimensions suggest that immigrants tend to perceive control over their health as externally shaped by factors such as chance, fate, or religious beliefs. These results are consistent with other studies reporting limited health perceptions among refugee populations.[26,27] Barriers such as cultural differences, limited access to healthcare, low socioeconomic status, lack of health insurance, and inadequate housing and nutrition contribute to poor health outcomes among migrants.[28]

This study also revealed a significant correlation between health literacy and health perception, with higher levels of health literacy associated with more positive health perceptions. Although few studies have directly examined this relationship, research in other populations supports a strong link between health literacy and health perception.[29] Low health literacy, insufficient health information, and poor health behaviors have been shown to negatively affect health outcomes.[30] Immigrants are particularly vulnerable in this regard, as limited health literacy contributes to higher healthcare costs, reduced access to rural nursing and medical services, and underutilization of preventive healthcare. These findings underscore the crucial role of health literacy in shaping health perceptions among immigrant populations.

This study has several limitations. Firstly, it focused exclusively on Yörük individuals residing in a specific region of Türkiye and relied on data collected from voluntary participants. Because the data were obtained from a single health center and included only registered immigrants, selection bias may affect the generalizability of the findings. Therefore, future studies should include more diverse samples from multiple health centers and demographic groups to strengthen external validity. In addition, response bias, particularly social desirability bias, should be acknowledged as a significant limitation. Participants may have provided socially acceptable responses rather than accurately reporting their actual health behaviors, which may have led to an overestimation of positive attitudes and behaviors. To minimize this bias, future research should incorporate objective health indicators and adopt varied survey methods.

CONCLUSIONS

This study is the first to identify key determinants, health beliefs, and healthy lifestyle behaviors among immigrants living in rural areas of a small city in southern Türkiye. Findings indicate that immigrants in rural settings have lower levels of health literacy and health perception compared to the general population. Both health literacy and perception levels were significantly below average, with most participants categorized as having “inadequate”

or "problematic/limited" health literacy. A significant positive correlation was observed between health literacy and health perception, indicating that higher health literacy is associated with more favorable health perceptions. These results underscore the need to develop culturally and contextually tailored healthcare systems that consider the linguistic, cultural, and socioeconomic challenges faced by immigrants in rural areas. Such systems should be designed to address the specific needs of this population and promote their overall well-being beyond a narrow focus on refugee welfare.

CONFLICT OF INTEREST

None declared.

FUNDING

None declared.

Received: January 6, 2025 | Accepted: March 9, 2025

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