



Geliş Tarihi (Received): 28.01.2026

Kabul Tarihi (Accepted): 01.07.2026

Original Research / Araştırma Makalesi

Attitudes Towards Vaccination, Health Perceptions and Related Factors Among Syrian Migrant Mothers with Children Aged 0-2 Years

0-2 Yaş Çocuğu olan Suriyeli Sığınmacı Annelerin Aşı Tutumları, Sağlık Algıları ve İlişkili Faktörler

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Alıntı (Cite): Havlioğlu S., Kaplan Z. & Karataş H. Attitudes Towards Vaccination, Health Perceptions and Related Factors Among Syrian Migrant Mothers with Children Aged 0-2 Years. YBH Dergisi. 2026;7(2):43-58

Abstract:

Aim: This study aimed to determine the attitudes towards vaccination, health perceptions and related factors among Syrian refugee mothers with children aged 0-2 years.

Methods: The study was designed to be descriptive and cross-sectional in a province in southeastern Turkey between October 2024 and April 2025. The study population consisted of mothers with children aged 0–2 years who had applied to the Migrant Health Centre in the provincial capital. A total of 233 mothers volunteered to participate in the study. Data were collected using the Demographic Information Form, the Health Perception Scale and the Vaccination Attitudes Scale.

Results: Syrian migrant mothers were found to have a positive attitude towards vaccination and a moderate level of health awareness. It was determined that those who obtained information about vaccination and health through healthcare personnel had a more positive attitude towards vaccination. Health perceptions were found to be influenced by the educational status of the mother and father, who decided whether or not to vaccinate the child, obtaining information about vaccination, and whether the source of information was healthcare personnel.

Conclusion: Providing information to migrant mothers and developing strategies to encourage positive attitudes towards vaccinations will improve vaccination services.

Key Words: Vaccination attitudes; health perception; migrant; mother.

Özet:

Amaç: Bu çalışmayla 0-2 yaş çocuğu olan Suriyeli göçmen annelerin aşıya yönelik tutumu, sağlık algısı ve ilişkili faktörlerin belirlenmesi amaçlandı.

Materyal ve Metod: Türkiye'nin güneydoğusunda yer alan bir ilde Ekim 2024-Nisan 2025 tarihleri arasında tanımlayıcı ve kesitsel olarak tasarlandı. Araştırmanın evrenini il merkezinde yer alan Göçmen Sağlığı Merkezine başvuran, 0-2 yaş çocuğu olan anneler oluşturdu. Çalışmaya gönüllü 233 anne katıldı. Verilerin toplanmasında Tanıtıcı Bilgi Formu, Sağlık Algısı Ölçeği ve Aşı Tutumları Ölçeği kullanıldı.

Bulgular: Suriyeli göçmen annelerin aşıya yönelik olumlu tutum gösterdiği, sağlık algılarının orta düzeyde olduğu görüldü. Aşı ve sağlık konusunda bilgilere sağlık personelleri aracılığıyla ulaşanların aşılama tutumlarının daha yüksek olduğu belirlendi. Sağlık algısını; anne, baba eğitim durumu, çocuğa aşı yapılıp yapılmayacağına kimin karar verdiği, aşı hakkında bilgi alma ve bilgi kaynağının sağlık personeli olmasının etkilediği belirlendi.

Sonuç: Göçmen annelerin bilgilendirilmesi, aşılarla karşı olumlu tutumu sağlamaya yönelik stratejiler geliştirilmesi aşılama hizmetlerine katkı sağlayacaktır.

Anahtar Kelimeler: Aşı tutumu; sağlık algısı; göçmen; anne.

Introduction

Today, there are around one billion migrants worldwide. This group accounts for around one-eighth of the global population and includes 281 million international migrants and 82.4 million forcibly displaced people.⁽¹⁾ According to a report by the UNHCR, an average of 337,800 children were born to refugee families each year between 2018 and 2024. By the end of 2024, it is estimated that approximately 49 million (40%) of the 123.2 million people displaced by force will be children under the age of 18. Turkey is the second-largest host country for migrants worldwide.⁽²⁾ According to data from the Turkish Ministry of the Interior's Directorate General of Migration Management, as of 31 July 2025, there were 2,578,480 Syrian refugees under temporary protection in Turkey. Of this population, 361,160 are aged 0–4 and 888,634 are aged 5–17.⁽³⁾

Migration and displacement can negatively impact both migrants and communities, leading to mortality and morbidity.¹ Infectious diseases are one of the causes of mortality and morbidity that can occur before, during and after migration. Factors determining morbidity and mortality from infectious diseases can include the epidemiology of disease in the country of origin and destination, infrastructure capabilities, access to clean water and sanitation, crowded living conditions, accompanying nutritional deficiencies, access to healthcare systems, obstruction of humanitarian aid and vaccination.⁽⁴⁾

On World Health Day 2025, the United Nations Network on Migration (UNNM) stated that pregnant women, mothers, and newborns should have access to basic health services, regardless of their migration status.⁽⁵⁾ Vaccination is a key component of primary healthcare and an essential human right. It is also one of the most cost-effective health investments. It prevents 3.5–5 million deaths from diseases such as diphtheria, pertussis, tetanus, influenza and measles.⁽⁶⁾ The Immunisation Agenda 2030 aims to vaccinate everyone, of all ages and in all circumstances, to promote good health worldwide. It envisages universal access to vaccinations throughout life.⁽⁷⁾ It is important to protect migrants from vaccine-preventable diseases, both to improve their health and to control infectious diseases in the countries to which they migrate.⁽⁸⁾ Studies conducted in many different regions of the world indicate that vaccination rates among migrants are low.⁽⁹⁻¹²⁾ and that they do not get vaccinated due to concerns about side effects, safety and efficacy, and access to vaccination services.⁽¹²⁻¹⁴⁾

One important factor in determining the health status of migrants is the vaccination policies of their destination country. A study comparing the vaccination policies for immigrants in 32 European countries and Switzerland reported that only six countries (18.8%) had specific

policies for vaccinating immigrants. Nineteen countries (59.4%) applied national vaccination schedules and nine countries (28.1%) required specific vaccinations. This study shows that countries have different policies.⁽¹⁵⁾ A meta-analysis examining vaccination practices among immigrants in the United States between 2012 and 2022 found that vaccination rates were insufficient. The analysis also found that immigrants experienced information gaps, language and cultural barriers, inadequate access to healthcare services, and distrust of the healthcare system.⁽¹¹⁾ In a study by Bouaddi and colleagues to determine vaccination rates among migrants in the Middle East and North Africa region, 55 studies from 15 countries were reviewed. The study revealed that only seven countries provided childhood vaccinations, that coverage among migrants was inadequate, and that just 36% of children were vaccinated according to the national schedule.⁽¹⁰⁾ A study of the vaccination status of Syrian refugees in Jordan found that those living in camps experienced fewer barriers to vaccination than those living outside them.⁽¹⁶⁾ The Turkish Population Health Survey found that Syrian migrant women had an average of 5.3 children, and that 60.4% of children aged 12–23 months had received all the necessary vaccinations.⁽¹⁷⁾ The fact that migrants are unaware of the vaccinations their children have received in their home countries may increase the risk of illness and have an impact on vaccination services. In Greece, it has been reported that the vaccination status of 79.3% of migrant children is unknown, and that they experience different clinical problems depending on their geographical region of origin.⁽¹⁸⁾

Migration, war and forced displacement can have a significant impact on individuals' access to healthcare and their health behaviours. During migration, parents' perception of disease risk may decrease due to the stress associated with the process. Syrian migrant mothers may encounter obstacles that prevent them from getting their children's routine vaccinations.⁽¹⁹⁾ This situation can lead to delays, deficiencies or refusals in childhood vaccinations, thereby increasing the risk of infectious diseases reappearing.⁽²⁰⁾

The perception of health is one of the factors influencing individuals' engagement in preventive health behaviors. Perception of health is a subjective concept that reflects an individual's beliefs and emotions rather than their actual physical condition. For this reason, perceived health is considered an indicator that provides information about both the mental and physical health of individuals.⁽²¹⁾ Health perception, which is directly related to the health promotion process, aims to instill healthy lifestyle behaviors in individuals and ensure their continuation.⁽²²⁾ The literature also reports that parents' health perception influences their attitudes toward vaccination.⁽²³⁾ Given their role in their children's vaccinations, it is important

to consider how mothers' perceptions of health influence their decision-making regarding vaccinations.⁽²⁰⁾

Although previous studies have examined vaccination coverage among migrant populations, limited research has focused on the combined role of maternal health perception and vaccination attitudes, particularly among Syrian migrant mothers with young children. This study was conducted to determine the attitudes of Syrian migrant mothers with children aged 0–2 towards vaccination and health perception, as well as related factors. It is hoped that the findings of this study will contribute to improving vaccination services for migrant children.

Materials and Methods

Article Type

The study was designed as descriptive and cross-sectional.

Universe and Sample of the Research

This study was designed as a descriptive, cross-sectional study. It was conducted between October 2024 and April 2025 in a province located in southeastern Turkey. The study population consisted of mothers with children aged 0–2 years who sought care at the Migrant Health Center located in the provincial capital. The Migrant Health Centre was set up to improve migrant groups' access to healthcare services in Turkey. The centre provides free primary and secondary healthcare.

The G*Power programme was used to calculate the required sample size for the study. Based on a power level of 95%, a significance level of 0.05 and an effect size of 0.3, the minimum required sample size was found to be 147. Due to the potential for data loss, the sample size was increased by 50% to a target of 221 volunteers willing to participate in the study. Ultimately, 233 individuals were recruited. The study used the convenience sampling method.

Data Collection Tools

Data were collected using the Identifying Information Form, Health Perception Scale and Vaccination Attitudes Scale. These were collected by researchers through face-to-face interviews conducted with the help of an interpreter at a migrant health centre. The survey took 10–15 min to complete.

Information Form

This form contains 22 questions about the mother's decision to vaccinate her child. The questions cover the participant's age, income, education, employment, number of children,

access to health and vaccination information, whether the child has received age-appropriate vaccinations, whether the mother has refused vaccination, whether the mother is aware of the side effects of vaccination and whether the mother has had her child receive special vaccinations. The form was prepared by the researchers based on the literature.^(12,19,21,22)

Perception of Health Scale:

The Perception of Health Scale was developed by Diamond et al. (2007), and its validity and reliability in xxx were established by Kadioğlu and Yıldız (2012). The scale is a five-point Likert-type measure consisting of 15 items and four sub-factors. Items 1, 5, 9, 10, 11, and 14 are positive statements, while items 2, 3, 4, 6, 7, 8, 12, 13, and 15 are negative statements. Positive statements are scored as follows: 'Strongly agree = 5,' 'Agree = 4,' 'Undecided = 3,' 'Disagree = 2,' and 'Strongly disagree = 1.' Negative statements are scored in reverse. The minimum possible score on the scale is 15, and the maximum is 75. Cronbach's alpha coefficient was found to be 0.77 for nursing students and 0.70 for family members.⁽²⁴⁾ In this study, the Cronbach's alpha coefficient of the scale was found to be 0.84.

Vaccine Attitudes Scale

The Vaccine Attitudes Scale was developed by Wallace et al. Its validity in xxx was confirmed by Ceylan et al. in 2021. The scale comprises 11 items on a 3-point Likert scale designed to measure parents' attitudes towards vaccines. The scale has five sub-dimensions: 'Benefits of vaccination' (items 1 and 2), 'Past vaccination behaviour' (items 3 and 4), 'Effectiveness and safety' (items 5 and 6), 'Awareness of vaccine-preventable diseases' (items 7 and 8), and 'Trust' (items 9, 10 and 11). Each item on the scale is scored as follows: Agree = 1, Undecided = 2, Disagree = 3. The total score that can be obtained from the scale ranges from 11 to 33 points. As the score obtained from the scale increases, so does parental hesitation towards vaccination, indicating a negative attitude towards vaccination. The Cronbach alpha coefficient of the scale was found to be 0.66.⁽²⁵⁾ This study found that the Cronbach alpha coefficient of the scale was 0.60.

Data Analysis

Statistical analysis of the data was performed using the Statistical Package for Social Sciences (SPSS 26.0) software package. The Shapiro-Wilk test and the skewness and kurtosis coefficients were used to assess whether the data were normally distributed. The analysis involved descriptive statistics (number, percentage, mean), a t-test for independent groups, an analysis of variance and a Tukey HSD test for post hoc multiple comparisons. All statistical evaluations were considered significant at $p < 0.05$.

Ethical Considerations

Permission to conduct the study was obtained from the Clinical Research Ethics Committee of a university (session no. 33, decision no. 01, dated 09.09.2024), the Provincial Health Directorate, the mothers participating in the study and the authors of the scale. The study was conducted in accordance with the Helsinki Declaration.

Results

The average age of the mothers was 28.76 years (SD 6.42). Twenty-eight per cent were primary school graduates, 50.6 per cent had an income equal to their expenses, and the average number of children was 3.4 (SD 1.94). 91.8% of mothers reported having their children vaccinated with all age-appropriate vaccines. 3% refused vaccination and 52.8% stated that healthcare personnel had influenced their decision to vaccinate their children. Other descriptive characteristics are presented in Table 1.

Table 1 Descriptive Characteristics of Participants (n=233)

	Frequency (n)	Percentage (%)
Mother's Age (28.76 ± 6.42)		
18-27	114	48.9
28-44	119	51.1
Mother Education		
Illiterate	24	10.3
Literate	36	15.5
Primary school	66	28.3
Middle school	31	13.3
High school	34	14.6
University and above	42	18.0
Father's age(33.36± 7.73)		
18-33	111	47.6
34-60	122	52.4
Father Education		
Illiterate	23	15.0
Literate	16	10.5
Primary school	34	22.2
Middle school	30	19.6
High school	22	14.4
University and above	28	18.3
Income Status		
Income is less than expenses	106	45.5
Income is equal to expenses	118	50.6
Income is more than expenses	9	3.9
Marital Status		
Married	226	97.0
Single/Widowed	7	3.0
Area of residence		
Provincial capital	117	50.2
District capital	51	21.9
Village/town	40	27.9

Table 1 Descriptive Characteristics of Participants (n=233)(Continued)

Number of Children (3.4±1.94)		
1-3	129	55.4
4-13	104	44.6
Place of birth		
At home	10	4.3
In hospital	223	95.7
Did your baby experience any health problems related to pregnancy, birth or the postnatal period during your last birth?		
Yes	8	3.4
No	225	96.6
How old is your child?		
0-11	128	54.9
12-24	105	45.1
Gender of the baby		
Female	118	50.6
Male	115	49.4
When you took your child to the health institution for their first vaccination, did you receive enough information about the vaccine?		
Yes	209	89.7
No	24	10.3
Have all the necessary vaccinations been given to your child for their age/month?		
Yes	214	91.8
No	19	8.2
Have you ever refused to have a vaccine?		
Yes	7	3.0
No	226	97.0
Who decides whether your child should be vaccinated?		
I decide	84	36.1
The father decides	17	7.3
The elders of the family decide	9	3.9
Healthcare professionals decide	123	52.8
Where do you find information on the benefits and side effects of vaccines and health issues?		
Through print and visual media or via the internet?	15	6.4
Through recommendations from relatives and friends?	22	9.4
Through healthcare professionals?	196	84.1
Does your child have any illnesses, problems or disabilities?		
Yes	4	1.7
No	229	98.3
Have you or your loved ones suffered the loss of, or illness in, a child due to a vaccine-preventable disease?		
Yes	17	7.3
No	216	92.7
Are there any healthcare workers among your family or relatives?		
Yes	33	14.2
No	200	85.8

The average scores for the Health Perception Scale were 47.95 ± 5.45 , and the average scores for the Vaccine Attitude Scale were 17.15 ± 2.99 . The subscale scores are given in Table 2.

Table 2. Average Scores on the Participants' Health Perception Scale and Vaccination Attitude Scale

Scale and Sub-Scales	Min-Max	Mean	Standard Deviation
Control centre	5-25	14.29	3.77
Certainty	3-15	10.55	2.34
The importance of health	4-20	11.72	3.26
Self-awareness	3-15	11.37	2.56
Health Perception Total Scale Score	33-65	47.95	5.45
Benefits of Vaccination	2-6	2.15	0.61
Past Vaccination Behaviour	2-6	4.90	1.48
Efficacy and Safety	2-6	2.43	0.88
Awareness of Vaccine-Preventable Diseases	2-6	4.60	1.54
Trust	3-6	3.21	0.65
Vaccination Attitudes Scale Total Scale Score	11-25	17.32	2.75

Table 3 shows a comparison between the average scores for participants' sociodemographic characteristics and their scores for the Health Perception Scale and Vaccine Attitude Scale. Statistically significant differences were found in the following areas: the educational status of mothers and fathers; the adequacy of information provided about vaccinations when children were taken to ASM/health institutions for their first vaccinations; who decided whether or not to vaccinate the child; how information about the benefits and side effects of vaccinations and health was obtained; and the average scores on the health perception scale ($p < 0.05$). A statistically significant difference was found in the average scores on the vaccine attitude scale according to the methods used to obtain information about the benefits and side effects of vaccines and health. ($p < 0.05$) (Table 3).

Table 3. Comparison of Participants' Socio-demographic Characteristics with Health Perception Scale and Vaccination Attitude Scale Average Scores

	Health Perception Scale		Vaccination Attitude Scale	
	Mean±SD	Statistical Value	Mean ±SD	Statistical Value
Mother's Age				
18-26	47.65 ± 5.12	0.419*	17.41 ± 2.84	0.624*
27-44	48.23 ± 5.75		17.23 ± 2.66	
Mother Education				
No formal education	46.36 ± 5.22	0.009*	17.15 ± 2.96	0.575*
Primary school and above	48.50 ± 5.43		17.38 ± 2.67	
Father's age				
18-33	47.48 ± 5.31	0.157*	17.38 ± 2.79	0.730*
34-60	48.43 ± 5.55		17.26 ± 2.72	
Father Education				
No formal education	46.07 ± 4.79	0.005*	17.32 ± 2.81	0.988*
Primary school and above	48.49 ± 5.52		17.32 ± 2.74	
Income Status				
Income is less than expenses	47.84 ± 5.48	0.791*	17.56 ± 2.89	0.216*
Income equals/exceeds expenses	48.03 ± 5.44		17.11 ± 2.61	
Number of Children				
1-3	48.13 ± 5.66	0.576*	17.49 ± 2.84	0.282*
4-14	47.72 ± 5.19		17.10 ± 2.62	
When you took your child to the health institution for their first vaccination, did you receive enough information about the vaccine?				
Yes	48.15 ± 5.60	0.020*	17.40 ± 2.67	0.191*
No	46.20 ± 3.45		16.62 ± 3.32	
Who decides whether your child should be vaccinated?				
I decide	46.52 ± 4.79	0.002** (1-2)(1-3)	16.98 ± 3.18	0.366**
The father decides	46.92 ± 5.54		17.65 ± 2.79	
The elders of the family decide	49.15 ± 5.61		17.47 ± 2.39	
Where do you find information on the benefits and side effects of vaccines and health issues?				
Through print and visual media or via the internet?	47.93 ± 6.52	0.001** (2-1)(2-3)	15.60± 3.60	0.035** (1-2)(1-3)
Through recommendations from relatives and friends?	43.77± 4.79		17.09 ± 2.92	
Through healthcare professionals?	48.42 ± 5.25		17.47 ± 2.62	
Have all the necessary vaccinations been given to your child for their age/month?				
Yes	48.05±5.35	0.333*	17.35±2.77	0.596*
No	46.78±6.47		17.00±2.53	

*independent simple t-test, **One-way ANOVA

Discussion

This study was conducted to determine the factors affecting the health perceptions and attitudes towards vaccination of Syrian mothers with children aged 0–2 years. The results showed that 91.8% of mothers had vaccinated their children with all age-appropriate vaccines (Table 1), and that they had positive attitudes towards vaccination. (Table 2). A number of studies have reported low vaccination rates among migrants.^(9-12,26,27) The vaccination policies of countries of destination and resettlement play a positive role. This finding may be associated with that this positive role stems from vaccination policies for migrants in Turkey. Syrian migrants receive certain vaccinations when they enter the country at the border and continue to

receive vaccinations free of charge in line with the national schedule. In addition, supplementary vaccinations are being administered to complete vaccination schedules, and acceleration programmes are being implemented in the event of an epidemic. Migrant Health Centres have also been set up to improve migrant groups' access to healthcare services.⁽⁴⁾ In addition, mobile vaccination campaigns have been conducted for refugee children living in regions such as Gaziantep, Kilis and Şanlıurfa, with a particular focus on tents and temporary shelters. Arabic-speaking staff were assigned to these efforts and 'vaccination tracking cards' were used. This initiative forms part of joint health projects carried out by Turkey in collaboration with UNICEF, UNHCR and the WHO. Meanwhile, educational projects carried out by civil society organisations active in providing health services to Syrian refugees focus particularly on health literacy and raising awareness of vaccinations. Seminars supported by Arabic interpreters and women-focused field activities have been organised to encourage migrants to participate in vaccination programmes.⁽²⁸⁾ The 2018 TNSA found that the vaccination rate for children aged 12–23 months was 60.4% among Syrian refugees and 67% among the local population.⁽¹⁷⁾ Similarly, a Canadian study reported that, although vaccine acceptance was generally low among Syrian refugees (36%), it was higher in Canada (84.7%).⁽²⁹⁾ These findings suggest that the health policies of the host country, free vaccination services, language support, and community-based health interventions play a decisive role in vaccine acceptance.

Three percent of parents reported refusing certain vaccinations (Table 1). A study conducted by Koçak and colleagues in 2024 found that 10.6% of Syrian parents were vaccine-hesitant.⁽¹⁹⁾ A study reported that immigrant parents refused or hesitated to have their children vaccinated against meningococcus, HPV, pneumococcus⁽³⁰⁾ and COVID-19.⁽²⁹⁾ In another study, 21% of parents delayed their children's vaccinations, and 12% refused vaccination even though there was no medical necessity.⁽¹³⁾ The fact that the rate of vaccine refusal identified in this study is lower than the rates reported in the literature may be linked to the accessibility of primary healthcare services in the region where the research was conducted, the effective maintenance of routine immunisation services, and the effectiveness of health counselling services for migrants. However, the presence of vaccine refusal, albeit at a low rate, indicates that migrant parents have information needs regarding vaccination and that trust-based approaches must be maintained.

The average score on the Health Perception Scale was 47.95 ± 5.45 . Health perception affects health behaviour. In a study by Elwell et al., 31% of immigrants rated their health as fair

to good, while only 10% rated it as excellent.⁽³¹⁾ Examining the factors affecting health perception revealed that parental educational status had a statistically significant effect. Those who had completed primary school or above had higher health perception scale scores than those with no education (Table 3). A correlation has been found between maternal education level and vaccine hesitancy: those with higher levels of education were found to be less hesitant about vaccines.^(13,19) Similarly, studies have reported that the educational status of fathers influences vaccination practices.⁽³²⁾ These findings suggest that parents' educational attainment is important in terms of accessing health information, accurately assessing healthcare services, and developing awareness of preventive health practices. The fact that parents with higher educational attainment have better health literacy may contribute to increased confidence in vaccines and enable them to participate more consciously in their children's immunisation processes.

This study found that mothers who were given sufficient information about vaccinations had higher health perception scores. It also found that those who received information from healthcare professionals experienced a significant change in their perception of health and attitude towards vaccination (Table 3). A lack of information about vaccinations, or a failure to provide parents with such information, affects children's vaccination rates.⁽³²⁾ A study of immigrants in Norway found that Polish parents considered childhood vaccinations to be safe, had reservations about some vaccines and trusted health services. It was noted that a lack of information was a significant barrier to vaccination.⁽³⁰⁾ A study of Chinese immigrant parents found that their decisions to vaccinate their children were influenced by five factors: institutional factors, lack of information, motivation, barriers to vaccination and social influences. The cost of vaccination and social norms were also found to affect vaccination practices.⁽³³⁾ The fact that healthcare professionals are the main source of information for parents helps reduce their hesitancy about vaccines.⁽¹³⁾ In light of these findings, it is believed that accurate, understandable and culturally appropriate information provided by healthcare professionals strengthens parents' understanding of health and plays a significant role in helping them develop a positive attitude towards vaccines. In migrant communities in particular, the relationship of trust established with healthcare staff is of critical importance in reducing misinformation and anxiety.

The number of children did not affect migrant mothers' perceptions of health or their attitudes towards vaccination (Table 3). However, in a study conducted with migrants in

Bangladesh, having two or more children was reported as an important factor influencing vaccination.⁽³²⁾

Results and Recommendations

This study found that Syrian migrant mothers had a positive attitude towards vaccination and had vaccinated their children at a high rate. Their perception of health was influenced by the educational status of the mother and father, access to information about vaccination and the fact that the source of information was health personnel.

It was determined that Syrian migrant mothers had a moderate level of health perception. Accordingly, it is recommended to plan and implement culturally sensitive and target group-appropriate health education programs aimed at improving mothers' health perceptions. These programs should be structured to address not only vaccination but also maternal and child health from a holistic perspective.

The study found that mothers who accessed information about vaccination and health through healthcare professionals had more positive attitudes toward vaccination. In line with this finding, it is recommended to strengthen the educational and counseling roles of healthcare professionals working in Migrant Health Centers, enhance their effective communication skills, and support the provision of trust-based services.

Considering that parental education level and intra-family decision-making processes influence health perception, interventions should be planned in a family-centered manner, including not only mothers but also fathers and other family members. In particular, informing individuals involved in decision-making regarding child vaccination may contribute to the development of positive health behaviors.

Furthermore, improving migrant mothers' access to accurate and reliable health information is of great importance. In this context, it is recommended to develop multilingual educational materials, conduct community-based awareness activities, and utilize culturally appropriate communication channels.

Strengths and Limitations

This research is both socially and scientifically significant due to its focus on critical public health issues such as migrants' access to healthcare and childhood vaccinations. The research was conducted at the Migrant Health Centre, which was specifically established for the migrant group and provides health services directly. This increased the accessibility of the

target group, thereby enhancing the reliability of the data. The fact that the study was conducted at a single Migrant Health Centre limits the generalisability of the findings. As the vast majority of participants did not speak Turkish, data was collected through interpreters. Since many of the participants did not speak Turkish, using interpreters for data collection may have resulted in a loss of information or misunderstandings.

Another limitation of this study is the relatively low internal consistency of the Vaccine Attitudes Scale (Cronbach's $\alpha = 0.60$). However, considering that the Cronbach's alpha coefficient reported in the original scale development study was also 0.66, the reliability coefficient obtained in the present study appears to be consistent with previous findings. Future studies conducted with larger and more diverse samples are recommended to further evaluate the reliability of the scale.

Conflict of Interests

No conflict of interest.

Source of Institutional and Financial Support

No specific funding was received for this research.

Author contributions

Conceptualization: SH, ZK, HK; Study Design: SH, ZK, HK; Supervision/Consultancy: SH, ZK, HK; Data Collection: ZK; Data Analysis and Interpretation: SH, HK; Preparation of Tables: SH, HK; Literature Review: SH, ZK, HK; Manuscript Writing: SH, ZK, HK; Final Review Before Submission: SH, ZK, HK.

Acknowledgements

The authors are grateful to all the women who participated in the study.

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