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Examination of Parents' Attitudes about Childhood Vaccinations and Their Health Literacy Status

Ebeveynlerin Çocukluk Çağı Aşıları Hakkındaki Tutumları ile Sağlık Okuryazarlığı Durumlarının İncelenmesi

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Abstract

Objective: This study was conducted to evaluate parents' attitudes about childhood vaccination and their health literacy status.

Material and Methods: The population of the study consisted of parents in Türkiye with children between the ages of 0-72 months. The data of the study were collected between November 2022 and September 2023 using the Introductory Characteristics Form, Parent Attitudes About Childhood Vaccines' (PACV) and Health Literacy Scale (HLS-14).

Results: The PACV scale mean score of the participants was calculated as 34.55 ± 18.58, and the HLS-14 scale mean score was calculated as 45.47 ± 9.55. It was determined that there was a significant relationship between the PACV scale and whether the child the parents had was their first child or not, the participant's status of being a mother or father, the parents number of children, and the parent's preference for vaccination even if it was not mandatory. A statistically significant relationship was found between the parents' educational status and HLS-14.

Conclusion: It can be stated that the parents' average PACV and HLS-14 scores are at a medium level and there is no relationship between PCV and HLS-14.

Keywords: Vaccination, child, parental attitude, health literacy

Öz

Giriş: Bu çalışma, ebeveynlerin çocukluk çağı aşıları hakkındaki tutumları ile sağlık okuryazarlığı durumlarının incelenmesi amacıyla yapılmıştır.

Gereç ve Yöntemler: Çalışmanın evrenini 0-72 ay aralığında çocuğu olan Türkiye'deki ebeveynler oluşturmaktadır. Çalışmanın verileri Kasım 2022-Eylül 2023 tarihleri arasında Tanıtıcı Özellikler Formu, Çocukluk Çağı Aşıları Hakkında Ebeveynlerin Tutumları Ölçeği (PACV) ve Sağlık Okur Yazarlığı Ölçeği (HLS-14) kullanılarak toplanılmıştır.

Bulgular: Katılımcıların PACV ölçeği puan ortalamaları 34.55 ± 18.58, HLS-14 ölçeği puan ortalamaları ise 45.47 ± 9.55 olarak hesaplanmıştır. Çocukluk çağı aşıları hakkında ebeveynlerin tutumları ölçeği ile HLS-14 arasında bir ilişki olmadığı belirlenmiştir. Ebeveynlerin sahip oldukları çocuğun ilk çocuk olma durumu, anne ya da baba olma durumu, çocuk sayısı ve zorunlu olmasa da aşı yaptırma durumları ile PACV ölçeği arasında anlamlı bir ilişki olduğu belirlenmiştir. Ebeveynlerin eğitim durumları ile HLS-14 arasında istatistiksel olarak anlamlı bir ilişki olduğu bulunmuştur.

Sonuç: Ebeveynlerin PACV ve HLS-14 puan ortalamalarının orta düzeyde olduğu ve PACV ve HLS-14 arasında bir ilişki bulunmadığı ifade edilebilmektedir.

Anahtar Kelimeler: Aşı, çocuk, ebeveyn tutumu, sağlık okuryazarlığı

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Introduction

Vaccination, one of the world's most cost-effective public health interventions, is a necessity for universal health coverage (1). However, vaccine hesitancy experienced in some countries in recent years poses an obstacle to reaching the desired level of vaccination rates (2). In a systematic review, it is stated that parents' perceptions greatly affect children's vaccination rates. In the same study, it is stated that parents' distrust of vaccination programs and parents' wrong assumptions about vaccination are important obstacles to vaccination (3).

The concept of vaccine rejection, which emerged worldwide in the 1990s, started to be seen in our country in 2010 (4). After a lawsuit filed in Türkiye in 2015, parental consent was brought to the agenda in the administration of childhood vaccines, and after this situation, vaccine rejection rates started to increase (5,6). According to the Health Statistics Yearbook 2017 and 2021 data in our country, it is stated that the diphtheria, whooping cough, tetanus vaccination rate, which was 97% in 2015, decreased to 95% in 2021, the Bacillus Calmette-Guérin vaccination rate, which was 96%, decreased to 95%, the hepatitis B virus vaccination rate, which was 97%, decreased to 96%, the measles, mumps, rubella vaccination rate, which was 97%, decreased to 96% (7,8). These rates show the importance of the effect of parental consent on vaccine rejection. Therefore, it is important to identify the factors that negatively affect parents' attitudes toward vaccination and take the necessary precautions to increase vaccination rates. In addition to parents' beliefs about vaccination, their health literacy status also affects their attitudes towards childhood vaccines (3,9-11). While some studies indicate that parents' attitudes towards childhood vaccines change positively as their health literacy increases, some studies argue the opposite (9-11). In a study, it is stated that parents' health literacy levels have no effect on their attitudes towards childhood vaccines (12). It is important to conduct further studies on this subject to more clearly express the relationship between health literacy and attitudes towards childhood vaccines. This study was conducted as a descriptive study to examine parents' attitudes about childhood vaccines and their health literacy levels.

Materials and Methods

Type of Research

This study was conducted as a descriptive study with the aim of examining parents' attitudes about childhood vaccines and their health literacy status.

Population and Sample of the Research

The data of the study was collected between November 2022 and September 2023. The population of the study consists of parents in Türkiye who have children between the ages of 0-72 months. The number of individuals to be included in the sample was calculated using the A-priori Sample Size Calculator for Multiple Regression program (alpha level= 0.05, effect size= 0.15, number of variables= 11, and desired statistical power level= 0.80) and as a result of the calculation, it was determined that at least 122 people should be reached (13). The snowball sampling method, one of the non-probability sampling methods, was used to reach the participants. The study was completed with the participation of a total of 169 people.

Data Collection Tools

The data of the study were collected using the Introductory Characteristics Form, Parent Attitudes About Childhood Vaccines' (PACV) and Health Literacy Scale (HLS-14) prepared by the researcher. The data of the study were collected online via Google Forms.

Introductory Characteristics Form: It consists of 10 questions including the sociodemographic characteristics of the participants.

Parent Attitudes About Childhood Vaccines': This scale was developed by Opel et al. in 2011 to determine parents' vaccine hesitancy (14). The Turkish adaptation, validity, and reliability study of the scale was conducted by Mutlu in 2021. The scale consists of a total of 15 questions and three sub-dimensions (behavior, general attitudes, and safety-effectiveness). Three different answering methods are used to answer the questions in the scale. The total raw score obtained from the scale is converted into values between 0-100 according to the conversion table prepared by Opel et al. If the parents' total score from the scale is less than 50, they are called vaccine-free parents, and if they are 50 or greater than 50, they are called vaccine-hesitant parents (15). Necessary permissions were obtained for the use of the scale.

Health Literacy Scale: The scale was developed by Suka et al. to measure the health literacy levels of adult individuals (16). Turkish adaptation, validity, and reliability study was carried out by Türkoğlu and Kılıç (17). This 5-point Likert-type scale, which consists of a total of 14 questions, has three sub-dimensions (functional health literacy, interactive health literacy, and critical health literacy). A minimum of 14 and a maximum of 70 points can be obtained from the scale. As the score obtained from the scale increases, the level of health literacy also increases (17). Necessary permissions were obtained for the use of the scale.

Ethical Dimension of the Research

Before starting the research, necessary ethics committee permission (decision no: 14/10/2022-329) was obtained from the Social and Humanities Ethics Committee of a university. Voluntary consent of the participants was obtained through the checkbox placed on the online form. Participants were able to participate in the study after ticking the checkbox

under the information explaining the purpose of the study in the online form.

Evaluation of Data

A computer program was used to evaluate the research data. Percentage, mean, standard deviation, correlation, and regression analyses were performed to evaluate the data. Statistical significance level was accepted as $p< 0.05$.

Results

When the sociodemographic characteristics of the participants were examined, it was determined that the majority of them were mothers, had university or above education level, marital status were married, had a single child, the sex of the child was a girl, living in a nuclear family, income status were income equals expenses, they would get vaccinated even if it was not compulsory, and they did not have vaccination hesitancy (Table 1).

The average score of the participants on the PACV scale was calculated as 34.55 ± 18.58, and the average score on the HLS-14 scale was calculated as 45.47 ± 9.55 (Table 2).

Table 1. Sociodemographic characteristics

	Number (n)	Percent (%)
Marital Status	34.01 ± 22.97	
Married	161	95.3
Single	8	4.7
First Child		
Yes	113	66.9
No	56	33.1
The Degree of Proximity		
Mother	145	85.8
Father	24	14.2
Sex of the Child		
Girl	89	52.7
Boy	80	47.3
Number of Child		
Single child	94	55.6
2-3 children	54	32.0
4 or more children	21	12.4
Status of Education		
High school and below	28	16.6
University and above	141	83.4
Family Type		
Nuclear family	156	92.3
Extended family	9	5.3
Broken family	4	2.4
Income Status		
Income is less than expenses	26	15.4
Income equals expenses	103	60.9
Income exceeds expenses	40	2.7
Status of Vaccination if not Mandatory		
Yes	147	87.0
No	22	13.0
Vaccination Hesitancy According to Scale Score		
Yes	32	18.9
No	137	81.1

Table 2. Parental PACV and HLS-14 mean scores

Scales	Mean ± SD	Median (min-max)
PACV	34.55 ± 18.58	30.00 (0.00-87.00)
HLS-14	45.47 ± 9.55	48.00 (14.00-61.00)

SD: Standard deviation, PACV: Parent attitudes about childhood vaccines', HLS-14: Health literacy scale.

When the sociodemographic characteristics of the parents and their attitudes towards childhood vaccines were compared, it was determined that there was a significant relationship between the status of being the first child of the child they had, the status of being a mother or father, number of children and status of vaccination if not mandatory and the PACV scale. It was determined that the average PACV score of the participants whose child was not a first child, who was a father, who had four or more children, and who said that they would not get vaccinated if it were not compulsory, was higher ($p< 0.05$) (Table 3).

Table 3. Sociodemographic characteristics, PACV and HLS-14

	n	PACV	HLS-14
		Mean ± SD	Mean ± SD
First Child			
Yes	113	31.19 ± 16.29	45.97 ± 8.96
No	56	41.32 ± 21.07	44.46 ± 10.64
Test		U= 2149.000 **p= 0.001**	U= 3046.000 p= 0.693
The Degree of Proximity			
Mother	145	33.67 ± 18.84	45.97±8.48
Father	24	39.83 ± 16.27	42.45±14.31
Test		U= 1272.500 **p= 0.035**	U= 1721.000 p= 0.932
Sex of the Child			
Girl	89	33.14 ± 16.61	45.76 ± 8.56
Boy	80	36.11 ± 20.54	45.15 ± 10.58
Test		U= 3351.500 p= 0.510	U= 3520.000 p= 0.899
Number of Child			
Single child	94	31.03 ± 16.72	46.27 ± 8.12
2-3 children	54	38.24 ± 20.31	45.75 ± 9.80
4 or more children	21	40.80 ± 19.23	41.14 ± 13.46
Test		KW= 8.827 **p= 0.012**	KW= 2.665 p= 0.264
Status of Education			
High school and below	28	38.28 ± 19.06	40.50 ± 12.83
University and above	141	33.62 ± 18.39	46.47 ± 8.49
Test		U= 1586.500 p= 0.111	U= 1395.000 **p= 0.016**
Income Status			
Income is less than expenses	26	37.23 ± 14.19	43.80 ± 9.34
Income equals expenses	103	34.25 ± 19.22	46.35 ± 8.48
Income exceeds expenses	40	33.57 ± 19.64	44.27 ± 11.97
Test		KW= 2.413 p= 0.299	KW= 0.951 p= 0.621
Status of Vaccination if not Mandatory			
Yes	147	30.70 ± 14.58	45.29 ± 9.59
No	22	60.27 ± 22.06	46.63 ± 9.38
Test		U= 494.500 **p= 0.000**	U= 1484.500 p= 0.535

SD: Standard deviation, PACV: Parent attitudes about childhood vaccines', HLS-14: Health literacy scale.

Table 4. Relationship between PACV and HLS-14

		HLS-14
PACV	**r**	-0.087
	p	0.258
PACV: Parent attitudes about childhood vaccines', HLS-14: Health literacy scale.		

Table 5. Effect of HLS-14 on PACV

	B	SE	β	t	p	R	R^2
Constant	42.285	6.968	-	6.068	0.000	0.087	0.008
HLS-14	-0.170	0.150	-0.087	-1.134	0.258		
SE= 18.565, F= 1.286, p= 0.258							
PACV: Parent attitudes about childhood vaccines', HLS-14: Health literacy scale.							

When parents' sociodemographic characteristics and health literacy were compared, it was found that there was only a statistically significant relationship between the participants' educational status and HLS-14 and that the mean scores of the participants with university and above education level were higher ($p< 0.05$) (Table 3).

As a result of the correlation analysis, it was determined that there was no statistically significant relationship between PACV and HLS-14 ($p= 0.258$) (Table 4).

As a result of the regression analysis, it was determined that health literacy did not affect attitudes about childhood vaccines ($p= 0.258$) (Table 5).

Discussion

In our study, parents' attitudes about childhood vaccines and their health literacy levels were examined. The PACV scale mean score of the participants was calculated as 34.55 ± 18.58, and the HLS-14 scale mean score was calculated as 45.47 ± 9.55. Considering the minimum and maximum scores that can be obtained from the scales, it can be said that parents do not experience vaccine hesitancy, and their health literacy is above average.

It is basically the responsibility of the parents to meet the basic needs of children and ensure that they benefit from their rights within the scope of children's rights. The Convention on Children's Rights also states that the best interests of the child must be protected in decisions regarding children and that parents are responsible for this (18). Therefore, parents are the ones who will decide about vaccination, which is one of the safest and least costly methods used for purposes such as preventing and controlling infectious diseases (19). Therefore, determining parents' attitudes about childhood vaccines and eliminating factors that negatively affect this attitude is important to ensure effective immunization. In this study, where we examined parents' attitudes towards childhood vaccines, it was determined that there was a significant relationship between parents' attitudes towards childhood vaccines, whether they were mothers or fathers, their number of children, and the PACV scale. It was determined that the average PACV score of the participants who were fathers and had four or more children was higher. In our study, it was determined that the sex of the child, the parent's education status, and income status factors did not affect vaccination attitudes. Similar to our study findings, Marron et al. have found that parents of four or more children had more difficulty accepting vaccination (20). Wang et al. state that parents with more children have more positive attitudes towards vaccination (21). Some studies have determined that there is no significant relationship between the number of children and vaccination attitudes (22,23). In our study, it was determined that fathers' average PACV scores were higher. Similar to our findings, Wang et al. state that mothers have a more positive attitude towards vaccination (21). Some studies indicate that mothers are more hesitant about vaccination (5,24). There are also studies in the literature stating that whether the parent is a mother or father does not affect vaccination attitudes (20,22,23). In addition, similar to our findings, there are studies in the literature indicating that factors such as the sex of the child, parenteral education status, and income status do not affect vaccination status (20,22,23). Contrary to our findings, there are also studies that determine that factors such as parental education status and income status have a statistically significant effect on vaccine attitudes (21,22,24). In our study, it was also determined that there is a significant relationship between parents' attitudes towards childhood vaccinations, whether their child is a first child, and whether they receive vaccinations if they are not compulsory, and the PACV scale. It was determined that the average PACV score of the participants whose child was not their first child and who said they would not get vaccinated if it were not compulsory was higher. When the literature was examined, no source providing information regarding these data was found. People who become parents for the first time acquire parenting skills with their first child. The possibility of having a negative experience with the vaccine in the first child or the possibility of being exposed to discourses such as anti-vaccination, which has increased in recent years, as the number of children increases, may have affected the higher PACV score averages. Parents who do not consider getting vaccinated if it is not mandatory probably have negative perceptions or experiences about the vaccine. For this reason, PACV score averages are thought to be higher.

It is thought that health literacy, defined as the capacity of individuals to acquire, process, and understand basic health-related concepts and services, as it affects parental self-efficacy, may also affect parents' decision-making processes regarding their children (25,26). Zhang et al. have determined in their study that parents' health literacy status affects their decision-making processes regarding childhood vaccinations (11).

Therefore, it is important to determine the factors affecting the health literacy status of parents. In our study, when parents' sociodemographic characteristics and health literacy were compared; it was found that there was a statistically significant relationship only between the participants' educational status and HLS-14 and that the average score of participants with a university and above education level was higher. In addition, it has been determined that factors such as whether the child is the first child or not, mother or father, gender of the child, number of children, income status, and status of vaccination if not mandatory, do not affect health literacy. Ulusoy et al. have determined that similar to our findings, the status of education affects health literacy and that those with lower education levels have lower average health literacy scores (27). Contrary to our study findings, there are also studies stating that the status of education does not affect health literacy (12,28,29). Similar to our findings, there are publications in the literature stating that factors such as being a mother or father and income status do not affect health literacy. Contrary to our findings, there are also publications stating that factors such as being a mother or father, income status and number of children affect health literacy (12,27-29).

According to the results of correlation and regression analysis in this study, in which we examined parents' attitudes about childhood vaccines and their health literacy, it was determined that there was no statistically significant relationship between parents' attitudes about childhood vaccines and their health literacy and that health literacy did not affect the attitude about childhood vaccines. Ertuğrul and Albayrak have also determined in their study that, similar to our finding, the health literacy level of the parents has no relationship with their attitudes and behaviors towards childhood vaccines (12). Ceylan et al. state in their study that there is a negative relationship between parents' vaccine confidence levels and e-health literacy levels (10).

Conclusion

In this study, it was determined that parents did not experience vaccine hesitancy, and their health literacy was above average. Parents' attitudes towards childhood vaccinations are affected by the variables of whether their child is the first child, whether they are a mother or a father, the number of children they have, and whether they want to be vaccinated even if it is not mandatory. It was determined that health literacy was affected by the status of education variables.

Ethics Committe Approval: This study was obtained from T.C. Adıyaman University Social and Humanities Ethics Committee (Decision no: 329, Date: 14.10.2022).

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