

# Parents' Attitudes to Vaccination

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## ABSTRACT

**Objective:** Immunization is the most effective preventive health measure known to protect children from serious diseases and death. However, in both developed and developing countries, parents may hesitate to vaccinate their children for various reasons. With this study, we aimed to report the attitudes of parents on this issue in our hospital, where patients from all socioeconomic and cultural levels applied due to its location.

**Methods:** A questionnaire was applied to the parents of children aged 0–14 years, who applied to the pediatric outpatient clinics in the 3<sup>rd</sup> level education and research hospital between April 2016 and October 2016, to evaluate their knowledge and attitudes about vaccination.

**Results:** It was observed that 98.1% of the parents participating in the study applied the Ministry of Health vaccination schedule. 29.5% of the parents stated that they experienced side effects after vaccination. The most common side effects are fever (19%), tenderness at the vaccination site (3.8%), diarrhea (2.9%), rash at the vaccination site (1.9%), and convulsion (1.9%), respectively. 75.2% of the parents stated that they did not hear anything negative about vaccines. The reported negative effects are fever (4.8%), allergy (4.8%), vomiting (3.8%), sterility (3.8%), paralysis (2.9%), seizure (1.9%), autism (1%), aluminum content (1%), and disease (1%), respectively. It was observed that 94.3% of the parents wanted their children to be vaccinated, 1.9% did not want to be vaccinated because of the negative news in the media, 1.9% because of different discourses among doctors, and 1.9% because they thought it would be better to pass the diseases naturally.

**Conclusion:** It was seen that most of the parents applied the vaccination schedule of the Ministry of Health. We should not forget the importance of vaccination to protect both individual and public health, and measures should be taken to eliminate unnecessary prejudices of parents in this regard.

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## INTRODUCTION

Vaccination is the safest and most cost-effective method of preventive health measures. It is known that vaccination controls and eliminates life-threatening infectious diseases, prevents 2–3 million deaths each year, and even 1.5 million deaths can be prevented by increasing global vaccination programs.<sup>[1]</sup> As in the rest of the world, the Ministry of Health in our country attaches great importance to vaccination and supports the vaccination of all children within the framework of the determined vaccination program. Considering the vaccinations made in accordance with the Vaccination Schedule of the Ministry of Health of our country, children are vaccinated many times until the 8th grade in the primary education. Considering that special vaccines for rotavirus, influenza, meningococcus, and human papillomavirus are added to these vaccines, this number increases even more.

According to the latest data of the World Health Organization (WHO), approximately 18.7 million infants cannot be

routinely vaccinated against vaccine-preventable diseases such as diphtheria-tetanus-pertussis.<sup>[1]</sup> In underdeveloped or developing countries, although it is mostly economic, sometimes parents may refuse to vaccinate their children for various reasons. Among these reasons, thinking that vaccines have side effects, thinking that their children are not at risk, thinking that the vaccine causes autism, thinking that vaccination is not a natural method, and that a more natural immunization can be obtained by transmitting diseases and traditional reasons can be counted.<sup>[2–6]</sup>

With this study, it is aimed to evaluate the knowledge level of parents about vaccination, to examine the factors that affect whether their children are vaccinated or not, and to convey our results in this regard to the Ministry of Health officials who prepare the relevant health policies.

## MATERIALS AND METHODS

A questionnaire was applied to the parents of children aged 0–14, who applied to pediatric outpatient clinics for

various reasons between April 2016 and October 2016, to evaluate their knowledge and attitudes about vaccination.

Approval was obtained from the ethics committee of our hospital in terms of the applicability of the questionnaire. Explanatory information about the questionnaire was given to the parents before the application, and those who agreed to participate were included in the study. Signed consent was obtained from the respondents that they wanted to participate in the survey.

Data were obtained after a face-to-face interview of a multiple-choice questionnaire to assess families' vaccination knowledge and attitude. The questions asked in the survey are as follows; parent's age, how many children they have, education level, whether they work, income level, whether they apply the vaccination schedule of the Ministry of Health, what vaccinations are included in the Ministry of Health vaccination program, whether it is known whether there are vaccinations other than routine vaccinations, and whether they are necessary. They were asked whether they have ever encountered the effect of the vaccine, what happened if they did, whether they had any negative side effects from the vaccines, whether they thought that their children would get sick less because of vaccination, whether they thought that vaccines protect them from diseases, and as a result, whether they wanted to be vaccinated and if they did not, the reasons were asked.

SPSS 25.0 package program was used for statistical evaluation. In descriptive statistics, categorical data were expressed as frequencies and percentages.

## RESULTS

A total of 105 parents were surveyed. Parental age results were as follows; 58 (55.2%) parents aged 25–35, 36 (34.3%) parents over 35, and 11 (10.5%) parents aged 18–24. Considering the number of children of the parents, having 1 child 23.8% (n=25), having 2 children 41.9% (n=44), having 3 children 25.7% (n=27), and having 4 children or more 8.6% (n=9) was found.

When the education level of the parents was questioned, it was determined that 42 (40%) parents were high school graduates, 30 (28.6%) parents were primary school graduates, 20 (19%) parents were university graduates, and 4 (3.8%) parents were master graduates. Nine (8.6%) parents have never been to school.

It was determined that 76 (72.4%) parents were not working and 29 (27.6%) were working. When the income level of families is questioned, it was determined that 49 (46.7%) families had medium income, 42 (40%) families had low income, and 14 (13.3%) families had high income.

It was observed that 103 (98.1%) of the parents followed the Ministry of Health vaccination schedule. It was noted that 58 (55.2%) of the vaccinated families knew what the vaccine was, and 47 (44.8%) did not know which vaccine they had. It was reported that 65 (61.9%) of the parents knew that there were vaccinations other than the Ministry

of Health vaccination program, and when asked whether non-routine vaccinations were necessary, 45 (42.9%) said they were necessary, but 29 (27.76%) could not have them due to financial reasons.

Thirty-one (29.5%) of the parents stated that they experienced side effects after vaccination. The most common side effects were, respectively, fever (19%, n=20), vaccination site tenderness (3.8%, n=4), diarrhea (2.9%, n=3), vaccination site rash (1.9%, n=2), and convulsion (1.9%, n=2). All of the families who stated that they observed side effects said that they continued the vaccination program. When parents were asked if they heard anything negative about vaccines, 79 (75.2%) stated that they did not hear anything negative. Reported adverse effects are as follows: fever (n=5, 4.8%), allergy (n=5, 4.8%), vomiting (n=4, 3.8%), infertility (sterility) (n=4, 3.8%), paralysis (n=3, 2.9%), convulsions (n=2, 1.9%), autism (n=1, 1%), aluminum content (n=1, 1%), and disease (n=1, 1%).

It was observed that 89 (84.8%) parents thought that their children got sick less because of vaccination. However, it was noted that 93 (88.6%) parents thought that the vaccine really protected them from diseases, and 12 (11.4%) had it done because it was a doctor's recommendation.

Ninety-nine (94.3%) of the parents wanted their children to be vaccinated, 2 (1.9%) due to negative news in the media, 2 (1.9%) due to different discourses among doctors, and 2 (1.9%) due to natural diseases. It has been seen that they do not want to be vaccinated because they think that it is more appropriate to pass it by the other way.

Table 1 shows the questions asked to the parents and their answers.

## DISCUSSION

In our study, we aimed to evaluate the knowledge and attitudes of parents about vaccines in general. Since the province of Istanbul, where the study was conducted, was the region with the highest number of immigrants in Turkey, the volunteers participating in the study differed socioculturally, and we think that the results obtained may reflect the country in general. Our study data showed that, in general, parents support vaccination. We think that this situation is related to the attitude of our country's Ministry of Health regarding vaccination. Within the scope of the Expanded Immunization Program (GBP) carried out by the Ministry of Health, it is aimed to reach a 95% vaccination rate throughout the country and to ensure its continuity, and studies are carried out meticulously in this regard. The health center/family doctor that the person is affiliated with closely monitors the patient and supports him/her in vaccination. In exceptional cases, fixed and mobile teams are formed to reach children in their own homes, and the immunization program is accelerated.<sup>[7]</sup>

In recent years, one of the most common reasons why parents refuse vaccinations is the thought that vaccines

**Table 1.** Results of the questionnaire form evaluating parents' attitudes to vaccination

	N (%):105		N (%):105
Mother's age		Have you experienced any side effects related to vaccines in your child?	
15–24	11 (10.5)	No	74 (70.5)
25–35	58 (55.2)	Yes	31 (29.5)
≥35	36 (34.3)	Which side effect did you see, if so what did you see?	
Number of children		None	74 (70.5)
1	25 (23.8)	Redness	2 (1.9)
2	44 (41.9)	Pain at the vaccination site	4 (3.8)
3	27 (25.7)	Fever	20 (19)
4	4 (3.8)	Remittance	2 (1.9)
5	3 (2.9)	Diarrhea	3 (2.9)
>5	2 (1.9)	Did the vaccine side effect affect your next vaccinations?	
Education level		No	100 (100)
No	9 (8.6)	Have you heard of any negative side effects related to vaccines? What have you heard?	
Primary education	30 (28.6)	None	79 (75.2)
Middle-high school	42 (40)	Paralysis	3 (2.9)
University	20 (19)	Allergy	5 (4.8)
Degree of master	4 (3.8)	Infertility	4 (3.8)
Working status		Remittance	2 (1.9)
Not working	76 (72.4)	Fever	5 (4.8)
Working	29 (27.6)	Vomiting	4 (3.8)
Income rate		Contains aluminum	1 (1)
Low	42 (40)	Causes disease	1 (1)
Middle	49 (46.7)	Autism	1 (1)
High school	14 (13.3)	Do you think your child gets sick less because of vaccination?	
Is the Ministry of Health vaccination schedule applied to your child?		No	16 (15.2)
No	0 (0)	Yes	89 (84.8)
Yes	103 (98.1)	Do you think the vaccine really protects you from diseases?	
Some	2 (1.9)	Yes	93 (88.6)
Do you know which vaccines are available in the Ministry of Health?		I don't know, I do it because the doctor recommends it	12 (11.4)
No	47 (44.8)	Do you want to vaccinate your child? If you don't want it, what is the reason?	
Yes	58 (55.2)	I want to get vaccinated	99 (94.3)
Do you know of any vaccines other than those in the routine vaccination schedule?		Negative news in the media	2 (1.9)
No	40 (38.1)	Different discourses among doctors	2 (1.9)
Yes	65 (61.9)	I think it is more correct to pass the diseases naturally	2 (1.9)
Are vaccines required other than those administered in the routine vaccination schedule?			
No	31 (29.5)		
Yes	45 (42.9)		
It is necessary but I cannot get it done due to financial reasons	29 (27.6)		

can cause autism. This claim, which was first put forward after a publication in the Lancet in 1998, found a great place in social media and convinced large communities that this idea was true.<sup>[6]</sup> Although it was withdrawn from the Lancet after the publication and many studies have been reported that there is no relationship between the vaccine and autism, we still see parents who believe that this idea is correct. In a systematic study conducted in 2010,

the global prevalence of autism in children was found to be 7.6/1000.<sup>[6]</sup> We think that parents' association between the increase in the number of vaccines administered with the introduction of new vaccines and the increasing frequency of autism may cause vaccine rejection. However, it is known that vaccines have no place in the etiopathogenesis of autism. Results of five case–control studies involving 1,256,407 children and a meta-analysis of five cohort

studies involving 9920 children in 2014 showed that there is no relationship between vaccination and autism.<sup>[9]</sup> In our study, 1% of parents thought that vaccines cause autism. We see that this rate is quite low.

After vaccination, there may be common side effects such as fever, redness, and swelling in the area where the vaccine was administered, as well as allergic reactions such as itching and urticarial rash.<sup>[10]</sup> Rarely, serious reactions such as anaphylaxis and encephalopathy may develop, which constitute a contraindication for vaccination with the same vaccine.<sup>[10]</sup> In our study, 29.5% of the parents stated that they had side effects related to vaccines, and the most common side effect was reported as 19% as fever. This was followed by tenderness at the vaccination site (3.8%), diarrhea (2.9%), rash at the vaccination site (1.9%), and convulsions (1.9%).

In our study, it was observed that 42.9% of the parents considered the vaccines that are not yet included in the vaccination calendar of the Ministry of Health necessary, but 27.6% of them could not have them due to financial reasons. This situation is very pleasing to see the sensitivity of our society to vaccination.

According to the 2014 data of the Centers for Disease Control and Prevention (CDC: Centers for Disease Control and Prevention), it is estimated that 322 million diseases, 21 million hospitalizations, and 732.000 deaths were prevented thanks to vaccination in children born between 1994 and 2013.<sup>[11]</sup> In line with the WHO 2011–2020 Global Vaccination Plan, it plans to maximize vaccination and reduce deaths.<sup>[1]</sup> The Ministry of Health of our country continues to work on the implementation of the national vaccination program at the highest level. According to the Ministry of Health Statistics 2019 data; Diphtheria-Tetanus-Pertussis and Hepatitis B vaccination rates, which were 98% in 2018, were 99% in 2019; the measles-rubella-mumps vaccination rate was 96%, whereas it was 97%.<sup>[12]</sup> With this report, we can say that even better results were obtained in terms of vaccination rates.

In our study, we found that 94.3% of the parents wanted to have the vaccines included in the vaccination calendar of the Ministry of Health.

## CONCLUSION

With this study, we have shown that parents have a positive view of vaccination and that they want to have vaccinations that are not included in the routine vaccination program as long as possible.

### Ethics Committee Approval

This study approved by the Kartal Dr. Lütfi Kırdar Training and Research Hospital Ethics Committee (Date: 24.02.2016, Decision No: 2016/514/78/8).

### Informed Consent

Prospective study.

Peer-review

Externally peer-reviewed.

### Authorship Contributions

Concept: A.K., E.E.Ş.; Design: A.K., C.Ç., E.Ş.; Supervision: A.K., E.E.Ş., Y.A.; Materials: A.K., C.Ç., E.Ş.; Data: A.K., C.Ç., E.Ş.; Analysis: A.K., E.E.Ş., Y.A.; Literature search: A.K., C.Ç., E.Ş.; Writing: A.K., C.Ç.; Critical revision: A.K., E.E.Ş., Y.A.

### Conflict of Interest

None declared.

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## Ebeveynlerin Aşılama Konusundaki Tutumları

**Amaç:** Bağışıklama çocukları çok ciddi hastalıklardan ve ölümden koruyan, bilinen en etkili koruyucu sağlık önlemidir. Ancak gerek gelişmiş gerek gelişmekte olan ve gelişmemiş ülkelerde çeşitli nedenlerle ebeveynler çocuklarını aşılamaktan çekinebilmektedirler. Bu çalışma ile konumu itibarıyla her sosyoekonomik ve kültür düzeyinden hastaların başvurduğu hastanemizde ebeveynlerin bu konudaki tutumlarını raporlamayı hedefledik.

**Gereç ve Yöntem:** Nisan 2016–Ekim 2016 tarihleri arasında 3.düzye eğitim araştırma hastanesinde çocuk polikliniklerine çeşitli nedenlerle başvuran yaşları 0–14 arasında değişen çocukların ebeveynlerine aşılama konusundaki bilgi düzeylerini ve tutumlarını değerlendirmek amacıyla bir anket uygulandı.

**Bulgular:** Çalışmaya katılan ebeveynlerin %98.1'nin Sağlık Bakanlığı aşı takvimini uyguladıkları görülmüştür. Ebeveynlerin %29.5'i aşılama sonrası yan etki gördüklerini belirtmiştir. En sık görülen yan etkiler sırasıyla; ateş (%19), aşı bölgesinde hassasiyet (%3.8), ishal (%2.9), aşı bölgesinde kızarıklık (%1.9) ve havale (%1.9) olarak belirlenmiştir. Ebeveynlerin %75.2'si aşılar ile ilgili olumsuz bir şey duymadıklarını belirtmiştir. Bildirilen olumsuz etkiler ise sırasıyla; ateş (%4.8), alerji (%4.8), kusma (%3.8), kısırlık (sterilite) (%3.8), felç (%2.9), havale (%1.9), otizm (%1), alüminyum içermesi (%1) ve hastalık yapması (%1) olarak belirtilmiştir. Ebeveynlerin %94.3'nün çocuklarına aşı yaptırmak istedikleri, %1.9'nun medyada çıkan olumsuz haberler nedeniyle, %1.9'nun doktorlar arasında farklı söylemler olması nedeniyle, %1.9'nin ise hastalıkları doğal yolla geçirmenin daha doğru olduğunu düşünmeleri nedeniyle aşı yaptırmak istemedikleri görülmüştür.

**Sonuç:** Bu çalışmamız ile ebeveynlerin çok büyük kısmının Sağlık Bakanlığı aşı takvimini uyguladıkları görülmüştür. Gerek bireysel gerek halk sağlığının korunması amacıyla aşılanmanın önemini unutmamalı, bu konuda ebeveynlerin gereksiz ön yargılarını yok etmek için önlemler alınması gerektiğini düşünmekteyiz.

**Anahtar Sözcükler:** Aşılama; çocuk; ebeveyn.