

## THE INFLUENCE OF MEDICAL UNDERSTANDING AND PARENTAL VIEWS ON VACCINATIONS REGARDING CHILDREN'S IMMUNIZATION RATES

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### ABSTRACT

The role of infectious diseases is growing increasingly significant among the primary threats to children's health, particularly in low- and middle-income countries. Even with advancements in addressing these diseases, child morbidity and mortality remain critical challenges within the healthcare system. Although official statistics indicate a high vaccination rate for children based on the national vaccination calendar, surveys from foreign countries reveal discrepancies between reported vaccination percentages and actual coverage. This highlights the need to obtain an accurate understanding of vaccination rates in our own country.

**Key words:** Immunization, vaccination, vaccine, national immunization calendar.

### INTRODUCTION

Based on a review of the literature regarding vaccination contraindications, it appears that many healthcare professionals tend to overestimate or misjudge these contraindications [1]. This leads to lower vaccination rates for children and may result in delayed vaccinations. Additionally, parents' perspectives on vaccination vary based on the socio-economic and medical-hygienic conditions in their community. To successfully organize vaccination efforts, it is crucial to examine the justification for contraindications and understand parents' attitudes towards vaccinations [6].

A key goal of the world's most advanced healthcare systems is to immunize children to enhance public health and ensure better health outcomes for their populations. In a study of 74 countries, the average percentage of children who were unvaccinated was 12.9%, while in Europe and Central Asia, this rate was significantly lower at 5.2%. When examining unvaccinated children globally, those living in urban areas had a percentage of 9.4%, compared to 15.1% in rural regions; in Europe and Central Asia, the figures were 4% and 7.7%, respectively. The analysis of the impact of financial status on vaccination rates revealed that the percentages of unvaccinated children among poorer and richer populations were 22.6% and 4.9% worldwide, and 8.1% and 4.5% in Europe and Central Asia. Additionally, maternal education played a role: among mothers of unvaccinated children, a larger proportion had only primary education [5].

When compared to other regions globally, vaccination rates in Central Asia are relatively high. However, between 2019 and 2021, there was a decline in vaccination coverage due to the pandemic, resulting in a rise in the number of children who were unvaccinated or under-vaccinated [4]. Parental decisions regarding vaccinations are shaped by personal beliefs, preferences, and the prevailing health values within society, reflecting trust in medical guidance [3]. Parents who sought advice from pediatricians showed less reluctance than those who consulted general practitioners. Raising awareness and building confidence in vaccinations have proven effective strategies for fostering public trust and increasing knowledge, especially in low- and middle-income areas, directly addressing the concerns of those hesitant about getting vaccinated [2].

### **Research materials and methods.**

*Interview.* A survey was carried out with parents to explore their views on child vaccination. This study utilizes the standard methodology of the National Immunization Survey (NIS) conducted by the Centers for Disease Control and Prevention (CDC).

The questionnaire consists of 34 questions, including general information about parents and children, education of parents and their attitude to immunization, as well as specific questions about the organizational aspects of vaccination. The study involved 800 parents who applied to family clinics in Tashkent. 468 of them (control group) received all vaccines. The children of the remaining 336 mothers did not receive all the vaccines provided for in the national vaccination calendar (patient group).

*Data analysis.* The method of case-control research. Extensive indicators and their errors were calculated to analyze the data obtained. The indicators in the main and control groups were compared using the odds ratio. The Student's criterion

( $p < 0.05$ ) was used to assess the difference between the indicators. A correlation between the indicators was also established.

**Results of the research and discussion:** In the course of our study, the knowledge of parents and their attitude to vaccination were analyzed. According to the results,  $87.1 \pm 3.8\%$  of parents of unvaccinated children consider infectious diseases dangerous to the life and health of the child. For parents of vaccinated children, this figure was  $51.2 \pm 4.8\%$ .

When asked if they had information about possible post-vaccination side effects and complications, parents in the main and control groups answered  $89.9 \pm 3.4\%$  and  $94\%$ , respectively. From this, it can be concluded that parents' awareness of possible conditions, side effects and complications after vaccination has virtually no effect on vaccination coverage (Table 1).

**Table 1**

**Mothers' medical knowledge of immunization**

Factors	Gradation of factors	Vaccinated	Those who have not been fully vaccinated
		%, m	%, m
Why are children vaccinated?	Prevention of infectious diseases in children	$94,9 \pm 2,0$	$92,9 \pm 2,8$
	This is necessary for doctors to complete the vaccination schedule	$1,7 \pm 1,2$	$0,0 \pm 0,0$
	I don't know	$1,7 \pm 1,2$	$7,1 \pm 2,8$
Are infectious diseases dangerous for life and health?	Yes	$50,4 \pm 4,6$	$86,9 \pm 3,7$
	No	$0,9 \pm 0,9$	0
	I do not have specific information	$48,7 \pm 4,6$	$13,1 \pm 3,7$
Are you aware of possible conditions, side effects and complications after vaccination?	Yes	$94,9 \pm 2,0$	$89,3 \pm 3,4$
	No	$0,9 \pm 0,9$	$2,4 \pm 1,7$
	I do not know enough	$4,3 \pm 1,9$	$8,3 \pm 3,0$
Do you want to learn more about immunization?	Yes	$94,0 \pm 2,2$	$91,7 \pm 3,0$
	No	$6,0 \pm 2,2$	$8,3 \pm 3,0$
Do you consider it necessary to cover the prevention of infectious diseases in the media more actively and positively?	Yes	$98,3 \pm 1,2$	$92,9 \pm 2,8$
	No	$1,7 \pm 1,2$	$7,1 \pm 2,8$
Did you know that vaccinations are free of charge?	Yes	$98,3 \pm 1,2$	$94,0 \pm 2,6$
	No	$1,7 \pm 1,2$	$6,0 \pm 2,6$
Do you know about the national vaccination calendar of Uzbekistan?	Yes	$97,4 \pm 1,5$	$91,7 \pm 3,0$
	No	$2,6 \pm 1,5$	$8,3 \pm 3,0$
Do you know about preventive vaccination in accordance with epidemiological instructions?	Yes	$94,9 \pm 2,0$	$91,7 \pm 3,0$
	No	$2,6 \pm 1,5$	$3,6 \pm 2,0$
	I do not know enough	$2,6 \pm 1,5$	$4,8 \pm 2,3$

In examining the factors contributing to the delay in vaccination at this age, it was found that contraindications to vaccination were 3.5 times more prevalent in the main group (66.7±14.2%) compared to the control group (19.2±4.0%) (p<0.01). When parents from both groups were asked about their reasons for vaccinating their child at the regional vaccination facility, the predominant responses highlighted two key points: the vaccinations offered at the state institution are free and parents have a strong trust in the expertise and experience of the professionals there (Table 2).

**Table 2**

**Mother's attitude to vaccination**

Factors	Gradation of factors	Vaccinated	Those who have not received full vaccinations
		%, m	%, m
What do you think about preventive vaccination?	positive	97,4±1,5	88,1±3,5
	negative	2,6±1,5	11,9±3,5
If it is negative, why?	Complications remain after vaccination	66,7±27,2	63,1±5,3
	I don't trust doctors and nurses	0,0±0,0	2,4±1,7
	I doubt the quality of vaccines	0,9±0,9	21,4±4,5
	Vaccines are not stored well	0,0±0,0	1,2±1,2
When will your child receive vaccines?	Depending on the age according to the national vaccination calendar	51,3±4,6	85,7±3,8
	According to the individual plan	48,7±4,6	14,3±3,8
What is the reason for delaying the vaccination that should be given to your child by this age?	With my own desire	79,8±4,0	33,3±14,2
	There was a contraindication for vaccination	19,2±4,0	66,7±14,2
	Our patronage nurse did not warn about the time of vaccination	1,0±1,0	0,0±0,0
Where does your child usually get vaccines?	In the regional family polyclinic	37,6±4,5	90,5±3,2
	In private vaccination centers	62,4±4,5	9,5±3,2
Why do you prefer to get your child vaccinated in a local institution?	Because it is free	90,9±4,3	86,8±3,9
	Doctors are highly qualified	9,1±0,0	13,2±0,0
When your child had a pre-vaccination check-up, did the doctor warn you about possible post-vaccination complications?	Yes	99,1±0,9	90,5±3,2
	No	0,9±0,9	9,5±3,2
Has the vaccination room nurse warned you about possible side effects after vaccination	Yes	99,1±0,9	89,3±3,4
	No	0,9±0,9	10,7±3,4

**Conclusion:** 1. The vaccination rates for children increase with the mother's age and the number of children she has. Mothers aged 32 and above tend to vaccinate their children more.

2. Children cared for by parents or nannies have lower immunization rates compared to those who go to public preschool. Parents who look after their children at home often tend to be overly protective, fearing that even vaccines could harm their children's health.

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