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# KNOWLEDGE AND PRACTICE OF MOTHERS REGARDING CHILDHOOD VACCINATION

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**Introduction:** Vaccines are killed or weakened bacteria, viruses, and harmless toxins that do not have the ability to cause disease. Vaccines train the immune system to produce antibodies and immune substances. Vaccines are used to prevent various infectious diseases by causing the body's immune system to activate and react, allowing it to recognize and create antibodies against invading infections. Vaccines play a critical role in avoiding morbidity and death from fatal childhood diseases.

**Objective:** To determine mothers' awareness of vaccines and their benefits, as well as their level of adaptation—or lack thereof—to vaccines for their children in the year 2023.

**Methods**: A descriptive cross-sectional study was conducted using questionnaires filled out by 516 mothers in the General Pediatric Unit of Maiwand Teaching Hospital in the year 2023. The SPSS 22.0 version was used to analyze all of the data.

**Results:** 516 mothers were interviewed in this study, of whom 51.94% were under 30, and 47.68% were between 30 and 50 years old. 87.79% of the mothers were housewives, and 12% of them were working mothers. The source of mothers' knowledge and awareness were family members in 47%, hospitals and health centers in 32%, and public media in 21% of the cases. 44% of the interviewed mothers had three or fewer children, and 56% had more than four children. 23% of the mothers were literate, and 77% were illiterate. 73% of the interviewed mothers had sufficient information about vaccines, and 71% of mothers had applied vaccines to their children.

**Conclusion:** Overall, vaccination rates were relatively high but could still be optimized. Continued efforts are warranted to enhance maternal education and fully protect all children through standardized immunization schedules in Afghanistan. Addressing disparities can help realize the goal of preventing preventable childhood diseases nationwide.

**Keywords:** Awareness, Practice, Mothers, Childhood immunization, Vaccination.

## 1. Introduction

The World Health Organization (WHO) has defined immunization as the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. These vaccines help stimulate the body's own immune system to protect the person against subsequent infection or disease.[1] Without a doubt, one of the most important public health initiatives to lower serious illnesses that contribute to infant mortality and morbidity is immunization. One significant result of vaccination success is the eradication, significant reduction, and eradication of vaccine-preventable illnesses (VPDs) in children, together with the extension of life expectancy in many nations.[2] Vaccine compliance is an inexpensive and effective method for preventing childhood diseases. Reports from UNICEF indicate that vaccines reduce childhood mortality by 35% during the early years of life. In our country, approximately fifty million dollars are allocated annually to vaccine compliance processes. However, due to a lack of awareness and the presence of misconceptions among the population, not all children are covered by this program. Each year, around 1.2 million children under the age of five are vaccinated with the twelve types of vaccines throughout the country. Surveys conducted in 2013 revealed that, unfortunately, one out of every five children did not receive the necessary vaccines. As a result of research performed at Shah Abdulaziz Hospital in Saudi Arabia in 2021, 76% of mothers had sufficient awareness and knowledge regarding vaccine benefits, and approximately 88% of them had actually utilized vaccines for their children.[3] the findings of a 2019 research conducted at Teaching Hospital in Kerala, India, where approximately 90% of mothers had awareness and knowledge regarding the benefits of vaccinating, and 88% of them had utilized vaccines for their children.[4] a research conducted at one of the hospitals in Khartoum, Sudan, in 2017, where the majority of mothers had knowledge about vaccine

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benefits, and 66% of them had administered vaccines to their children. [5,7] This is primarily due to a lack of appropriate knowledge and information among parents and relatives, influenced by incorrect cultural and belief factors. In our country, as well as in several other countries, a number of parents and relatives do not possess accurate and adequate awareness and information regarding vaccines. They fail to cooperate in vaccinating their children and, in some cases, even prevent their vaccination. Such inappropriate behavior contributes to an increase in the incidence and mortality rates of various childhood diseases. [3,4,5,8] Research on the knowledge and practice of mothers regarding childhood vaccination is a crucial topic in Afghanistan. Vaccination plays a vital role in preventing infectious diseases and reducing child mortality rates. Understanding the knowledge and practices of mothers regarding childhood vaccination is essential for designing effective immunization programs and addressing potential barriers to vaccination coverage in the country. Comprehensive research on the knowledge and practices of mothers regarding childhood vaccination in Afghanistan is crucial for informing evidence-based interventions, strengthening immunization programs, reducing child mortality, and ensuring equitable access to vaccines. By addressing gaps in knowledge and addressing barriers to vaccination, Afghanistan can make significant progress in improving vaccination coverage and protecting the health and well-being of its children. For the reasons mentioned above, we have conducted the research with the aim of determining the level of mothers' awareness regarding vaccines and their benefits.

## 2. Materials and Research Methods

**Study Design:** This cross-sectional descriptive research was conducted from March to June 2022. This study was conducted using questionnaires and interviews with 516 mothers who were admitted with their children in the pediatric department of Miwand Teaching Hospital or who had visited the center. Mothers who did not want to participate in the interview did not participate in this study.

**Sampling Method and Sample Size:** The sampling was performed using the census method, resulting in a total sample size of 516 mothers included in the study.

**Data analysis procedure:** The SPSS program was used to analyze figures, which is usually used for research analysis, and the MS Excel program was also used to prepare and arrange tables.

**Ethical Consideration:** The complete written research protocol and all data collection tools were checked for approval by the Department of Neonatology and the ethical review committee (ERC) of the Kabul University of Medical Science. as well as obtaining consent from the participating mothers. The privacy and confidentiality of the patients are maintained by providing codes to each key informant, and their unrecognizability is maintained throughout the research process.

## 3. Results

Table 1 - Indicators of mothers' awareness and performance regarding vaccination and Its variables

| Variables | Category | Numbers | Percentage (%) |
|---|---|---|---|
| Mother's age in years | 18-30 | 268 | 51.94 |
| | 31-40 | 165 | 31.98 |
| | 41-50 | 81 | 15.70 |
| | 51 and above | 2 | 0.39 |
| | Total | 516 | 100 |
| Mother's occupation | House wife | 453 | 87.79 |
| | Working women | 61 | 12.21 |
| | Total | 516 | 100 |
| Number of children | ≤ 3 | 226 | 43.80 |
| | > 4 | 290 | 56.20 |
| | Total | 516 | 100 |
| Education level of mothers | Literate | 121 | 23.45 |
| | Illiterate | 395 | 76.55 |
| | Total | 516 | 100 |
| Mother's awareness about vaccination | Yes | 376 | 72.85 |
| | No | 140 | 27.13 |
| | Total | 516 | 100 |
| Mother's performance regarding vaccination | Yes | 371 | 71.90 |
| | No | 145 | 28.10 |
| | Total | 516 | 100 |

Table 2 - Levels of awareness and performance regarding vaccination among literate and illiterate mothers

| Education Level | Variables | Category | Numbers | Percentage |
|---|---|---|---|---|
| Illiterate (395) | Awareness | Yes | 258 | 65.32 |
| | | No | 137 | 34.68 |
| | Performance | Yes | 256 | 64.81 |
| | | No | 139 | 35.19 |
| Literate (121) | Awareness | Yes | 118 | 97.52 |
| | | No | 3 | 2.47 |
| | Performance | Yes | 115 | 95.041 |

| | | | |
|---|---|---|---|
| | No | 6 | 4.959 |

As observed in the results presented in Table 2, it is evident that 65.32% of illiterate mothers and 97.52% of literate mothers were found to possess awareness regarding the benefits of vaccination. Moreover, 64.81% of illiterate mothers and 95.041% of literate mothers have utilized vaccines for their children.

Table 3 - Levels of awareness and performance regarding vaccination among mothers based on the source of information

| Source of information | Variables | Category | Numbers | Percentage |
|---|---|---|---|---|
| Family (244) | Awareness | Yes | 107 | 43.85 |
| | | No | 137 | 56.15 |
| | Performance | Yes | 101 | 41.39 |
| | | No | 143 | 58.61 |
| Hospital (163) | Awareness | Yes | 161 | 98.7 |
| | | No | 2 | 1.2 |
| | Performance | Yes | 161 | 98.7 |
| | | No | 2 | 1.22 |
| Media (109) | Awareness | Yes | 108 | 99.08 |
| | | No | 1 | ۰,۹۲ |
| | Performance | Yes | 109 | 100 |
| | | No | 0 | 0 |

As observed in the results presented in Table 3, it is evident that among mothers who primarily rely on family as their source of information, 43.85% of them have the necessary awareness regarding vaccines. Among those who rely on healthcare facilities as their source of information, 98.7% of them exhibit the required awareness regarding vaccines. Similarly, among those who rely on the media as their source of information, 99.08% of them possess the necessary awareness regarding vaccines. Furthermore, among mothers who primarily rely on family as their source of information, 41.39% of them have utilized vaccines for their children. Among those who rely on healthcare facilities as their source of information, 98.7% of them have utilized vaccines for their children. Additionally, among those who rely on the media as their source of information, 100% of them have utilized vaccines for their children.

## 4. Discussion

As observed in the results of this study, 73% of mothers demonstrated awareness and knowledge regarding the benefits of vaccines, and 72% of them had administered vaccines to their children. These findings align closely with a research study conducted at Shah Abdulaziz Hospital in Saudi Arabia in 2021, where 76% of mothers exhibited sufficient awareness and knowledge regarding vaccine benefits, and approximately 88% of them had utilized vaccines for their children. [3] These results indicate minimal differences between the two studies, suggesting a consistent level of performance or utilization of vaccines by mothers. However, when comparing the results of our study with the findings of a 2019 research conducted at Teaching Hospital in Kerala, India, significant differences were observed. In the Indian study, approximately 90% of mothers had awareness and knowledge regarding the benefits of vaccinating, and 88% of them had utilized vaccines for their children. [4] The lower level of awareness and performance among mothers in our study may be attributed to lower literacy rates and limited awareness among the participants. Nevertheless, our findings are relatively consistent with a research study conducted at a hospital in Khartoum, Sudan, in 2017, where the majority of mothers demonstrated knowledge about vaccine benefits, and 66% of them had administered vaccines to their children.[5] Similarly, a research study conducted in 2020 at the Pediatrics Department of the University of Khartoum, Sudan, revealed that the majority of mothers had administered vaccines to their children, aligning with our study's results.[8] Furthermore, a study conducted in 2019 in the city of Addis Ababa, Ethiopia, indicated that 80% of mothers had the necessary awareness regarding the benefits of vaccines, and the majority of them had vaccinated their children. [7] In our study, it was found that the level of awareness and performance of mothers regarding vaccines and their utilization for children were higher among educated mothers compared to those with lower education levels. Additionally, mothers who received information from media and healthcare centers demonstrated higher levels of awareness and positive behaviors compared to those who relied on family as a source of information. These findings are consistent with various research studies. [3, 7]

## 5. Conclusion

The findings of this study indicate that literacy level and the source of information impact mothers' awareness and utilization of vaccines for their children. Literate mothers demonstrate higher levels of awareness and utilization rates compared to illiterate mothers. Healthcare facilities and the media serve as more effective sources of information, leading to higher awareness and utilization rates compared to relying primarily on family members. Among the interviewed mothers, a majority were housewives, highlighting the importance of targeting educational campaigns towards this group. The study also revealed that a significant proportion of mothers had larger families, emphasizing the need for comprehensive vaccination programs that address the specific challenges faced by such households. Overall, the study underscores the importance of educational initiatives, reliable sources of information, and targeted interventions to improve mothers' knowledge, awareness, and utilization of vaccines. By implementing comprehensive strategies that address these factors, we can enhance vaccination rates and contribute to the overall health and well-being of children. According to this study, it is recommended to implement targeted educational programs to enhance maternal literacy and awareness of vaccination's benefits, with a focus on illiterate mothers. Strengthen healthcare facilities to ensure they serve as reliable sources of information for mothers. It is also recommended to utilize media campaigns to

disseminate accurate and accessible information about vaccines. Encourage family involvement and open discussions to address concerns and misconceptions about vaccination. Continuously monitor and evaluate interventions to make necessary adjustments and improvements based on community needs.

**Abbreviations**

WHO: World Health Organization; VPDs: Vaccine-Preventable Diseases; UNICEF: United Nations International Children's Emergency Fund

**Conflicts Of Interest:** "The author(s) declare(s) that there are no conflicts of interest regarding the publication of this paper."

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