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## **Barriers towards the children immunization at population level in Sheikh Maltoon Town, Mardan, KP**

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**Abstract**---A vaccine is a material that is generated from the illness's causative agent, its products, or a synthetic alternative and is treated to behave as an antigen without actually causing the disease. It is used to promote the formation of antibodies and confer protection against one or more diseases. Objectives: Our objectives were: 1) To determine the different barriers towards children immunization, 2) To determine the different countermeasures against these barriers. Methodology: The study was cross-sectional in nature and took place in Sheikh Maltoon Town, Mardan, Pakistan. Non-probability, convenient sampling was utilized, and 125 participants overall, all of whom were over the age of 18, participated. They were all long-term inhabitants of Sheikh Maltoon Town in Mardan, KPK. Active interaction (interviews) and questionnaires were both used to get the data. IBM SPSS 22 was used to capture and evaluate the data. Results: According to statistics, 119 (95.2%) of the 125 people knew about vaccines and vaccinations, while just 6 (4.8%) had no notion

whatsoever. The data gathered showed the many obstacles to immunizing youngsters. Out of 125 participants, 21 (or 16.8%) encountered the memory bias barrier (it was difficult to memorize the vaccine schedule), 19 (15.2%) encountered the follow-up barrier, 8 (or 6.4%) encountered the lack of availability barrier, 4 (or 3.2%) encountered the cost of the vaccine barrier, 3, and 10 (or 8%) encountered other non-specific barriers, while 30 (or 24%) encountered no barrier at all during vaccination. Conclusion: Our survey has revealed that, in general, attitudes regarding childhood immunization are generally positive and upbeat, with a resounding majority of people feeling that immunizations are highly beneficial at preventing illnesses. The main challenges parents have while immunizing their children are the difficult-to-remember vaccination schedule and the several doses of vaccine, which are known to be bothersome and difficult to administer. As a result, many parents choose not to immunize their children. And only a small number of them had difficulty finding vaccines or nearby sources to vaccinate their kids.

**Keywords**---vaccine, immunization, children.

## **Introduction**

A biological preparation known as a vaccine offers active acquired protection to a specific illness. The process of administering vaccinations is known as vaccination. Variolae vaccinae (smallpox of the cow), a name coined by Edward Jenner to describe cowpox, is where the terms vaccine and vaccination come from. A vaccination often comprises an agent that resembles a disease-causing bacterium and is manufactured from the pathogen's toxins, one of its surface proteins, or weaker or deceased versions of the germ. The agent prompts the body's immune system to identify the harm the agent poses, eliminate it, and also to detect any other creature it may come into contact with in the future. Vaccines can be used therapeutically or prophylactically to treat cancer, such as the HPV vaccination.

The most effective way to stop infectious illnesses is through vaccination. Smallpox has mostly been eradicated thanks to this immunization, which has also helped to limit the spread of illnesses including polio, measles, and tetanus. Influenza vaccination, HPV vaccine, and chicken pox vaccine all have a history of being successful. Despite this, there are restrictions on their applicability. Depending on the vaccination type and the relevant environmental factors and situations, these restrictions might be both internal and external.

The two types of external constraints are the ones at the population level and the ones at the supplier (government) level. The restrictions at the population level might range from vaccine costs to vaccination schedules. The two types of external constraints are the ones at the population level and the ones at the supplier (government) level. The restrictions at the population level might range from vaccine costs to vaccination schedules.

## Methodology

The study was cross-sectional in nature and took place in Sheikh Maltoon Town, Mardan, Pakistan from January, 2020 to March 2020. Non-probability, convenient sampling was utilized, and 125 participants overall, all of whom were over the age of 18, participated.

### **Inclusion criteria:**

- Permanent residents of Shiekh Maltoon, Mardan, Kpk.
- Adult's whose age was of equal or more than 18 years can be representative of his family.

### **Exclusion criteria:**

- Residents living outside of the setting.
- Hostilities of any institute living in the area.

Data was collected through a properly designed questionnaire containing questions which fully covered the objectives. The questionnaire was filled by participants themselves and by the investigators after conducting a short interactive section with them. Data was entered and analyzed through IBM SPSS 22. The data of qualitative variables is represented through frequencies, percentages and bar and pie charts. *The* Informed consent was taken from the participants and identity was kept confidential. The data was collected and analyzed only for research purposes.

## Results

We have collected data from 125 inhabitants of sheikh maltoon town, Mardan. Out of 125 participants 103(82.4%) were male while 22(17.6%) were females. The table 1 is shown as; The pie chart representation is also shown in which male section is represented by blue while female by green.

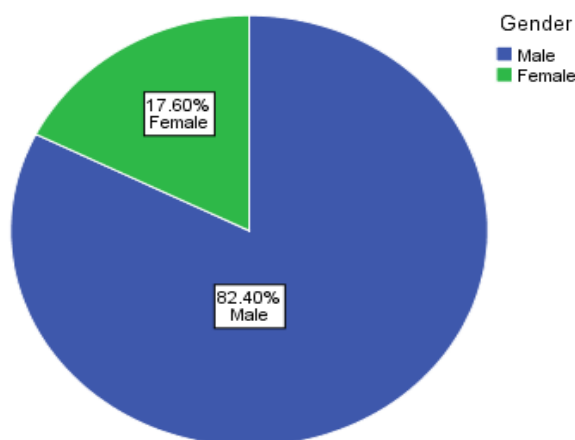


Figure 1. Gender

Out of 125 participants 119(95.2%) knew about vaccine while 6 (4.8%) had no idea about vaccine. The data is represented by the below given table and pie chart.

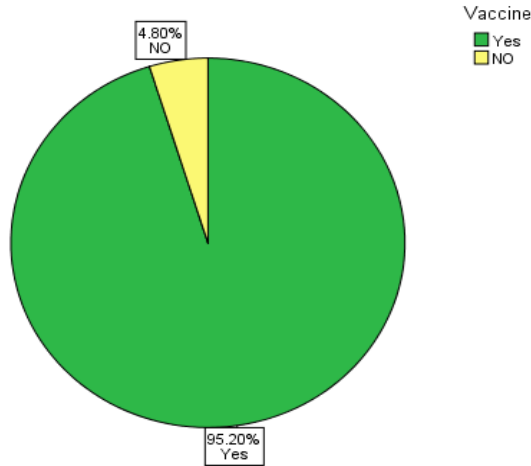


Figure 2. Vaccination awareness

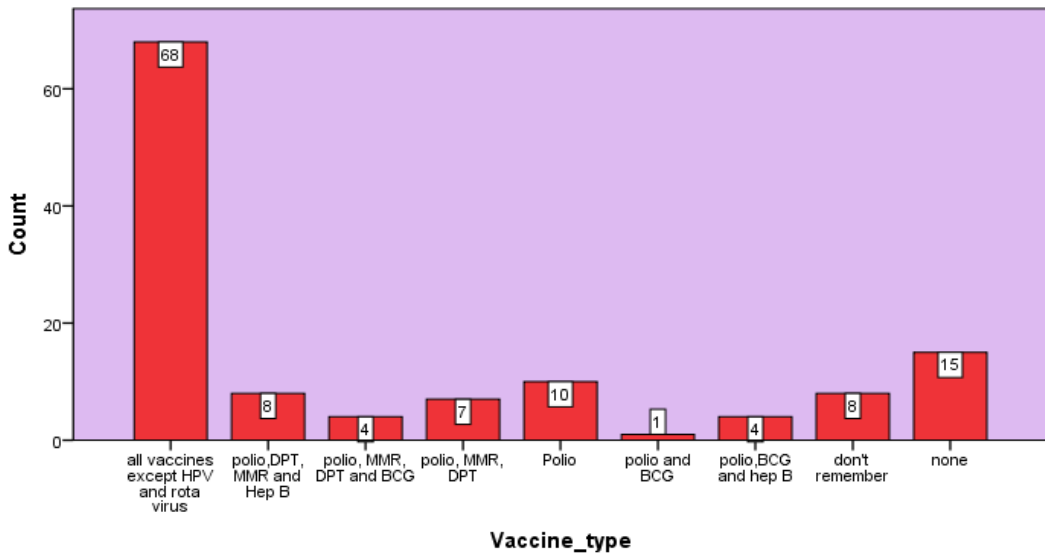


Figure 3. Different types of vaccines

**Awareness and vaccination regarding HPV and Rota virus**

Out of 125 people 21(16.8%) people were aware of HPV vaccine and Rota virus vaccine but not vaccinated against it while 104 (83.2%) were completely unaware and also not vaccinated against it. The data is shown in Pie chart in percentages;

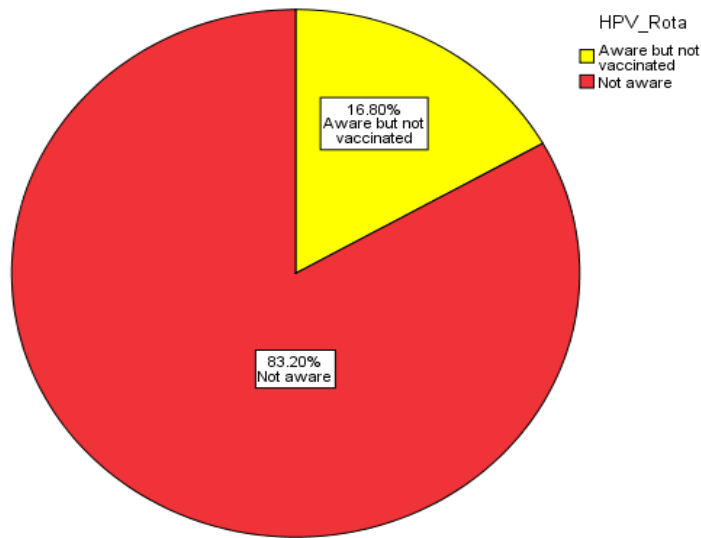


Figure 4. HPV and Rota virus vaccine distribution in percentage

**Side effects**

Out of 125 participants 89(71.2%) says that vaccine has no side effects, 7(5.6%) says vaccine causes itching or rash, 10(8%) says vaccine causes non-specific side effects while 9 (7.2%) says that vaccine causes both itching/ rash and other non-specific side effects. The other intermediate combination is shown in the bar chart given below;

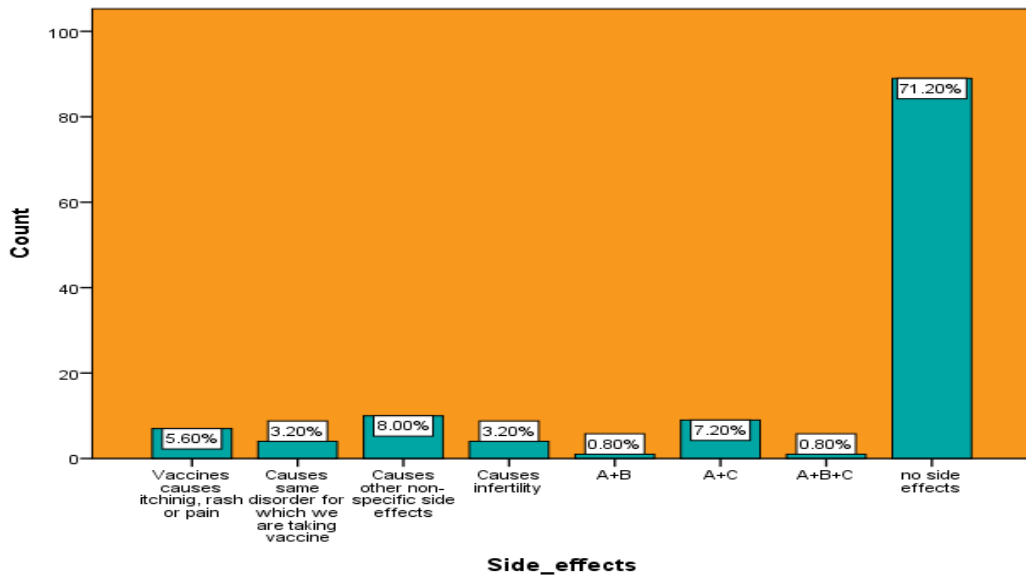


Figure 5. Distribution regarding side effects caused by vaccine

### **Barriers towards vaccination**

Out of 125 participants, 21(16.8%) faced the barrier of memory bias (hard to memorize the vaccine schedule), 19 (15.2%) faced the barrier of follow up, 8 (6.4%) faced the barrier of non-availability, 4(3.2%) faced the barrier of no vaccine camps, 3(2.4%) faced the barrier of cost of vaccine, 10 (8%) faced other non-specific barriers while 30(24%) faced no barrier during vaccination. The multiple responds by participants are shown in the table given below.

### **Discussion**

The saying "prevention is better than cure" is an ancient one, and for a rising nation like ours, it is not only better but also more economical. Unfortunately, vaccinations are not widely used in our society, where they are the primary method of disease prevention for several prevalent ailments. Our study attempted to uncover the many obstacles that the inhabitants in Sheikh Maltoon Town, Mardan, KP, faced when undergoing child vaccination. Unlike the studies by Qidwa W et al., which collected data from family practice patients (1), and Shafiq Y et al., which collected data only from women of childbearing age (3), our study's data was collected from the general population of Sheikh Maltoon town.

In comparison to the research study of Amna A et.al, where 70.6% of the participants were female and only 29.4% were male (8), 103 (82.4%) of the 125 participants in our study were men. In contrast to a study conducted by Khowaja A et al. that revealed 41% of those surveyed (mostly from low-income families) had never heard of even the polio vaccine despite the numerous government-led polio campaigns, 95.2% of our participants (mostly from well-off socioeconomic backgrounds) responded positively when asked what vaccine was (9).

In contrast to the findings of the research study conducted by Kennedy A et.al, which reported that 32% of parents expressed concern about vaccines causing fever in their children and 30% were concerned that vaccines may result in learning disabilities like autism, 89% of respondents said that vaccines did not cause any side effects.

The results of our study identified unique barriers towards children immunization. Out of 125 participants that participated in the study, 21 (or 16.8%) encountered the memory bias barrier (it was difficult to memorize the vaccine schedule), 19 (15.2%) encountered the follow-up barrier, 8 (or 6.4%) encountered the availability barrier, 4 (or 3.2%) encountered the no-vaccine camps barrier, 3 (or 2.4%), encountered the cost of the vaccine, and 10 (or 8%) encountered other non-specific barriers, while 30 (or 24%) encountered no barrier at all during vaccination.

Our study is significant since it is the first of its sort in the area and throughout District Mardan. There hasn't been any research on the subject done in the District of Mardan, or if there has, it isn't online. We organized brief interactive sessions with each participant throughout the data collecting process to raise awareness of the value of vaccination programs for kids. Each participant was informed that thanks to vaccines, measles, diphtheria, pertussis, and other

communicable diseases are now less common. Additionally, polio has been eradicated worldwide with the exception of three countries, namely Pakistan, Afghanistan, and Nigeria, primarily due to parents' poor vaccination compliance. In our environment of Sheikh Maltoon town, a luxury suburb of Mardan with a predominately educated population, the attitude of people toward childhood vaccination is overwhelming favorable and admiring. This also suggests a potential remedy, namely that raising people's level of living generally and educating the populace can boost immunization rates.

The number of participants in our research study was limited to 125 due to limited resources and its brief duration (although this number may have been higher). Our research was limited to Sheikh Maltoon Town due to a lack of funding and transportation; alternatively, we would have preferred to compare the population of Sheikh Maltoon Town with any rural region in district Mardan. One out of every twenty respondents who were requested to complete the questionnaire declined. These individuals' allegedly unfavorable opinions have not been reflected in the outcomes.

Since this is the first study of its sort on the subject to be conducted in District Mardan, more in-depth research—at the undergraduate and graduate levels—is necessary. Separate studies on each vaccination as well as comparison studies between urban and rural populations would be very welcomed and provide more pertinent data.

### **Conclusion**

It is concluded from our study that the overall attitude of the people toward children immunization is very optimistic and encouraging, with overwhelming majority believing in the effectiveness of vaccination in the prevention of diseases. Among the different barriers that were highlighted in the study, memory bias and difficulty in following different vaccine schedules were the main hurdles faced by most parents. The way modern world is progressing, everyone is quite busy with their lives, especially for parents who are both working, it is very easy to forget the vaccine schedules and to do proper follow up. This barrier shows us how modernization has reduced previous barriers but caused new barriers to emerge. In order to tackle this barrier, proper vaccine notification channels should be introduced both physical and online system, which notifies the parent on proper time and thus eliminating the memory bias. In order to remove follow up bias, in which most parents find frequent appointments annoying, Developing of new vaccine should be encouraged which only requires a single dose thus eliminating multiple doses or follow ups. Other barriers such as unavailability or lack of resources can easily be removed by increasing supplies and hosting vaccine camps in remote areas. Further detail studies needs to be done regarding this to further explore different methods which can be introduced to the termination of follow up and memory bias and different researches needs to be done on development of advance one dose vaccinations.

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