

**TO ASSESS MOTHER'S KNOWLEDGE, ATTITUDE &
PRACTICE TOWARDS ROUTINE VACCINATION OF
THEIR WARD IN MOTHERHOOD HOSPITAL, NAVI
MUMBAI.**

Dissertation submitted to



The IIHMR University, Jaipur

For the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Shefali Shivaji Sakpal

(IIHMR-U/01/2020-22/1195)

Under the Supervision and Guidance of

Dr. Kanika Jindal

(Assistant Professor)

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DECLARATION

I hereby declare that this dissertation **“To Assess mother’s knowledge, attitude & practice towards routine vaccination of their ward in Motherhood Hospital, Navi Mumbai”** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Name of Student

CERTIFICATE

This is to certify that dissertation titled To Assess mother's knowledge, attitude & practice towards routine vaccination of their ward in Motherhood Hospital, Navi Mumbai is a record of the research work undertaken by Shefali Sakpal in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide

School Dean

IIHMR University, Jaipur
Jaipur

IIHMR University,

Date:

Date:

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Before I begin this report, I want to respectfully thank all the honourable persons who have assisted me in my endeavour. I would not have advanced with the report without their active guidance, assistance, cooperation, and encouragement. It's an honour to complete a terrific internship at one of the renowned Cooperate Hospitals. I had several opportunities for professional development and access to a variety of knowledge during my internship at **Motherhood Hospital (Rhea Healthcare Pvt Ltd)**. I'm grateful for this opportunity and the chance to speak with so many intelligent people that supported me during my internship.

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I want to express my gratitude to **Dr. P.R. Sodani, president of IIHMR University in Jaipur**, for providing me with the chance to complete my internship. I now like to express my gratitude to **Dr. Kanika Jindal**, my mentor at IIHMR University, for her superb cooperation, priceless supervision, and guidance. She worked diligently and kindly to produce this report.

Additionally, I would want to express my sincere gratitude to the Placement Cell at my prestigious university for helping me navigate the internship application process and regularly delivering internship instructions.

In terms of my professional development, this opportunity is a tremendous advancement. In order to reach my job goals, I will work to use my newly gained skills and information as effectively as possible. I will also keep developing personally.

ABBREVIATION

S.no.	Acronyms	Full form
1.	EPI	Expanded Programme on Immunization
2.	UIP	Universal Immunization Programme
3.	WHO	World Health Organization
4.	DPT	Diphtheria-Pertussis-Tetanus
5.	OPV	Oral Polio Vaccine
6.	BCG	Bacillus Chalmette-Guerin
7.	NFHS -3	National Family Health Survey
8.	DLHS -3	District Level Household & Facility Survey
9.	UPD	Uniparental Disomy
10.	KAP	Knowledge Attitude Practice
11.	IMR	Infant Mortality Rate
12.	EKOS	Ekosonic Endovascular System
13.	IEC	Importer Exporter Code
14.	ANC	Antenatal Care
15.	PNC	Post Natal Care
16.	SNDs	Smart Network Data Service

ABSTRACT

Introduction and objective:

More than one in five worldwide cases of under-five child mortality take place in India. More than half of these fatalities are caused by infections like pneumonia, diarrhoea, and sepsis, all of which can be treated and prevented with immunisation. Every year, hundreds of lives would be saved if all kids received their vaccines. Vaccinations are the most economical public health intervention to prevent disease and mortality since unvaccinated children have a three to six times higher chance of passing away before turning five. The immunisation programme has reduced the number of mortality among children under the age of five from 3.3 million per year to 1.3 million per year, or 17,000 per day.

This study investigated the opinions and viewpoints of parents towards paediatric vaccinations. In light of this, the purpose of this dissertation was to comprehend the mechanisms, such as parenting techniques, the level of detail and accessibility of vaccine information, as well as cultural perspectives, which could affect how mothers feel regarding vaccination acceptance and vaccination policy, as well as vaccines overall.

Methodology:

This study was carried out in Motherhood Hospital of Kharghar, Navi Mumbai. For the study, a descriptive research design with a quantitative research approach was modified. Based on inclusion and exclusion criteria for the data collection, 100 mothers of children younger than one year old were selected using a simple random sample technique. To ensure the authenticity of the instruments' content, it was presented to hospital staff members. While they were being administered, the structured knowledge questionnaire and attitude scale responses from the participants were recorded in the instrument. Five mothers were spoken with daily. The average interview time with each subject was 20 minutes.

Results:

The correlations between the knowledge and attitude scores of mothers of infants

under 1 year olds about immunisation are 0.9214, demonstrating a favourable strong positive relation between the knowledge and attitude of mothers. The connection between attitude and practise is also positive, at 0.3232. Also, there is a positive association between knowledge and practise of 0.3524.

Conclusion:

The mothers had limited knowledge of EPI diseases and vaccination schedules. The immunisation status of a child was determined by the mother's education level and the location of birth. Lack of a health facility, distance to vaccination centre, lack of vaccinators, and unavailability of vaccines were among the obstacles encountered in obtaining complete vaccination. The primary source of vaccination information was healthcare providers. Healthcare providers must play a more active role in educating mothers about EPI diseases and schedules.

As a result, health care professionals could use the data from this study to help them create best practises for how they instruct and interact with parents. Parents desire direct and honest engagement with the medical professionals regarding any potential negative effects of vaccinations. This might cause parents' opinions of children vaccinations to change.

INTRODUCTION

India is the country where worldwide more than one in five mortality of children under five occur. Infections including pneumonia, diarrhoea, and sepsis that can be prevented by vaccination and treated account for more than half of these deaths. Every year, thousands of lives would be saved if all kids received vaccinations.

"India's infant mortality rate is 39, which suggests that an estimated 9.9 lakh babies die within one year of birth, mostly from preventable causes," claims Union Health Minister JP Nadda. This needs to alter. These infants need to be spared. In an effort to reduce its high child mortality rate, India has committed to offering free immunizations against 10 deadly diseases to 27 million children over more than 9 million immunisation programs each year. India's internationally acclaimed universal immunisation programme now includes four new vaccinations (UIP).

The Expanded Program of Immunization (EPI), which the World Health Organization (WHO) formally introduced in May 1974, aims to protect all children worldwide against six diseases that can be prevented by vaccination by the year 2000. The Universal Immunization Program (UIP) replaced the earlier designation, EPI, which was introduced in India in January 1978. (UIP). Since 1985, UIP has successfully stopped several deaths brought on by the six paediatric illnesses. The UIP was implemented in India with the intention of obtaining at least 85% coverage of infant primary immunisation by 1990, which entails three doses of DPT, OPV, and Bacillus Calmette-Guérin (BCG), as well as one dose of measles.

Vaccinations are the most economical public health intervention to prevent disease and mortality since unvaccinated children have a three to six times higher chance of passing away before turning five. The immunisation programme has reduced the number of mortality among children under the age of five from 3.3 million per year to 1.3 million per year, or 17,000 per day. The solution is crystal clear despite the gaps. With 89 lakh children not receiving all of their recommended vaccines and 17 lakh not receiving any at all, India has the highest percentage of unvaccinated children in the world. The DPT or pentavalent vaccination, which offers protection against diphtheria, tetanus, whooping cough, hepatitis B, and haemophilus influenza type b, was only administered to children in just 65% of cases as of 2014.

Only 44% of Indian children aged one to two years old have got the essentials, as per the National Family Health Survey (NFHS-3). According to Maharashtra's rural DLHS-3 (2007–2008), 67.8% of people were fully immunised, 1.2 percent were not, and the state rates were 69.1% and 1.1, respectively. According to NFHS-3 data, 58.8% of children under the age of 12 and 23 months in Maharashtra had received all of their recommended vaccinations (BCG, measles, and three doses of polio/DPT), compared to 49.8% of those in rural Maharashtra.

The information, attitude, and practises of parents towards immunisation are the most significant variables that may affect their decisions. In order to increase immunisation rates and participation, parental decisions concerning immunisation are crucial. Their participation, in turn, results in children receiving all recommended vaccinations, reducing childhood VPDs and immunisation mistakes.

In order to gather data on what is known, believed, and practised in regard to a specific issue, knowledge, attitude, and practise (KAP) studies are typical of a specific community. The most often utilised research tools in studies of health-seeking behaviour are knowledge, attitude, and practise. In order to determine how well patients' knowledge aligns with biomedical concepts, knowledge is typically examined. The causes, symptoms, transmission, treatments, and management of the disease or infectious condition under examination are among the topics included in the knowledge evaluation questions. A trained inclination to think, feels, and act in a specific way toward a specific object or class of objects is known as an attitude. The utilisation of preventative measures or other healthcare choices is typically a practise in KAP surveys. In some circumstances, it allows for remarks regarding actual practises in addition to revealing details about people's actions or what they would know to do in a hypothetical situation. KAP measurement is therefore essential to stopping the spread of illness.

1.1. Purpose of this study –

The goal of this study is to determine why so many mothers choose not to vaccinate their kids. Given that the lack of vaccination resulted in the deaths of 2.4 million individuals in India in 2016 (IMR), immunisation is an incredibly cost-effective method of reducing IMR. However, it is still low in India, where there are the most unvaccinated children in the world and the second-largest population of kids who

haven't received a measles vaccination after Nigeria. Millions of infants worldwide have benefited from vaccinations by avoiding illnesses like pneumonia, polio, diarrhoea, and measles. The two most frequent preventable causes of death in children are pneumonia, which stands for 12.9% of all child fatalities, and diarrhoea, which accounts for 8.9% of all child fatalities. According to Livemint, the rotavirus vaccination, which protects against diarrhoea, has been rolled out across the country. According to a World Health Organization monitoring study, current coverage is 73 % in 41% of the target population (WHO).

According to IndiaSpend, only six states provide the pneumococcal conjugate vaccine, which protects against pneumonia, in the public sector. According to the WHO, vaccination coverage is currently at 44 % in 13 % of the target population.

This study investigated the opinions and viewpoints of mothers towards infant vaccinations. In light of this, the purpose of this dissertation was to comprehend the mechanisms, such as parenting techniques, the level of detail and accessibility of vaccine information, as well as cultural perspectives, which could affect how mothers feel regarding vaccination acceptance and vaccination policy, as well as vaccines overall.

1.2. Aim of the project –

This study was conducted at the Motherhood Hospital in Kharghar with the intention of assessing mothers' knowledge, attitudes, and practises regarding immunisation around the first year of a child's life.

1.3. Significance of the study –

A relatively recent term, "vaccine hesitancy," has been used in research to characterise people who choose to postpone or avoid immunizations even when they are easily accessible or who have reservations about vaccinations. Pharmacists and other healthcare providers must comprehend the reasons why parents are reluctant or unwilling to vaccinate their children because vaccines are essential in avoiding infections in children. Each state has rules in place that specify which vaccinations are required for children before they may enroll in school, despite the fact that there are no federal laws governing the administration of vaccines.

Numerous research have looked into the factors that influence parents' decisions to withhold, postpone, or be cautious about immunising their kids. In one of these studies, 77% of the parents surveyed said they had reservations about one or more kid immunizations. Parents give many different reasons, but they can be divided into four broad groups. These include requests for further information from healthcare professionals for a variety of reasons, including religious, philosophical, or personal grounds. The goal of this article is to equip healthcare professional's knowledge of the most often cited objections to vaccinations for children. This will make it easier for medical staff to give patients' families the information and understanding they need to make wise vaccination decisions.

1.4. Objectives of the project –

- To assess the immunisation knowledge, attitudes, and behaviours of mothers having children under age of 1 year in Motherhood Hospital (Kharghar, Navi Mumbai).
- Analyse the association between the selected variables and the mothers of infants under the age of 1 year on awareness and attitude toward immunisation.
- To determine the association between immunisation knowledge, attitudes and practices among mothers of children under the age of 1.

REVIEW OF LITERATURE

S.no.	Author name	Year	Title	Salient features
1.	Babita Susan Kuruvilla, Vinu Cherian, Ann Mary Thomas, Brilly M. Rose, Alexander John	Year 2021	Perceptions of mothers in Kunnukara Panchayat, North Paravur, Ernakulam, Kerala, towards childhood immunisation.	The purpose of the study was to ascertain how mothers of children between the ages of 1 and 5 in the Paravur taluk of the Ernakulam district felt about immunizations. Maternal participants in this cross-sectional study ranged in age from 1 to 5 years. Three wards were chosen using a simple random selection procedure. Health professionals were the main source of information on vaccinations (80.3 %). 72 percent of moms were aware that OPV prevents polio, and 53,6 % knew how frequently they had given their kids polio shots. Mothers who agreed that immunizations prevent sickness in 92 %. 100% of the time, mothers have immunised their kids. 92.3 % believed vaccinations to be 95.2 % effective. The link between (child's female gender v/s immunisation practices) and (perceptions of vaccination v/s immunisation practise) was statistically significant.
2.	C. Vasantha Kalyani	December 2018	Knowledge, attitudes, and practises of mothers with	The current study found that 45 (90 %) of mothers had a favourable attitude toward immunisation, while only 5 (ten %) had an unfavourable

			children under the age of five regarding immunisation in a selected community in Rishikesh, Uttarakhand	attitude. This study also discovered a significant relationship between the factors (knowledge and attitude). On the contrary, the majority of mothers (44 %) had poor immunisation practises for their children. Similarly, Nisar N et al concluded that mothers' vaccination knowledge was inadequate, with a strong positive attitude but limited practises.
3.	Dr. Bhupeshwar i Patel Gour	April 2018	A cross-sectional study in Central India looked at parents' knowledge and awareness of the universal immunisation programme and optional vaccines.	There were many misconceptions and misunderstandings about vaccine efficacy and duration of protection. With the exception of fever, redness, and pain at the injection site, respondents were unaware of the potential side effects of vaccines. Seizures, while uncommon, are a serious side effect that only 3% of parents are aware of. The EKOS research associates obtained similar results. 30% of the parents in our study had concerns about immunisation safety, which was similar to the new vaccinations of infants in practise online survey, where 70 % of parents were confident in the safety of routinely recommended vaccines.
4.	P. R. Thirumalai Kumar, M. Kavinprasa	October 2018	A study was conducted to assess parents' knowledge and	150 parents in all agreed to participate in this study. 90 % think that giving their kids vaccines as children is good for them. About 92

	d		attitudes toward childhood immunisation.	% agree that immunisation is vital and safe, while 34.7% are dubious. Following the immunisation schedule is crucial (90 % parents have agreed and 6.7 % not sure). Following vaccination, children may acquire the same sickness (46.7 % agreed and 34.7 % not sure). 73 % are aware of the benefits of routine immunisation against infectious diseases and their complications (90% agreed, whereas 8 % were unaware), as well as the fact that the first dose of immunisation is administered at birth (86 % agreed and 9.3 % did not know). According to the results of the current survey, there is a substantial correlation between parents' educational attainment and their understanding of childhood immunisation. Undoubtedly, parents who have more knowledge are better able to understand instructional messages. This might be explained by changes in the health care offered or by inequalities in educational attainment.
5.	A.A., F.N.A., R.A.	July 2021	Assessment of Saudi Arabian Mothers' Knowledge, Attitudes, and Behaviors	This study's objective was to evaluate Saudi Arabian mothers' vaccination knowledge, attitudes, and practises over the first five years of their children's lives. 262 questionnaires were filled out by

			Regarding Childhood Vaccination During the First Five Years of Life.	Saudi mothers with kids under the age of five in a cross-sectional, descriptive study that used convenience sampling. The bulk of participants (57%) were between the ages of 25 and 31; 61%) had bachelor's degrees; and 60.3% had kids under the age of 5 years. Out of a possible 2893 points, the knowledge score was 86 % (2492 out of 2893), the attitude score was 89.1 % (973 out of 1052), and the practise score was 80.5 % (1059 out of 1315).
6.	Sandeep S. Hedao, Swati R. Deshpande, Vijay L. Badge	2018	Determinants that affect parents of children who live in an urban slum in a major city's awareness of immunisation.	It is a one-year cross-sectional study carried out in a slum neighbourhood in Malad, Mumbai. In the research region, parents of children aged 12 to 24 months underwent interviews using a semi-structured questionnaire that has undergone pilot study validation. 97 % said they had heard about vaccinations. Only 2.8% of people didn't know how important immunizations are. 30.5 % correctly identified immunisation as being done to protect kids from sickness. Nearly 65, 2% of them had no idea that vaccines were available through the national immunisation programme. Fever was the most typical side effect mentioned by responders (72.3%), then swelling (38.3 %).

				Lack of information from healthcare practitioners was the second most common cause of lack of awareness, followed by ignorance about immunizations (31.0 %) (24.1%). Urban slum dwellers in Mumbai know virtually little about immunisation. IEC immunisation information should be visible at immunisation clinic waiting areas and other key sites all across the neighbourhood. It is necessary to provide health workers with additional training or capacity building in order to improve their attitudes toward patients and to enhance their competence to provide immunisation advice.
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MATERIALS AND METHOD

3.1. Sample size –

This study was carried out in Motherhood Hospital of Kharghar, Navi Mumbai. **For the study, a descriptive research design combining with a quantitative research methodology was modified for the investigation. Depending on inclusion and exclusion criteria for the data collection, 100 mothers of hospitalised infants under the age of one were selected.** 100 mothers with children under 1 year were interviewed using structured procedures to gather data.

While they were being administered, the centralized knowledge questionnaire, attitude and practice scale responses from the participants were recorded in the instrument. Five mothers were spoken with daily. The average interview time with each subject was 20 minutes.

3.2. Sampling technique –

In order to gain a deeper understanding of the study's main question, quantitative sampling works to enlist individuals from a population. **For this quantitative investigation, a simple random technique was used.** A sample judgement framework was implied. Age, gender, place of residence, and ethnicity were among the factors included.

3.3. Study instruments –

Quantitative data were collected consistently with the right approaches. The accuracy, validity, and reliability of research findings were improved by using adequate data collection methods. There was no use of legal or historical materials as secondary sources in this investigation. However, the required quantitative data was gathered through individual interviews. **These conversations involved the use of a questionnaire design that covered a variety of subjects about vaccination, including attitudes, knowledge, cultural beliefs, and philosophical ideas.** Both close ended and open-ended survey questions were asked in the interview to get the clear response.

The questionnaire, which was broken down into five main themes, was largely adapted from earlier research with some alterations based on the particular setting. (1) Demographics, which included questions about the socio-demographic characteristics of the parents, such as their level of education and employment, as well as the demographic characteristics of the kid (age); (2) Information Source; (3) Immunization knowledge; (4) Immunization attitudes; and (5) Immunization behaviour's.

The knowledge levels of the participants were evaluated using five knowledge-related questionnaires. Most of the answers to these queries were "Yes," "No," or "Maybe." A question's accurate answer was worth one point, while an incorrect or "do not know" response was given zero. When it came to baby immunisation, those who performed above average were regarded to have "good knowledge," while those who fared below average were deemed to have "bad knowledge."

The participants' attitudes about baby immunisation were assessed using five items, most of which were graded on a scale of "Yes," "No," and "Maybe." Participants in the study were classified as having a "favourable attitude" if they scored above the median on an attitude measuring item, and as having a "unfavourable attitude" if they scored below the median.

In addition to evaluating the habits of the participants, questions on how frequently they attend the health facility for their infant's immunizations were asked. In particular, they were questioned whether or not the medical staff welcomed them and if they were informed of the type, dosage, and schedule of their immunizations.

These questions had two possible answers: "yes" or "no," which the participants may select. An item's correct response received one point, whereas an incorrect response received zero. When it came to infant immunisation, individuals who scored higher than the average were deemed to have "good practise," while those who scored lower were deemed to have "poor practise."

3.4. INCLUSIVE CRITERIA –

The study included mothers who volunteer to participate and those whose children were residing in the chosen area under the age of one.

3.5. EXCLUSIVE CRITERIA –

- Mothers who suffer from mental illness/ is critically ill.
- Mothers who are voluntarily refusing to participate in the study.

3.6. Operational definitions –

Vaccination - The procedure of giving a vaccine to the body in order to produce immunity against a certain disease.

Immunisation - The procedure of immunising a person against a disease entails giving them a vaccine. In many contexts, this expression is used interchangeably with the phrases immunisation or immunisation.

Immunisation coverage - Immunization coverage is the percentage of one-year-olds who have received three doses of the polio vaccine, one dose of the measles vaccine, and the combination diphtheria, tetanus toxoid, pertussis, and polio vaccine (DTP3).

Fully immunised child - A child is deemed fully immunised if they have gotten all necessary immunizations within the first year of life in accordance with the national immunisation schedule.

Partially immunised child - Until the age of one year, a child was considered to be partially immunised if they had missed any shots administered as part of the national immunisation programme.

Non-immunised child - Non-immunized children were those who had not had any vaccinations up to the age of 12 months or who had only undergone pulse polio vaccination.

3.7. Ethical considerations –

Considering such research raises certain ethical issues. All participants were first made aware of the study's goals, the confidentiality of their responses and personal information, as well as the fact that participation was entirely optional. The participants were also told that the study posed no risk to their safety or wellness and that the results would be used solely for research purposes. To eliminate any prejudice, a fast script was prepared before the interviews to make sure everyone was asked the same questions. Every participant was subjected to a prepared interview with the same set of questions in order to minimise the possibility of bias being introduced. If a participant's response

is unclear during the interview process, the participant should be asked to repeat the statement in order to lower misunderstanding and promote completeness. Participants had the opportunity to affirm or revise their statements, which allowed them to elaborate on their responses and provide more information.

RESULTS

Data Analysis –

Frequency, tables, and graphs were used mostly to convey the analysis' conclusions. The demographic characteristics of the respondents were shown through the use of descriptive statistics. While categorical data were expressed as percentages, continuous variables were presented as mean $\pm$ standard deviation. Ms Excel was used to gather and analyse the data. Finally, the correlation coefficient was used to evaluate the relationship between the research variables.

Section I: Description of Socio demographic factors

Table 1: Frequency and proportion of chosen elements

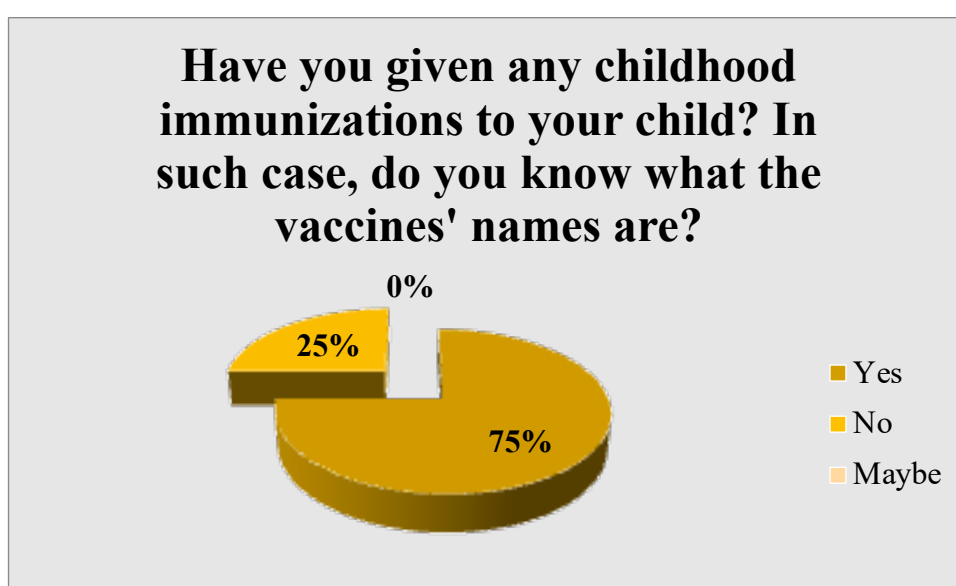
S.no.		Demographic factors	Frequency (%)
	Child's age	1-2 months	1
		2-3 months	52
		3-9 months	52
		9-12 months	6
	Occupation	Working	53
		Non-working	47
	Education status	No formal education	2
		Primary education	0
		Secondary education	19
		College/University	79

There are variations in participants' knowledge, attitudes, and skills in each category. The findings indicated a substantial positive association between respondents' occupation and academic background of 0.7439.

Section II: Description of knowledge of mothers regarding immunization

Disease	No. of participants who named it	Percentage
Polio	80	80%
Measles	10	10%
Diarrhoea	40	40%
Pneumonia	50	50%
Hepatitis B	40	4%
Tuberculosis	20	20%
Typhoid	15	15%
Diphtheria	5	5%
Pertussis	5	5%
Tetanus	3	3%
Rotavirus	2	2%

Despite the fact that none of the mothers could name every EPI condition, the vast majority of mothers supported immunisation and believed that vaccines protect children from infections. Women were the most likely to mention polio (80%). None of the participants were familiar with the entire vaccination schedule for children. Better educated mothers were more likely to follow recommendations and less likely to object to their child receiving immunizations.

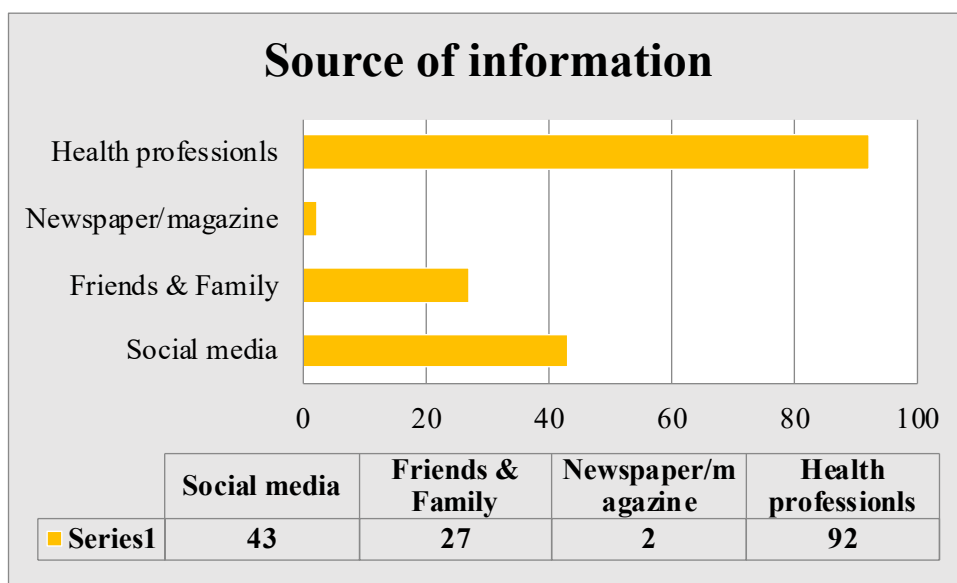


S.no.	Question (Knowledge)	Options	Frequency (N=100)	Percentage
	What is the use of vaccine	Prevent illness	93	93%
		Used as treatment	4	4%
		It's only an injection	3	3%
	When should the first vaccination be administered	From birth	99	99%
		From 6 month	1	1%
	Have you given any childhood immunizations to your child? In such case, do you know what the vaccines' names are?	Yes	75	75%
		No	25	25%
	Do you know what the vaccine's side effects are?	Yes	55	55%
		No	10	10%
		Maybe	35	35%
	Is there any necessity to vaccinate a breastfeeding child?	Yes	93	93%
		Maybe	7	7%

Using a self-created questionnaire, mothers were questioned regarding their knowledge, attitudes, and vaccination behaviours. The purpose of the first question was to evaluate mothers' general understanding of immunisation usage. Only 93 (93%) mothers responded that they were aware of the benefits of vaccination and chose the right response, which was that immunisation

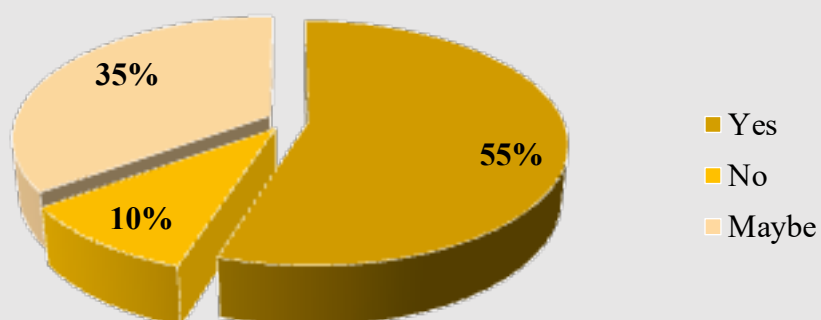
helps prevent illness. To assess mothers knowledge of the recommended timing for the first vaccine, among 100 mothers who all claimed to be aware of the recommended immunisation schedule, 99 (99%) of them answered correctly when asked if vaccinations should begin at delivery. The next query examined the mothers' knowledge of the importance of immunisation and further examined the source of information.

92 (92%) of the mothers who were aware of vaccination reported that their healthcare providers had informed them about it (Doctors and Nurses).



One question about convulsions and skin rash that could happen after vaccination was one that the majority of participants were unable to correctly answer. Although 55 (55%) respondents indicated that they were aware of side effects, they only mentioned swelling and fever, and 10 (10%) respondents indicated that they were not. The remaining 35 (35%) respondents were unclear.

Do you know what the vaccine's side effects are?



The majority of respondents, 93 (93%) to the following question, agreed that vaccinations are safe for nursing infants and are important to administer. Further question asked about whether breastfeeding infant should be vaccinated to which 93% responded positively.

Table 2: Mean, median and standard deviation in terms of knowledge of mothers,

N=100

Test	Mean & SD	Median
Knowledge	33.3 & 38.8	10

Table 3: Frequency and distribution of mothers in terms of knowledge

S.no.	Knowledge	Frequency (%)
1.	Good	83
2.	Average	9.4
3.	Poor	7.6

Using several questions to investigate parents' vaccination knowledge, it was discovered that the participants' score of knowledge was at an average of 83 %. Further, the findings revealed strong positive correlation of 0.9818 between parents' educational level and knowledge.

Variables	Correlation
Knowledge & Education	0.9819

Section III – Description of attitude scale of mothers regarding immunization.

S.no.	Questions (Attitude)	Options	Frequency	Percentage
1.	Do you believe the immunisation schedule is absolutely essential?	Yes	95	95%
		No	0	0%
		Maybe	5	5%
2.	Are vaccinations beneficial for your child?	Yes	97	97%
		No	0	0%
		Maybe	3	3%
3.	Are vaccinations safe for children?	Yes	94	94%
		No	5	5%
		Maybe	1	1%
4.	Do you believe that infants were frequently immunised (took many vaccines)?	Yes	29	29%
		No	55	55%
		Maybe	18	18%

5.	Would you recommend friends and family members to vaccinate their children?	Yes	98	98%
		No	0	0%
		Maybe	2	2%

According to the attitude question, the majority of respondents (95%) believed that following the immunisation schedule is necessary, and (97%) believed that immunizations are good for an infant's health. On the other hand, 94 (94%) of those surveyed thought vaccinations were safe for their kids.

Parents believed that adverse reactions to vaccinations were harmful and that they should only be important for minor illnesses. To which 18 (18%) parents said "Maybe," while about 29 (29%) parents said they thought infants typically received too many immunizations.

To determine whether mothers recommended vaccination to other children or not, the question in the attitude domain asked about mothers' attitudes toward immunisation. In response to this question, 98 mothers (98%) indicated they highly advise immunisation for additional children, whereas 2 respondents (2%) said they oppose immunisation.

Table 4: Median, mean and standard deviation of mothers in terms of attitude N=100

Test	Mean & SD	Median
Attitude	33.3 & 41.6	5

Table 5: Frequency and percentage distribution of mothers in terms of attitude

S.no.	Attitude	Frequency (%)
1.	Highly favourable	87.4
2.	Moderately favourable	5.8
3.	Least favourable	6.8

In order to understand the participants' attitudes, we added four specific questions about the value of vaccination, vaccine safety, and suggestions for friends and families to vaccinate their children. The findings revealed that participants' attitudes toward childhood immunisation were generally positive, with an average score of 87.4 (87.4 %) indicating a positive attitude.

Variables	Correlation
Attitude & Education	0.9754

A further comparison between these studies revealed strong positive correlations of 0.9754 between the educational level of the parents and their attitude.

Section IV – Description of practice scale of mothers regarding immunization.

S.no.	Questions (Practice)	Options	Frequency	Percentage
	Have you ever received health education from your healthcare provider about childhood vaccinations? If so, is the vaccination information detailed and understandable?	Yes	80	80%
		No	20	20%
	Did the healthcare provider inform you of the next immunisation schedule?	Yes	98	98%

		No	2	2%
	Did your child have a reaction to the vaccine?	Yes	82	82%
		No	18	18%
	Will you apply a cold compress to your child if he or she develops swelling as a result of the vaccine?	Yes	72	72%
		No	6	6%
		Maybe	22	22%
	Would you use analgesics (pain relievers) to treat swelling and pain after vaccinations?	Yes	79	79%
		No	4	4%
		Maybe	16	16%
	Overall, how much do you trust your child's doctor?	Completely trust	94	94%
		Partially trust	6	6%
		Do not trust at all	0	0%

The majority of parents in the study's sample were pleased when their children received the immunisation or when they received a greeting from the medical staff. Additionally, 81% of parents received information regarding the type of vaccines their infant had received, compared to 20% who received no information and suggested creating a distinct section for vaccine-related information.

Of the 100 participants, 98% of the parents were told about their child's upcoming immunisation schedule, and 82% of the infants experienced problems following vaccination, but they were not panicked because they had already been told by a healthcare professional what to do next..

If a baby has swelling, 72% of the mothers stated they would apply a cold compress. 22 (22%) mothers chose "Maybe" as their response, while 6 (6%) chose "No." Additionally, 79% of respondents who were asked if they would use analgesics to ease

pain and swelling following vaccines replied "Yes," while the other 16% either expressed confusion and rest 4% said "No".

Table 6: Median, mean and standard deviation of mothers in terms of practice N=100

Test	Mean & SD	Median
Practice	40.0 & 38.3	21

Table 7: Frequency and percentage distribution of mothers in terms of practice

Five additional questions were posed to participants in relation to their practice, including: Had they ever received health education from a healthcare practitioner regarding childhood vaccinations? If so, was the information clear and understandable? Was the next vaccine discussed with them? How did they react if their child had swelling after receiving a vaccination? Were painkillers or analgesics used to treat the swelling? And how much did they trust their child's doctor? The findings revealed that participants' behaviour toward childhood immunisation had an average score of 84.2 (84.2%), which was considered to be good behaviour.

S.no.	Practice	Frequency (%)
1.	Good	84.2
2.	Average	7.3
3.	Poor	8.5

Variables	Correlation
Practice & Education	0.9748

Further similarity between these factors revealed strong positive correlations of 0.9748 between the educational level of the parents and their practice.

Table 8: Correlation between the knowledge, attitude and practice in mothers regarding immunization, N=100.

Variables	Correlation coefficient (R)
Knowledge and Attitude	0.9214
Attitude and Practice	0.3232
Knowledge and Practice	0.3524

According to Table 8, there is a substantial positive association between mothers' knowledge and attitude regarding immunisation, indicating a strong positive correlation of 0.9214. On the other hand, Attitude and practice has weak positive correlation of 0.3232 along with Knowledge and practice showing similar weak positive correlation of 0.3524. Highlighting that even though people have positive knowledge about immunization there is a lack of attitude and practice which needs to be improved.

DISCUSSION

In this study, mothers had heard about infant immunisation and 92 % of them had accessibility to information from health professionals, 43 % from social media, 27 % from friends and relatives, and 2 % from newspapers. This resembles a research conducted in Nigeria ([3](#)), Saudi Arabia ([8](#)), and India ([9, 10, 11, 12](#)), where information was primarily obtained from healthcare professionals. This could be as a result of the fact that the majority of parents today deliver their children in a medical setting with skilled birth attendants, that medical professionals play a crucial role during the Antenatal Care and Postnatal Care periods by convincing parents to link their new-born baby to an immunisation unit in order to receive immunisation service, as well as the friendly association between a health care provider and the mothers at primary health care centres, and that these medical facilities also play a crucial role during the ANC and PNC periods.

Knowledge –

The purpose of this research study was to evaluate parents' knowledge, attitudes, and practises regarding childhood vaccination. With an overall accurate rate of 83 %, the respondents' average knowledge score on childhood vaccination was determined to be good. This result is in accordance with the outcomes of two earlier studies carried out in Saudi Arabia ([6](#)) and North East Ethiopia ([5](#)), which validated that mothers have excellent knowledge of childhood immunisation, understand the value of providing their children a full course of immunizations, and understand that immunisation is not harmful.

Further analysis in this study revealed positive correlations between parents' educational level and occupational status and their knowledge. Additionally, it was shown that characteristics influencing parents' good practises in the childhood vaccination program include their degree of education, occupation, knowledge, and attitude toward vaccination. This was unquestionably caused by people with higher levels of education having a better awareness of children's health and being far more able to comprehend educational messaging and vaccination policy. Also, having more knowledge makes it possible to communicate with medical professionals more effectively and reduces the likelihood that one will form false vaccine beliefs.

The results of this study suggest that educated mothers may have more opportunity than illiterate mothers to comprehend vaccination and its benefits, which may lead to a more positive attitude toward baby immunisation than illiterates. In addition, parental attitudes and views are influenced by education level; the greater the education level, the higher the level of acceptance among parents and the more favourable their attitude about vaccination acceptance.

The results of the current study show that even though the majority of the mothers surveyed were unaware of all the EPI diseases, the immunisation rate that was reported was not as low as their knowledge. Similar studies conducted in India also found that the immunisation rate was higher despite the mothers' little understanding of diseases which can be prevented by vaccination. The first and most mentioned by mothers was polio. This is most likely a result of media campaigns and door-to-door SNDs. These can be a chance to inform mothers about additional diseases that can be prevented by vaccination as well.

Although there were almost 83 % of right responses in the knowledge sector, side effects of vaccination, like seizures and skin rash, were particularly poorly understood. Participants might think the shot is fully risk-free and has no adverse effects.

Attitude -

Parents' perceptions of the significance of immunisation in the care of their infant changed as a result of people being more interested in learning about the vaccination and VPDs from healthcare professionals, social media, friends, and neighbours to increase their awareness.

In addition, this study indicated that (87.4%) of parents agreed that infant immunisation was important, which is in accordance with the findings done in Saudi Arabia (80 %) (8) and India (85.4 %) (90%) (18, 13). The discrepancy may be brought about by variations in the socio-demographic traits and/or educational backgrounds of the individuals.

Practice –

The results showed that the majority of parents (84.2%) used appropriate baby immunisation practises, which is similar with research from Jos North (Nigeria) (86.4 %) ([14](#)) and India (90.20%) ([10](#)). The discrepancy may be explained by variations in socio-demographic traits, a lack of awareness, and a negative attitude toward immunisation.

Another finding showed a connection between a child's immunisation status and the place of birth. Compared to babies delivered at home, babies born in hospitals had a higher probability of getting all advised vaccines. Compared to children delivered at home, children born in hospitals had a twice as high likelihood of obtaining all advised immunizations.

There is a need to educate traditional birth attendants and the general public about the importance of vaccinating new-born's. According to our findings, health care providers were the primary drivers of immunisation knowledge. According to studies from India ([20](#)) and Bangladesh ([19](#)), the majority of mothers learned about vaccination from healthcare providers. The role of health-care workers in educating mothers and caregivers about childhood immunisation should be expanded.

Mothers with children under the age of 1 year had a substantial positive association between their knowledge about immunizations and their attitudes toward them, as indicated by the correlation between knowledge and attitude scores of mothers with children under the age of 1 year, which was 0.9214. The weak positive correlation between practise and attitude is 0.3232, while the weak positive correlation between practise and knowledge is 0.3524. Demonstrating that, despite people's good understanding about vaccinations, there is still room for improvement in terms of attitude and practise.

The degree of education, occupation, knowledge, and attitude were found to be the factors most influencing the excellent practise of childhood immunisation in this study. An effective plan that takes these crucial factors into account must be designed in order to improve childhood immunisation practises in India. To maintain the efficacy of routine immunisation programmes during the pandemic, an effective reporting system

and cooperation between all stakeholders, including central and local government, must be optimised.

Because there was limited data on parents' knowledge, attitude, and practise regarding infant immunisation and related factors at the national level, this study may be useful for those stakeholders who wish to carry out improving processes. . The current study's strengths include its community-based design and use of a valid and standardised instrument to assess parents' attitudes toward infant immunisation. This study is cross-sectional; therefore it cannot demonstrate a cause-and-effect connection. Another major drawback of the study is that it excludes children older than 9 to 12 months, who are useful for measuring the immunisation completion rate and overall immunisation coverage.

CONCLUSION

Children's vaccinations save millions of lives each year. Despite the fact that some parents recognise the value of childhood immunisation, many also hold the opinion that these vaccines have adverse effects and that the recommended schedule is excessively demanding for young children. Parents who neglect to vaccinate their child or children are also partly to blame for this failure on account of inadequate outreach workers' and healthcare providers' education.

The mothers had limited knowledge of EPI diseases and vaccination schedules. The immunisation status of a child was determined by the mother's education level and the location of birth. Lack of a health facility, distance to vaccination centre, lack of vaccinators, and unavailability of vaccines were among the obstacles encountered in obtaining complete vaccination. The primary source of vaccination information was healthcare providers. Healthcare providers must play a more active role in educating mothers about EPI diseases and schedules.

As a result, health care professionals could use the data from this study to help them create best practises for how they instruct and interact with parents. Parents desire direct and honest engagement with their medical professionals regarding any potential negative effects of vaccinations. This might cause parents' opinions of children vaccinations to change.

IMPLICATIONS OF RESEARCH –

The provision of vaccinations has the potential to greatly enhance public health. A single unvaccinated person can infect the entire community, including infants and people who already have health issues. This study had the potential to offer suggestions on how to better educate parents about the advantages of vaccination, allay concerns about potential adverse effects, and establish a more open market where panic-inducing misinformation is eliminated. A more transparent sector, in which parents are informed and healthcare professionals work as advocates not only for the particular patient but also for the community as a whole, might significantly reduce the number of kids who do not receive life-saving immunizations.

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ANNEXURES

QUESTIONNAIRE -

CHARACTERISTICS -

Child's age

- **Birth–1 month**
- **1–2 months**
- **2–3 months**
- **3–9 months**
- **9–12 months**

Occupation

- **Working**
- **Non-Working**

Educational status

- **No formal education**
- **Primary education**
- **Secondary education**
- **College/university**

KNOWLEDGE -

What is the use of vaccination

- **Prevent illness**
- **It's only an injection**
- **Used for treatment**

When the first vaccination should be administered

- From birth
- From 6 month
- From 1 year
- From 2 years

Have you given your child any childhood vaccines? If so, do you know what the vaccines are called?

- Yes
- No

Source of information

- Social media
- Friends and relative
- Newspaper/magazine
- Health professional

Do you know about side effects of vaccine

- Yes
- No
- Maybe

Is it necessary to vaccinate a breastfeeding infant?

- Yes
- No
- Maybe

ATTITUDE -

Do you think the immunisation schedule is important?

- Yes
- No

- **Maybe**

Are vaccinations beneficial for your child?

- **Yes**
- **No**
- **Maybe**

Are vaccinations safe for children?

- **Yes**
- **No**
- **Maybe**

Do you think Infants usually took too many vaccines?

- **Yes**
- **No**
- **Maybe**

Would you recommend friends and families to vaccinate their children?

- **Yes**
- **No**
- **Maybe**

PRACTICE -

Have you ever received health education regarding childhood vaccination from your healthcare provider? If so, is the information about vaccination detailed and understandable?

- **Yes**
- **No**

Did the health care worker tell you the next immunisation schedule?

- Yes
- No

Did your infant develop a problem after vaccination?

- Yes
- No

If your child has swelling due to the vaccine, will you apply cold compress?

- Yes
- No
- Maybe

Would you use pain relievers (analgesics) to treat swelling and pain after vaccination?

- Yes
- No
- Maybe

All things considered, how much do you trust your child's doctor?

- Do not trust at all
- Completely trust
- Partially trust