IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Evaluation Of Awareness In Immunization And Its Benefits In Child Bearing Mothers In Konaseema Institute Of Medical Sciences (Kims), Amalapuram

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Abstract Background:

The promotion of health is social as well as individual responsibility. It has been know that five million children were dying each year and another five million were disabled by infec- tious diseases (UNICEF, 2001) ·The growth and development of children is a long term con- tribution of any country as a whole. The key to attain the goal of health for all. The primary health care emphasizes on the preventive principles. One of the most cost effective health interventions is vaccine for all infectious diseases. Immunization is a high priority area in care of infants and children. High immunization rates have almost eliminated many infec- tious diseases which used to decimate sizable of the population for countries. A number of deadly and disabling infectious diseases can be prevented by timely administration of vac- cines. When child is effectively immunized and the right age, most of these disease are ei- ther entirely prevented or at least modified so that child suffering from a mild disease without any disability .

Immunization is one of the most effective, safest and efficient public health interventions. Till date full potential has not been reached in immunization. Thousands of children's die from vaccine preventable diseases each year.

Vaccine have eradicated many diseases but despite these efforts today tens of thousands of people in various countries still die from these diseases.

The expanded program of immunization startedby the WHO in 1974 and has improved coverage for BCG, DPT, polio and measles to about 80% of children in developing countries

Mortality rate may be greater in developing countries because of low resistance of these children against infection. About three million babies in developing countries die during early childhood

Still the people are unaware of the immunization schedule and its importance, the aware- ness on immunization among the mothers of under five years' children. The study play an important role in spreading the awareness on immunization

Objectives:

- Reduce, eliminate, or maintain elimination of cases of vaccine-preventable disease
- Reduce invasive pneumococcal infections
- Achieve and maintain effective vaccination coverage levels for universally recom-mended vaccines among young children
- Increase the percentage of providers who have had vaccination coverage levels among children in their practice population measured within the past year

Materials and methods:

The study has been carried out for 6 months hospital based prospective observational study was carried out at KIMS, AMALAPURAM. The knowledge of the child bearing mother were assessed by means KNOWLEDGE AND ATTITUDE questionnaires baseline and they have been educated by means of structured counselling on their life style modifications and the impact of pharmacist provided patient counselling were assessed by means using KNOWLEDGE AND ATTITUDE questionnaires.

Results:

A total of 100 subjects were enrolled into the study and there were 3 dropouts.
The result revealed that 67 (64.99%) were in the age of 17-27 followed by 26 (25.22%) were in the age of group of 28-38 and 4(3.88%) were in the age group of 39-49 years re- sportively.

The results show the number of women were illiterate 22(21.34%) followed by 5(4.85%), 1(0.97%) , 31 (30.07%), 37(35.89%),1(0.97%) having the education primary, preparatory, secondary, higher, master degree respectively.
The results shows that 25(24.25%)were employed and 72(69.82%) were unemployed.
The results show that 53(51.41%) child bearing mothers having one child,35(33.95%),9(8.73%) having two children and more than two children respectively.

The results revealed that number of child bearing mothers 25(24.25%) belongs to the low- er clases followed by the 71(68.87%) belongs to the middle classes, 1(0.97%) belongs to the high class respectively.
The results revealed that 68(65.98%) of child bearing mothers are from urban area and 29(28.13%) of child bearing mothers are from rural area.
It was assessed as, those mothers who could name at least one vaccine preventable disease were considered as having knowledge and those who couldn't even name a single vaccine were taken as not having any knowledge in any educational status. The educated mothers had some knowledge about vaccine preventable disease 45.8% with no significant differences.

It is obviously noted that more than half of them (54%) were mentioned three items of dis- eases (T.B, Measles

and Hepatitis B) followed by don't know (25%).

It was found that nearly half 46.4% of higher educated mothers gave vaccination at time compared with 50% of illiterate mothers didn't give their children vaccination at time with high statistically differences (p=0.001).

It indicates the majority of not working mothers 84.6% didn't give their infants vaccina- tions at time, with high statistically differences. (p =0.01).

It was found the most often mentioned reason for not vaccine, was family trouble and time of vaccine 100% between higher educated mothers followed by had no time 60%, with no signi:icant differences.

illustrates relations between mother's education and knowledge about Contraindication of vaccinations. It indicates that about 66.7% of higher educated mothers mentioned growth affection followed by 50% disease occurred of secondary educated, with high statistically differences. (p=0.00001).

It noticed that all of illiterate mothers didn't know the hazards, compared with 86.4% of educated mothers mentioned that occurrence of disease with high statistically difference (p =0.008).

It indicates that urban with moderate socioeconomic status had good total knowledge score (83.8%) with statistically difference (P=0.01, p =0.02). while not working mothers and illit- erate had poor total knowledge score (84%, 40% respectively).

Conclusion:

The study result conclude that the study subjects were having poor knowledge. It is inter- esting to note that all the study subjects having the attitude to Immunize their babies however they have poor knowledge in regard to exclusive immunization. Many mothers don’t come regularly for vaccination of their children. As a result they miss the due date of

vaccination. Low literacy level of mothers is a matter of worry. Some of them don’t know about the diseases for which their child is being immunized .Although many mothers don’t know the timings of vaccination.

Key words:

Immunization, knowledge and attitude.

Introduction

Immunization:

Immunization is the process whereby a person is made immune or resistant to an infectious dis- ease, typically by the administration of a vaccine. Vaccines stimulate the body’s own immune system to protect the person against subsequent infection or disease.

Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-ef- fective health investments, with proven strategies that make it accessible to even the most hard- to-reach and vulnerable populations. It has clearly defined target groups; it can be delivered ef- fectively through outreach activities; and vaccination does not require any major lifestyle change.

BENEFITS OF IMMUNIZATION:

Immunization is a way of protecting against serious diseases. Once we have been immunised, our bodies are better able to fight these diseases if we come into contact with them. Immuniza- tion is one of the biggest health successes of the last century. Some diseases that are caused by viruses can't be cured with antibiotics. The only way to control them is by immunization.

With continued immunization programs, such diseases may no longer be a threat.

The development of effective vaccines has led to a huge decrease in childhood deaths.

The World Health Organization (WHO) states: "The 2 public health interventions that have had the greatest impact on the world's health are clean water and vaccines."

Benefits for you:

As children develop they're exposed to many risks, one of these risks being infections. Most of these will cause mild illnesses. However, despite great medical advances, infection can stillcause severe illness, disability and, at times, death.

The benefit of immunization is that your child has the best possible protection against dangerous diseases. This can give you peace of mind.

Benefits for us all:

When your child is immunized they're helping to protect the health of the whole community. When enough people are immunized against an infection, it's more difficult for it to be spread tothose who are not immunized. This is called 'herd immunity' or 'population protection'.

This is important because children with some severe medical conditions and allergies can't havecertain vaccines.

Common Misconceptions about Vaccinations :

Providing patients with the facts is fundamental to eliminating some of the common misconcep- tions regarding vaccinations. According to the CDC, many misconceptions about vaccines exist, which include·

1."Diseases had already begun to disappear before vaccines were introduced, because of better hygiene and sanitation."

2."The majority of individuals who get diseases have been vaccinated."

3.“There are ‘hot lots’ of vaccine that have been associated with more adverse events and deaths than others. Parents should find the numbers of these lo ts and not allow their children to receive vaccines from them.”

4.“Vaccines cause many harmful side effects, illnesses, and even death–not to mention possible long-term effects we don’t even know about.”

5.“Vaccine-preventable diseases have been virtually eliminated from my country, so there is noneed for my child to be vaccinated.”

6.“Giving a child multiple vaccinations for different diseases at the same time increases the riskof harmful side effects and can overload the immune system.”

Routes of administration:

A vaccine administration may be oral, by injection (intramuscular, intradermal, subcutaneous), by puncture, transdermal or intranasal. Several recent clinical trials have aimed to deliver the vaccines via mucosal surfaces to be up-taken by the common mucosal immunity system, thus avoiding the need for injections.

ROLE OF PHARMACIST:

Vaccines prevent an estimated 2.5 million deaths worldwide each year and are amongst the most cost-effective preventive measures against infectious diseases. Despite the effectiveness and availability of vaccines in many parts of the world, vaccination rates and service uptake remains suboptimal among both healthcare providers and the public. Pharmacists as established advo- cates, educators as well as qualified providers of vaccinations have a significant role to play in promoting and supporting the uptake of vaccination. Challenges and barriers to pharmacist vac- cination are multifactorial, which needs effective strategies to address. Overcoming these barriers will increase the role of pharmacists as vaccinators that ultimately increases public access to vac- cination and accurate and reliable information about vaccines.

EVIEW OF LITERATURE:

How does immunization help to eliminate disease?

Immunization is one of the biggest health successes of the last century. Some diseases that are caused by viruses can't be cured with antibiotics. The only way to control them is by immunization.

With continued immunization programs, such diseases may no longer be a threat.There have already been some successful examples of immunization bringing some diseases under control. Both smallpox and polio, which were once common in the UK, are no longer a threat.

The WHO declared smallpox wiped out in December 1979 thanks to a focused effort to immunize against the

disease across the world. It declared Europe free from polio in 2002.

Why immunize?

The development of effective vaccines has led to a huge decrease in childhood deaths.

The World Health Organization (WHO) states: "The 2 public health interventions that have had the greatest impact on the world's health are clean water and vaccines."

MATERNAL BENEFITS

Vaccination plays an important role for the health of mother and the baby. There is a benefit for women to be immunized to reduce their chances of morbidity and mortality from vaccine- preventable diseases. Before administering a vaccine to a pregnant woman, the prenatal health care provider must know the immunogenic material in the vaccine. Live, attenuated virus va ccines, such as the mmr vaccine or the nasally delivered influenza vaccine, are not recommendedin pregnancy. In contrast, vaccines that contain nonviable antigens, virus-like particles, or noninfectious yet immunogenic components of bacteria, such as the tetanus toxoid, reduced diphtheria toxoid and acellular pertussis (tdap) vaccine and the injectable influenza vaccine, are considered safe during pregnancy.

Health care providers and patients should be aware that the reassuring safety data for use of the aforementioned vaccines in pregnancy are compelling, and there is no link to vaccine administration and miscarriage. an added benefit to immunizing during pregnancy is the potential for disease prevention in newborns by way of passive antibody transfer to the fetus. Hence, offering pregnant patients influenza and tdap vaccines is an avenue to protect newborn infants at a critically vulnerable time and before neonates can be vaccinated. patients who decline vaccinations indicated during pregnancy should be offered and given postpartum immunization.

Mechanism of function

Vaccines are a way of artificially activating the immune system to protect against infectious disease. The activation occurs through priming the immune system with an immunogen. stimulating immune responses with an infectious agent is known as immunization. Vaccination includes various ways of administering immunogens.

Most vaccines are administered before a patient has contracted a disease to help increase future protection. However, some vaccines are administered after the patient already has contracted a disease. Vaccines given after exposure to smallpox are reported to offer some protection from disease or may reduce the severity of disease. The first rabies immunization was given by Louis Pasteur to a child after he was bitten by a rabid dog. Since its discovery, the rabies vaccine have been proven effective in preventing rabies in humans when administered several times over 14 days along with rabies immune globulin and wound care. Other examples

include experimental AIDS, cancer and Alzheimer's disease vaccines. Such immunizations aim to trigger an immune response more rapidly and with less harm than natural infection. Most vaccines are given by injection as they are not absorbed reliably through the intestines. Live attenuated polio, rotavirus, some typhoid, and some cholera vaccines are given orally to produce immunity in the bowel. While vaccination provides a lasting effect, it usually takes several weeks to develop.

This differs from passive immunity (the transfer of antibodies, such as in breastfeeding) has immediate effect. A vaccine failure is when an organism contracts a disease in spite of being vaccinated against it. Primary vaccine failure occurs when an organism's immune system does not produce antibodies when first vaccinated. Vaccines can fail when several series are given and fail to produce an immune response. The term "vaccine failure" does not necessarily imply that the vaccine is defective. Most vaccine failures are simply from individual variations in immune response.

Vaccination versus inoculation

The term inoculation is often used interchangeably with vaccination. However, the terms are not synonymous. Dr Byron Plant explains: "Vaccination is the more commonly used term, which actually consists of a 'safe' injection of a sample taken from a cow suffering from cowpox... Inoculation, a practice probably as old as the disease itself, is the injection of the variola virus taken from a pustule or scab of a smallpox sufferer into the superficial layers of the skin, commonly on the upper arm of the subject. Often inoculation was done 'arm-to-arm' or, less effectively, 'scab-to-arm'..." Inoculation oftentimes caused the patient to become infected with smallpox, and in some cases the infection turned into a severe case. Vaccinations began in the 18th century with the work of Edward Jenner and the smallpox vaccine.

Vaccine development and approval

Just like any medication or procedure, no vaccine can be 100% safe or effective for everyone because each person's body can react differently. While minor side effects, such as soreness or low grade fever, are relatively common, serious side effects are very rare and occur in about 1 out of every 100,000 vaccinations and typically involve allergic reactions that can cause hives or difficulty breathing. However, vaccines are the safest they ever have been in history and each vaccine undergoes rigorous clinical trials to ensure their safety and efficacy before FDA approval.] Prior to human testing, vaccines are run through computer algorithms to model how they will interact with the immune system and are tested on cells in a culture. During the next round of testing, researchers study vaccines in animals, including mice, rabbits, guinea pigs, and monkeys. Vaccines that pass each of these stages of testing are then approved by the FDA to start a three-phase series of human testing, advancing to higher phases only if they are deemed safe and effective at the previous phase. The people in these trials participate voluntarily and are required to prove they understand the purpose of the study and the potential

risks. Duringphase I trials, a vaccine is tested in a group of about 20 people with the primary goal of assessingthe vaccine's safety. Phase II trials expand the testing to include 50 to several hundred people. During this stage, the vaccine's safety continues to be evaluated and researchers also gather data on the effectiveness and the ideal dose of the vaccine. Vaccines determined to be safe and efficacious then advance to phase III trials, which focuses on the efficacy of the vaccine in hundreds to thousands of volunteers. This phase can take several years to complete and researchers use this opportunity to compare the vaccinated volunteers to those who have not beenvaccinated to highlight any true reactions to the vaccine that occur. If a vaccine passes all of the phases of testing, the manufacturer can then apply for licensure of the vaccine through the FDA. Before the FDA approves use in the general public, they extensively review the results to the clinical trials, safety tests, purity tests, and manufacturing methods and establish that the manufacturer itself is up to government standards in many other areas. However, safety testing of the vaccines never ends even after FDA approval. The FDA continues to monitor the manufacturing protocols, batch purity, and the manufacturing facility itself. Additionally, most vaccines also undergo phase IV trials, which monitors the safe and efficacy of vaccines in tens ofthousands of people, or more, across many years. This allows for delayed or very rare reactions to be detected and evaluated.

Safety monitoring

CDC Immunization Safety Office initiatives	Government organizations	Non-government organizations
Vaccine Adverse Event Reporting System (VAERS)	Food and Drug Administration (FDA) Center for Biologics Evaluation and Research (CBER)	Immunization Action Coalition (IAC)
Vaccine Safety Datalink (VSD)	Health Resources and Service Administration (HRSA)	Institute for Safe Medication Practices (ISMP)
Clinical Immunization Safety Assessment (CISA) Project	National Institutes of Health [NAH]	
Emergency preparedness for vaccine safety	National Vaccine Program Office (NVPO)	

The administration protocols, efficacy, and adverse events of vaccines are very strictly monitored. Organizations of the federal government, including the CDC and FDA, as well as organizations independent of the government are constantly re-evaluating our vaccine practices. As with all medications, vaccine use is driven by validated data and both the formulations and administration protocols of vaccines are subject to evolve as data continues to be gathered.

Side effects

The Centers for Disease Control and Prevention (CDC) has compiled a list of vaccines and their possible side effects. The risk of side effects varies from one vaccine to the next, but below are examples of side effects and their approximate rate of occurrence with the diphtheria, tetanus, and acellular pertussis (DTaP) vaccine, a common childhood vaccine. Mild side effects (common)

- Mild fever (1 in 4)
- Redness, soreness, swelling at the injection site (1 in 4)
- Fatigue, poor appetite (1 in 10)
- Vomiting (1 in 50)

Moderate side effects (uncommon)

- Seizure (1 in 14,000)
- High fever (over 105 °F) (1 in 16,000)

Severe side effects (rare)

- Serious allergic reaction (1 in 1,000,000)
- Other severe problems including long-term seizure, coma, brain damage have been reported,but are so rare that it is not possible to tell if they are from the vaccine or not.

Society and culture

To eliminate the risk of outbreaks of some diseases, at various times governments and other institutions have employed policies requiring vaccination for all people. For example, an 1853 law required universal vaccination against smallpox in England and Wales, with fines levied on people who did not comply. Common contemporary U.S. vaccination policies require that children receive recommended vaccinations before entering public school. Beginning with early vaccination in the nineteenth century, these policies were resisted by a variety of groups, collectively called anti vaccinationists, who object on scientific, ethical, political, medical safety, religious, and other grounds. Common objections are that vaccinations do not work, that compulsory vaccination constitutes excessive government intervention in personal matters, or that the proposed vaccinations are not sufficiently safe. Many modern vaccination policies allow exemptions for people who have compromised immune systems, allergies to the components used in vaccinations or strongly held objections. In countries with limited financial resources, limited vaccination coverage results in greater morbidity and mortality due to infectious disease. More affluent countries are able to subsidize vaccinations for at-risk groups, resulting inmore comprehensive and effective coverage. In Australia, for example, the Government subsidizes vaccinations for seniors and indigenous Australians.

Public Health Law Research, an independent US based organization, reported in 2009 that there is insufficient evidence to assess the effectiveness of requiring vaccinations as a condition for specified jobs as a means of reducing incidence of specific diseases among particularly vulnerable populations; that there is sufficient evidence

supporting the effectiveness of requiringvaccinations as a condition for attending child care facilities and schools; and that there is strongevidence supporting the effectiveness of standing orders, which allow healthcare workers without prescription authority to administer vaccine as a public health intervention.

GLOBAL TRENDS OF VACCINATION:

The World Health Organization (WHO) estimate that vaccination averts 2 –3 million deaths per year (in all age groups), and up to 1.5 million children die each year due to diseases that could have been prevented by vaccination. They estimate that 29% of deaths of children under five years old in 2013 were vaccine preventable. In other developing parts of the world, they are faced with the challenge of having a decreased availability of resources and vaccinations. Countries such as those in Sub-Saharan Africa cannot afford to provide the full range of childhood vaccinations.

Economics of vaccination

Health is often used as one of the metrics for determining the economic prosperity of a country. This is because healthier individuals are generally better suited to contributing to the economic development of a country than the sick. There are many reasons for this. A person who is vaccinated for influenza, not only protects himself from the risk of influenza, but, simultaneously, prevents himself from infecting those around him. This leads to a healthier society, which allows individuals to be more economically productive. Children are consequently able to attend school more often and have been shown to do better academically. Similarly, adultsare able to work more often, more efficiently, and more effectively. Costs and benefitsOn the whole, vaccinations induce a net benefit to society. Vaccines are often noted for their high returnon investment (ROI) values, especially when considering the long-term effects. Some vaccines have much higher ROI values than others. Studies have shown that the ratios of vaccination benefits to costs can differ substantially—from 27:1 for diphtheria/pertussis, to 13.5:1 for measles, 4.76:1 for varicella, and 0.68–1.1 : 1 for pneumococcal conjugate. Some governments choose to subsidize the costs of vaccines, due to some of the high ROI values attributed to vaccinations. The United States subsidizes over half of all vaccines for children, which costs between $400 and $600 each. Although most children do get vaccinated, the adult population of the USA is still below the recommended immunization levels. Many factors can be attributed to this issue. Many adults who have other health conditions are unable to be safely immunized, whereas others opt not to be immunized for the sake of private financial benefits. Many Americans are underinsured, and, as such, are required to pay for vaccines out-of-pocket. Othersare responsible for paying high deductibles and co-pays. Although vaccinations usually induce long-term economic benefits, many governments struggle to pay the high short-term costs associated with labor and production. Consequently, many countries neglect to provide such services. The Coalition for Epidemic Preparedness Innovations published a study in The

Lancet in 2018 which estimated the costs of developing vaccines for diseases that could escalate into global humanitarian crises. They focused on 11 diseases which cause relatively few deaths at present and primarily strike the poor which have been highlighted as pandemic risks:

1.Crimean congo hemorhhagic fever

2.Chikungunya ebola

3.Lassa fever

4.Marburg virus disease

5.Middle east respiratory syndrome corona virus

6.Nipah virus infecftion

7.Rift valley fever

8.Severe acute respiratory syndrome

9.Severe fever with thrombocytopenia syndrome

10. Zika

.**Reema Mukherjee and Manisha Arora;(2017)** conducted a study on **Awareness and attitudes of mothers towards new vaccines in the childhood vaccination programme in Delhi state: a cross sectional study.** The study was conducted in the immunization clinic of a tertiary care hospital of Delhi. A total sample of 388 mothers was interviewed. The data was analyzed using SPSS ver 20. Only 18.3% (95% CI, 14.76-22.46) of the participants were aware that newer vaccines have been introduced into the programme. 48.2% (95% CI 43.27-53.16) of the respondents were unaware about the same, while 33.5% (95% CI, 28.99-38.35) claimed to have heard about it but were not sure whether newer vaccines had been introduced. It was observed that as the education status of mothers improved, their awareness regarding newer vaccines in the programme also increased. The knowledge regarding age of administration, number of doses etc. was very poor. However multiple pricks during a single vaccination visit was not a disincentive for the mother to get the child vaccinated. The willingness to buy a vaccine that was not available free of cost from the hospital, increased with increasing educationlevel of the mother. There is a requirement of focused publicity campaigns to increase the awareness and thereby uptake of the new vaccines among caregivers.[1]

A. Dharmalingam et al;(2017) conducted a study on **Immunization knowledge, attitude and practice among mothers of children from 0 to 5 years;**

Five hundred and one mothers of children from 0 to 5 years of age were included in the study. Questionnaire was carried out in mothers to assess the following parameters; The age of the mother,educational status, socioeconomic status, awareness and knowledge of immunization in previous siblings, knowledge about newer vaccines.

Out of501 mothers included in the study, the mean age of the mother whose child undergoing vaccination is 25.88+4 years. The predominant mothers have completed higher education and mean annual income was 86,682.00. Birth order of the child showed no significance. Majority of children (62.6%) included in the study were born at Aarupadai Veedu Medical College and Hospital. The results were analyzed through chi square test and they were significant for role of education (p value = 0.000), effect on maternal age (p value = 0.000) and not significant with birth order. Finally, correlating the effect of Delivery Place on antenatal vaccine awareness, Children who were born at ACMCH, showed higher significance rate in the knowledge of Antenatal Vaccine (p value = 0.000), proper dosage tobe given (p value = 0.034), primary vaccination (p value = 0.000). Also, they were not aware of special vaccination .[2]

(p value = 0.025) and the risk of not immunizing their children (p value = 0.016).

Vaccination is the cost-effective preventive intervention carried out by the government to completely eliminate the preventable diseases by vaccines. There is a 100% immunization coverage upto18 months were recorded for children born at our hospital. This is because of the incentive schemes practiced at our institute. The knowledge and awareness of antenatal vaccination is approximately 70-80 % of the mother's. Over all 30%of mothers are not aware that immunization can be done during minor ailments and after minor adverse reactions. Health professionals play a major role in creating both Immunization awareness and administration in prescribed date to mothers. In spite of awareness through various sources, knowledge on special vaccination to mothers is yet very poor. Initiative programme has tobe taken to overcome this.[2]

Martin Nyaaba Adokiya et al;(2016) conducted a study on **Evaluation of immunization coverage and its associated factors among children 12–23 months of age in Techiman Municipality, Ghana.** A cross-sectional cluster survey was conducted among 600 children. Data was collected using semi-structured questionnaire through face-to-face interviews. In total, 89.5% (537/600) of the children were fully immunized, 9.5% partially immunized and 1.0% received no vaccine. In the multivariate analysis, the following determinants were significantly associated with the likelihood of being not fully vaccinated (Odds Ratio (AOR) larger than 1) : age of the mother/caregiver 40–49 years (AOR = 0.15, 95%CI = 0.05–0.87) compared to less than 20 years; marital status (compared to never

married/single: being married AOR = 0.29, 95%CI = 0.13–0.68), ethnicity (compared to the main ethnic group Akan: Frafra (AOR = 4.71,95%CI = 146–15.18) and Kusaasi (AOR = 0.09, 95%CI = 0.02–0.51), religion (compared to Islam: Christianity AOR = 0.17, 95%CI = 0.06–0.50), sex of child (compared to male: female AOR = 0.39, 95%CI = 0.19–0.80) and possession of immunization card (compared to those having the card: those without the card AOR = 84.43, 95%CI = 17.04–418.33). Mothers/ caregivers aged 40–49 years, being married, Kusaasi ethnic groups, Christian and female child have a higher likelihood of being fully immunized, while Frafra ethnic group and no immunization card have a higher likelihood of not being fully immunized. We found no association between immunization status and child's relationship to respondent; parity; education; occupation and child's age.Immunization status (89.5%) and coverages ranged 92 to 99% of the vaccine doses is high compared to national and regional. Problems of not fully immunized persists and needs urgent attention. Education on immunization should be intensified by health providers. Moreover, disadvantaged populations should be reached with immunization services using out-reach activities.[3]

Paramita Sengupta et al;(2017) conducted a study on **Evaluation of a community-based intervention to improve routine childhood vaccination uptake among migrants in urban slums of Ludhiana, India.** A mixed-methods evaluation was conducted involving a post- intervention comparison of vaccination uptake in six randomly selected intervention and control slum communities. Overall, vaccination uptake was significantly higher in the intervention clusters and the likelihood of full immunization by the age of 1 year was more than twice that in the control clusters [OR: 2.27 (95%CI: 1.12–4.60); P = 0.023]. Qualitative findings showed that stakeholders felt ownership of the intervention and that it was effective in increasing accessibility to and uptake of vaccinations. However, they emphasized the importance of continued government support for the intervention.
Community-based interventions can significantly increase vaccination coverage in deprived populations with previously low uptake of childhood immunization but such initiatives need to be delivered in partnership with the government.[4]

B. Patel Trushitkumar et al;(2017) conducted a study on , **Assessment of Parents' Knowledge, Attitude and Practice about Child Vaccination in Rural areas.**

A prospective cross-sectional study was carried out on 110 Parents residing in rural areas of Bangalore who had children below 5 years of age. A total of 110 parents participated in the study from different rural clusters of Bangalore. Assessment of the extent of Knowledge, attitude and practice about child vaccination showed that a majority of them (72.7 %,) had good knowledge score followed by average (21.8%) and poor (5.4%) whereas 85.4% of the respondents were found to have good attitude towards child vaccination. The immunization status of the child was assessed by counting on the parents' word for it and.68.1% children were completely immunized whereas 7.2 % received incomplete immunization. The immunization status of the remaining 24.5% of the

children was uncertain as assessment was not possible due to lack of surety in the parents part regarding the immunization status of their child. Although parental knowledge was not found to be significantly associated with the immunization status of their child, there was a significant association between the attitude of parents towards child vaccination and the immunization status of their child. A very significant correlation was also seen between the parental knowledge and attitude score with $p \leq 0.0001$.The parental Knowledge, Attitude and Practice about child vaccination are important determinants of the immunization status of their child. A combined effort from the members of the healthcare team and social health workers can definitely make the attainment of the targeted immunization coverage rate in the country possible.[5]

NR Ramesh Masthi, Chandana Krishna(2017)conducted a study on , **Coverage evaluation survey of the pentavalent vaccine using Global Positioning System technology and Google Earth in a rural area near Bangalore.**

This exploratory study was conducted in September by covering three rural Primary Health Centers near Bangalore by a team of field investigators. The population studied was children aged between 6 and 23 months at the time of the survey. WHO's standard EPI 30 cluster sampling technique was used for assessing the vaccine coverage. GarminGPS72H, a hand held GPS receiver, and Google Earth were used for spatial mapping the vaccination coverage.A total of 210 children aged 6–23 months were included in the study. It was found that the completely immunized, partially immunized, and unimmunized children were 93.3%, 4.3%, and 2.4%, respectively. The most common cause for partial immunization and non- immunization was child being ill and the lack of information, respectively. Spatial mappingofvaccination coverage described the immunization coverage in the area and also gave insight into the probable reason for partial/non-immunized children. Coverage of PVV was very highand vaccine was well accepted by the community. GPS and Google Earth were useful in spatial mapping of the vaccination coverage.[6]

Tengiz Verulava et al; (2019)conducted a study on ;**Mothers' Knowledge and Attitudes Towards Child Immunization in Georgia.**

In the framework of a cross-sectional study, 188 mothers with children from three to five years of age, were surveyed in 7 kindergartens of Tbilisi (capital city of Georgia). The semi-structured questionnaire was administered in a face-to-face manner.The majority of interviewed mothers (97%) showed a positive attitude towards immunization and believe that vaccination plays an important role in disease prevention. 32% do not have sufficient information about the routine vaccination schedule and subsequently, 36% of children have incomplete vaccination. The reasons for incomplete vaccination are: a lack of knowledge about a routine vaccination schedule (25.5%), limited information about the necessity of the second or the third dose of vaccination (18.6%),

fear of post-vaccination side effects (16%) and fear of a child illness (9.6%). A significant association was found between mothers' education, practice and attitude regarding immunization. Health institutions (49.5%) and internet sources (21.3%) were the most popular sources of information about immunization.Incomplete immunization is related to mother's lack of information about the immunization schedules, limited awareness about the second and the third dose of vaccination, and it is also related to fear of child getting sick after the vaccination. Some respondents believe that vaccination is not safe and can cause serious side effects. But the majority of mothers have a positive attitude towards child immunization, but their levels of awareness are very low and they do not have comprehensive information about a routine vaccination schedule. It is necessary to raise public awareness of the importance of immunizationby implementing educational programs and by traditional and social media.[7]

N Madhavi, D Manikyamba;(2016) conducted a study on, **Evaluation of immunization status and factors responsible for drop outs in primary immunization in children between 1 -2 years – a hospital based study.**

Interviewing parents of 2000 children of 1-2 yr age attending OPD and Children`s ward in Govt General Hospital, Kakinada, AP. Socio demographic factors and details of immunization status of the children and the reasons for dropouts were noted. The child who received all primary doses of BCG, DPT, Hepatitis B, OPV and Measles mentioned in National immunization schedule is considered fully immunised. Child who missed even a single dose and who did not receive even a single dose of any vaccine is considered partially immunised and un-immunised respectively. Percentages and Chi square test were used for statistical analysis. Overall, 1810 were fully immunised (90.5%), 186 were partially immunised (9.3%) and 4 were unimmunised. Type of family and education of parents had a significant role in the immunization coverage of children whereas gender, religion and residence of children were not found to have significant impact on immunization status. Unwell child, lack of knowledge and migration to other places were found to be major contributing factors for poor immunization. Regular health education of all sections of the community especially the mothers to increase awareness of childhood immunization and addressing the issues of dropouts and poor accessibility is urgently required for better and equitable coverage of across all regions of the country.[8]

Samrawit Hailu et al;(2019) conducted a study on , **Low immunization coverage in Wonago district, southern Ethiopia: A community-based cross-sectional study.**

We conducted a community-based, cross-sectional study in three randomly selected kebeles in the Wonago district. Our nested sample of 1,116 children aged 6–36 months included 923 child-mother pairs (level 1) within kebeles (level 2). We conducted multilevel regression analysis using STATA software.Among participants, 85.0% of children aged 12–36 months received at least one vaccine, and 52.4% had complete immunization coverage.

After controlling for severalindividual and community variables, we identified six significant predictor variables for complete immunization: Older mothers' age (AOR = 1.05, 95% CI: 1.00–1.09), higher utilization of antenatal care (AOR = 1.36, 95% CI: 1.14–1.62), one or more tetanus-toxoid vaccination during pregnancy (AOR = 2.64, 95% CI: 1.43–4.86), mothers knowing the age at which to complete child's vaccinations (AOR = 2.00, 95% CI: 1.25–3.20), being a female (AOR = 0.64, 95% CI: 0.43–0.95), and child receiving vitamin A supplementation within the last 6 months (AOR = 2.79, 95% CI: 1.59–4.90). We observed a clustering effect at the individual and community levels with an intra-cluster correlation coefficient of 48.1%.We found low immunization coverage among children in the Wonago district of southern Ethiopia, with significant differences across communities. Promoting maternal health care and community service could enhance immunization coverage.[9]

Chukwudi A.Nnaji et al ;(2019) conducted a study on **Immunogenicity and safety offractional dose yellow fever vaccination: A systematic review and meta-analysis.**

We registered this review on the International Prospective Register of Systematic Reviews (PROSPERO, registration number: CRD42018084214), developed the protocol in line with the Preferred Reporting Items for Systematic Review and Meta-Analyses Protocols (PRISMA-P) and synthesised the evidence in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA). We stratified meta-analyses by vaccine dose.We retrieved 2524 records from the literature search, eleven of them potentially eligible. From these studies, we included eight eligible trials, with a total of 2371 participants. Seroconversion rates at four to five weeks following vaccination were similar between participants who received standard doses and participants who received fractional doses containing one-third (547 participants: risk ratio [RR] 1.02, 95% confidence interval [CI] 1.00–1.04), one-fifth (155 participants: RR 1.00, 95% CI 0.98–1.03), one-tenth (890 participants: RR 0.99, 95% CI 0.96–1.01), and one-fiftieth (661 participants: RR 0.97, 95% CI 0.92–1.02) of the standard dose. However, the rates of seroconversion were substantially lower among participants who received fractional doses containing one-hundredth and lower fractions of the standard dose. Immunogenicity similarly persisted 8–10 years following both fractional and standard dose vaccination. Minor adverse events following vaccination did not differ across doses, and no serious adverse events were reported in any study arm.These findings support the use of fractional dosing as a strategy for mitigating vaccine shortages. The strategy should be specifically considered for individuals who are young, immuno-competent and well nourished.[10]

Maureen D.Goss et al;(2020) conducted a study on **An assessment of parental knowledge, attitudes, and beliefs regarding influenza vaccination.**

To assess parental attitudes and beliefs regarding the influenza vaccine, a brief mixed-methods survey was

developed and optimized for an electronic platform. The Health Belief Model informed survey design and data analysis. Questions were classified into five core concepts: knowledge, barriers, benefits, experience, and severity. Participants were solicited from a population of parents whose children had participated in a school-based influenza surveillance study (n = 244, 73% response rate). We tested associations between responses and children's influenza vaccination status the prior season. Categorical questions were tested using Pearson's chi-squared tests and numerical or ordered questions using Mann-Whitney tests. P-values were corrected using the Bonferroni method.Doubting effectiveness, concerns about side effects, inconvenience, and believing the vaccine is unnecessary were barriers negatively associated with parents' decision to vaccinate their children during the 2017–18 flu season ($p < 0.001$). Knowledge that the vaccine is effective in lowering risk, duration, and severity of influenza; receiving the influenza vaccine as an adult; and recognizing the importance of vaccination to prevent influenza transmission in high-risk populations were positively associated with parents' decision to vaccinate ($p < 0.001$).

Understanding barriers and motivators behind parents' decision to vaccinate provides valuable insight that has the potential to shape vaccine messaging, recommendations, and policy. The motivation to vaccinate to prevent influenza transmission in high-risk populations is a novel finding that warrants further investigation.[11]

Asamnew Zewdie et al;(2016) conducted a study on ,**Reasons for defaulting from childhood immunization program: a qualitative study from Hadiya zone, Southern Ethiopia.**

In this study, the main reason for defaulting from the immunization was inadequate counseling ofmothers that led to a lack of information about vaccination schedules and service arrangements, including in unusual circumstances such as after missed appointment, loss of vaccination card and when the health workers failed to make home visits. Provider-client relationships are poor with mothers reporting fear of mistreatment and lack of cooperation from service providers. Contrary to what health workers and managers believe, mothers were knowledgeable about the benefits of vaccination. The high workload on mothers compounded by the lack of support from male partners was also found to contribute to the problem. Health system factors that contributedto the problem were poorly arranged and coordinated immunization services, vaccine andsupplies stock outs, and lack of viable defaulter tracking systems in the health facilities.The main reasons for defaulting from the immunization program are poor counseling of mothers, unsupportive provider-client relationships, poor immunization service arrangements, and lack ofsystems for tracking defaulters. Efforts to reduce defaulter rates from the immunization programneed to focus on improving counseling of mothers and strengthening the health systems, especially with regards to service arrangements and tracking of defaulters.[12]

Jolsna Joseph, et al ; (2013)conducted a study on, **Parents' knowledge, attitude, and practice on childhood immunization.**

A cross-sectional survey was conducted in immunization clinic at Vanivilas hospital, a government tertiary care center (G) attached to Bangalore Medical College and Research Institute and a private pediatric clinic (P) in Bengaluru. Data were collected from 200 parents/ guardians (100 from each set up) using structured questionnaire administered by the investigators.Out of 200 parents surveyed, 172 (86%) children were found to be fully immunized. The sickness of child was the most common cause (67%) for missing vaccination. A statistically significant proportion of boys (95%) were completely immunized as compared to girls (84%, $p<0.01$). Most of them knew that vaccination prevented some communicable diseases but were unaware as to which diseases they prevented and that the immunity is not life-long. Knowledge ($p<0.004$) and practice ($p<0.001$) of parents opting for optional vaccines were significantly higher in private setting compared to the government setting. All mothers opined that compliance to immunization schedule is important, had recommended vaccination to others and maintained a vaccination card. Gender of the child, birth order, mothers' educational status, monthly income of parents and religion significantly affected the vaccination status while mother's employment did not influence it.Although childhood immunization practices and attitudes are satisfactory, majority do not have specific knowledge on vaccines and the duration of protection they offer. Socio-demographic factors had a significant influence on the immunization status. Hence, efforts should be focused on improving them also besides educating them about vaccines to improve their knowledge.[13]

Shiferaw Birhanu et al ;(2016) conducted a study on , **Knowledge, Attitude and Practice of Mothers Towards Immunization of Infants in Health Centres at Addis Ababa, Ethiopia.**

Institutional based cross-sectional study was conducted from March 1st to April 1st, 2013. Multistage sampling technique was used for participant selection. Participants were interviewed with structured questionnaire for different variables. Descriptive statistics and binary logistic regression analyses were performed during data analysis. Only 55.0%, 53.8%, and 84% of

respondents had good knowledge, positive attitude, and good practice towards immunization of infants, respectively. Maternal education (Adjusted Odds Ratio [AOR[= 1.781, 95% CI: 1.035, 3.065), respondents who had infants aged from 3-9 months (AOR=1.947, 95% CI:1.051, 3.607),

9-12 months (AOR =2.305, 95% CI: 1.216, 4.371) and mothers who gave births greater or equal to two times (AOR = 1.560, 95% CI: 1.087, 2.238) were significantly associated with knowledge of mothers regarding immunization of infants. Mothers' education (AOR = 2.160, 95% CI: 1.208, 3.864) and mothers who had infants' aged from 2-3 months (AOR = 2.014, 95% CI: 1.044, 3.883) were significantly association with favorable attitude towards immunization of infants. Good infant immunization practice was significantly associated with mothers who heard information about vaccination (AOR=1.784, 95% CI: 1.002, 3.176), mothers who know correctly the time when infants should begin immunization (AOR=2.240, 95% CI: 1.198, 4.192), know thenumber of sessions needed (AOR=1.772, 95% CI: 1.076, 2.918), know the time when infants should complete immunization (AOR=1.800, 95% CI: 1.123, 2.885) and place of delivery (AOR=23.829, 95% CI: 10.025, 56.639). Knowledge and attitude of mothers' about infant vaccination was not adequate. Despite inadequate knowledge and attitude of mothers towards infant immunization, 84.0% of mothers found in Addis Ababa had good practice of infants' immunization. Health education to promote knowledge and attitude based immunization practice is recommended.[14]

Enwonwu KG et al ;(2018) conducted a study on Perception of Childhood Immunization among Mothers of Under-Five Children in Onitsha, Anambra State.

This was a descriptive cross-sectional study involving 300 mothers of under-five children who access immunization services and antenatal care at St Charles Borromeo Hospital Onitsha, Anambra state. The respondents had a mean age of 28.75 ± 4.44 years. One (0.33%) of the mothers was single while 299 (99.67%) were married and living in a monogamous family setting. All the respondents were Christians, with the majority having completed secondary education 107(35.7%). Majority of the respondents 116(38.67%) were teachers, 94 (31.33%) were traders. The mean age of the children was 2.5±0.6 months. More than half (54.0 %) were females. All the children were delivered in the hospitals where their mothers went for antenatal

care. All the mothers said immunization was meant for all children and also that vaccines do notcontain contraceptives. Ninety-five percent (95%) of children had received BCG, the remaining 5% were newborns who were about to receive BCG on the day of interview. All the women reported that prevention of deadly vaccine-preventable diseases was the benefit of immunization. Awareness of immunization by the respondents was very high. Majority had good attitude towards immunization. Despite a good uptake of immunization, there were some children who were partially immunized or not immunized at all.[15]

D. Adeyinka et al;(2009) conducted a study on ; Uptake Of Childhood Immunization Among Mothers Of Under-Five In Southwestern Nigeria

The study was a descriptive cross sectional household survey of perception of mothers with children under 5 years of age to immunization in Igbo-Ora, Oyo state. A cluster sampling of the mothers were carried out. A total of 503 mothers were interviewed with a mean age of 27.3 years and SD of 5.7 years. The mean age of the children was 19.7 months with a SD of 14.4 months. Almost all the women interviewed (99%) were aware of the immunization with 65.7% obtaininginformation at antenatal clinics. A good proportion of children aged 12 to 33 months were fully immunized (76.9%), 30% were partially immunized and 0.7% were not fully immunized. Majority had good attitudes to immunization with 84.3% having attitude scores of 75% and above. Immunization of the children was not significantly associated with the socio-demographic characteristics at 5% level of significance. The reasons reported for not completing immunization include long waiting on queues (46.1%), payment at private clinics (20.2%) and distance (17.7%). The role of antenatal clinic as a source of awareness should further be strengthened by training more health workers to work since majority of the respondents got informed about immunization in the antenatal clinics.[16]

FuqiangCu et al;(2013) conducted a study on , **Evaluation of policies and practices to prevent mother to child transmission of hepatitis B virus in China: Results from China GAVI project final evaluation.**

We used the methods recommended by WHO to select a cluster sample of health care facilities for the purpose of an injection safety assessment. We stratified China into three regions based on economic criteria, and selected eight counties with a probability proportional to population size in each region. In each selected county, we selected (a) 10 townships at random among the list of townships of the county and (b) the one county level hospital. In each hospital, we abstracted 2002 through 2009 records to collect information regarding birth cohorts, hospitals deliveries, vaccine management, hepatitis B vaccination delivery, HBsAg screening practices and results, and HBIG administration. In addition, in all hospitals, we abstracted records regarding the delivery of TBD.We visited 244 facilities in the three regions, including 24 county hospitals and220 township hospitals. We reviewed 837,409 birth summary records, 699,249 for infants born at county or township hospitals. Hospital delivery rates increased from 58% in 2002 to 93% in 2009. Surveyed TBD coverage increased from 60% in 2002 to 91% in 2009 (+31%). Surveyed TBD coverage among children born in hospitals increased from 73% in 2002 to 98% in 2009. Between 2002 and 2009, the proportion of pregnant women screened for HBsAg increased from 64% in 2002 to 85% in 2009. In 2009, the proportion of infants born to women screened and found to be HBsAg positive who did not receive any immunization within 24 h after birth rangedfrom 0% to 0.7% across regions.Increased availability of hepatitis B vaccine, along with efforts to improve hospital deliveries, increased TBD coverage in China. This decreased perinatal HBV transmission and will reduce disease burden in the future. Screening for HBsAg to guide HBIG administration has begun, but with heterogeneous immuno-prophylaxis practices and a poor system for follow up.[17]

Sandeep Sachdeva and Utsuk Datta;(2018) conducted a study on, **Hepatitis B Immunization Coverage Evaluation Amongst Slum Children**

Using cluster sampling technique based on probability proportional to size, 210 [30x7] resident children were contacted. The data was collected during Oct' 2005 in the slums with approx. population of 429,130 in one randomly selected municipal zone of Delhi. Primary health facility(n=32) based performance reports for hepatitis b immunization was also assessed for data triangulation.Out of 210 eligible children, it was noticed that 100 (47.62%) had received all threedoses of Hepatitis B vaccine whereas 19 (9.04%) and 17 (8.09%) received two &

one dose respectively. The odd's of a child receiving all three-doses was found to be significant for birth order-one [OR 2.13, 95% CI: 0.93 to 4.88], birth in health institution [OR 2.13, 95% CI: 1.06 to 4.28] and awareness of mother for Hepatitis B vaccine [OR 3.40, 95% CI: 1.64 to 7.03]. Religion and gender of child had no statistically significant bearing on receiving recommended hepatitis Bdoses. Overall, health facilities reported 44.6% hepatitis-B III dose.Study reflects low Hepatitis b-III dose immunization coverage among children residing in slums.[18]

Shiraz Shaikh et al;(2010) conducted a study on; Coverage and Predictors of Vaccination Among Children of 1-4 Years of Age in A Rural Sub-District of Sindh

A questionnaire based representative multi-stage cluster survey was conducted. A total of 549 children aged 1-4 years were assessed for coverage and predictors of vaccination. Univariate and multivariate analysis was done using logistic regression to determine the unadjusted and adjusted relationship between socio-demographic predictor and outcome (vaccination status). The coverage for complete vaccination was 71.9% (95%CI=68.1%-75.7%). Educational level of mother (p=0.042), father (p=0.001) and child birth at hospital (p=0.006) were significantly associated with the vaccination status. Mother's educational level of intermediate and above was the strongest predictor (OR=12.19, 95%CI=1.57-94.3) for vaccination. Education of parents, particularly mother's education was important determinant of vaccination status of the children. In addition, distance from taluka health facility and misconception of parents were among the main reasons of not getting the children vaccinated. There is a need to educate the parents especially mothers about the importance of vaccination and organize EPI services at Basic Health Unit level to improve the vaccination coverage in rural areas of Pakistan. [19]

Nazish Siddiqi et al;(2010) conducted a study on **Mothers' knowledge about EPI and its relation with age-appropriate vaccination of infants in peri-urban Karachi**

A cross-sectional survey was conducted, utilizing World Health Organization\'s thirty-cluster sampling strategy. All households with at least one infant were considered eligible. After obtaining verbal consent, the mother was interviewed to assess her knowledge and attitudes towards EPI vaccination. Infant\'s coverage status was verified by checking EPI card or verbal inquiry. A knowledge score was developed by summing all correct answers.A total of 210 mothers (7 per cluster) were identified and interviewed. The number and proportion of mothers correctly identifying the seven EPI diseases were as follows; Tuberculosis 57 (27.1%), Diphtheria 53 (25.2%), Pertussis 71 (33.8%), Tetanus 70 (33.3%), Measles 85 (40.5%), Polio 91

(43.3%) and Hepatitis B 65 (31.0%). Only ninety four (44.8%) children were appropriately vaccinated for their age. In the multivariate model, mothers\' knowledge was not significantly associated with appropriate vaccination of their children ($p = 0.22$), however, mothers\' education was found to be significant ($p < 0.001$).Mothers\' knowledge about EPI vaccination in peri-urbanKarachi was quite low and not associated with their children\'s EPI coverage. Mothers\' educational status, however, was significantly associated with Child\'s coverage. This finding depicts a better health seeking behaviour of a more educated mother .[20]

Singh MC et al;(1994) conducted a study on , **Immunization coverage and the knowledge and practice of mothers regarding immunization in rural area.**

One hundred and thirty mothers in the age group (15-44) years and 142 children aged (12-59) months were selected by cluster sampling method from nine villages in Wardha district. Out of this 100 mothers and 122 children could be contacted for evaluation of immunization coverage and assessing maternal knowledge and practice regarding immunization. 52.5% children were fully immunized and 45.1% were partially immunized. Vaccine coverage for B.C.G. and primary doses of DPT/OPV was 95.9% and above 85% respectively. It was 57.4% for measles and 63.04% for booster dose of DPT/OPV. Drop-out rate from second to third dose of DPT/OPV was 5.3% and from third to booster dose was 36.96%. Mothers had a fair knowledge regarding need for immunization but a poor knowledge regarding the diseases prevented and doses of the vaccines. Commonest side reactions reported were fever (36%) and pain at injection site (33%). Contraindications listed by mothers were mild cold (41%), mild fever (24%) or loose stools (14%). Health workers were the major source of information and 76% knew the use and maintenance of immunization cards.[21]

NEED FOR STUDY

NEED FOR THE STUDY:

One of the key and most cost effective health interventions is achieving hundred percent immunization status. It was formulated to attain the goal of Health For All.

India has launched national immunization programme called expanded programme of immunization in1978 with the introduction BCG,OPV,DPT and typhoid and paratyphoid vaccines. But in India only 61% of vaccination is taking place.

Poor prenatal care, lack of close family members, child birth position, and more than one family relocation during child'slife time were associated with in adequate immunization. Findings challenged the notation that children of recent immigrants bear a higher risk of under immunization.

A stratergy for 21st century focuses on certain emerging infectious diseases and people at risk historically. Childhood vaccination rates have been higher in white population than racial and ethnic population. Vaccination rates for preschool children in racial and ethnic groups with lower vaccination rates however have been increasing at a more rapid rate,significantly narrowing the gap. Recommendations of the immunization practices advisory committee (ACIP, 2005) addressed the issues such as-

a) The risk and benefits if Pertusis vaccine for children with family history of convulsions.

b) Antipyretic use in conjunction with DPT vaccine absorbed.

Nurse working in community has an important role in immunization programme and to have the mother to develop knowledge, attitude and for such mothers nurse can well plan an organize programme and nurses have greater opportunity to assess knowledge and attitudeofmothers and to preventmanycommunicable diseases. Hence, theassessment of knowledge and attitude about immunization among the mothers has a greater signi cance in the present world.

AIMS AND OBJECTIVES

AIMS AND OBJECTIVES:

Aims:

➢ The main objective is to provide information about immunization in child bearingmother.

➢ The overall aim of the national immunisation programme is to protect the population from vaccine preventable diseases and reduce the associated morbidity and mortality.

➢ Protect the health of individuals and the wider population

➢ Reduce the number of preventable infections and their onward transmission.

➢ Achieve high coverage in the target cohorts and Minimise adverse physical/ psychological/clinical aspects of immunisation (e.g. anxiety, adverse reactions).

Objectives:

♦ Reduce, eliminate, or maintain elimination of cases of vaccine-preventable disease and Reduce invasive pneumococcal infections.

♦ Achieve and maintain effective vaccination coverage levels for universally recommended vaccines among young children.

♦ Increase the percentage of providers who have had vaccination coverage levels among children in their practice population measured within the past year.

♦ Identifies the eligible population and ensures effective timely delivery with optimal coverage based on the target population.

♦ To increase the immunization coverage.

♦ To improve quality of service and to achieve self sufficiency in vaccine production.

METHODOLOGY

Method and collection of data:

Study site:

Study was conducted at KIMS Teaching and general Hospital, Amalapuram which is a 900 bedded teaching hospital, and is a one of the largest hospital in Konaseema.

Study duration: The study will be carried out for a period of 6 months

Study Design: A prospective study

Study criteria: The study will be carried out by considering the following inclusion and exclusion criteria

Inclusion criteria:

1.Child bearing mother visiting immunization programme.

2.Child bearing mother above the age of 18 years. 3.Child bearing mother willing to participate in the study

Exclusion criteria:

1.Child bearing mother below the age of 18 years.

2.Child bearing mother not willing to participate in the study. 3.Child bearing mother suffering from psychiatric study disorder. **Source of data:**

Child bearing mother attending for immunization programme.

Materials:

1. Data collection forms.
2. Immunization knowledge leaflets.
3. Immunization knowledge, attitude assessment questionnaires.

Ethical committee approval:

Prior to the study, institutional ethical committee clearance was obtained from the KIMS medical college , Amalapuram

Study procedure:

Analysis of data : The data will be analyzed by means of suitable test such as student T-test .

Study procedure:

1.The study will be carried out in the department of pediatrics with prior permission from head of the department.

2.Study will be initiated after ethical clearance

3.The child bearing mother visiting the department of pediatrics will be enrolled in to the study by considering the study criteria.

4.The baseline knowledge of enrolled women will be assessed by means of knowledge, attitude and practice assessment questionnaires.

5.Immediately the women were educated regarding immunization by means of leaflets, and by using other relevant resources and they will be provided with the immunization knowledge leaflet.

RESULTS

Details of age distribution of child bearing mothers:

The result revealed that 67 (64.99%) were in the age of 17-27 followed by 26 (25.22%) were in the age of group of 28-38 and 4(3.88%) were in the age group of 39-49 years respectively.

Table no.1 Details Of Age Distribution Of The Child Bearing Mothers:

Age	Number of child bearing mothers	Percentage%
17-27	67	64.99%
28-38	26	25.22%

39-49	4	3.88%
Total	97	100%

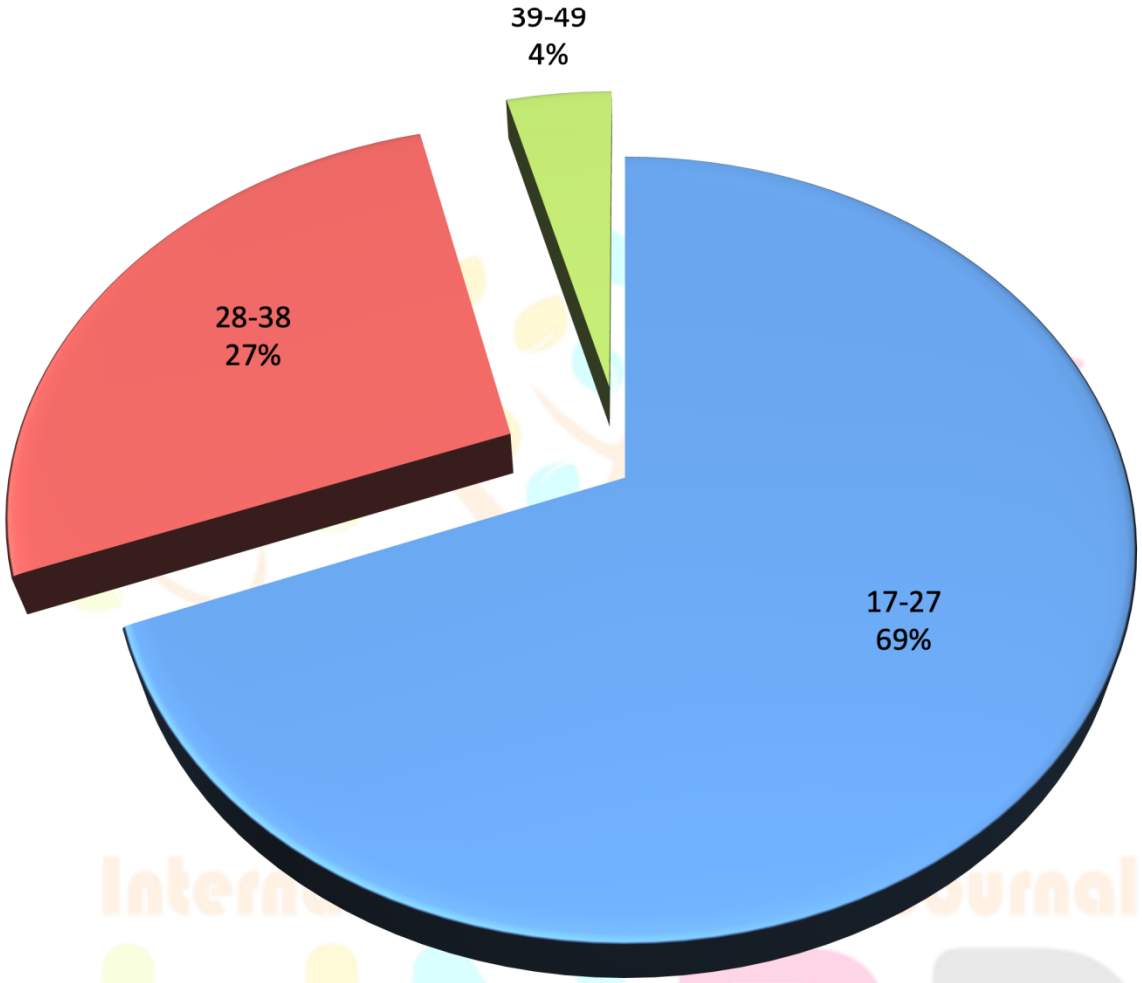


Figure No.1 Details Of Age Distribution Of The Child Bearing Mothers:

Details of educational status of women :

The results show the number of women were illiterate 22(21.34%) followed by 5(4.85%), 1(0.97%), 31 (30.07%), 37(35.89%),1(0.97%) having the education primary, preparatory,secondary, higher, masterdegree respectively.

Table No.2 Details Of Educational Status Of Child Bearing Mothers:

Level	Number of child bearing mothers	Percentage%
Illiterate	22	21.34%
Primary	5	4.85%
Preparatory	1	0.97%
Secondary	31	30.07%
Higher	37	35.89%
Master degree	1	0.97%
Total	97	100%

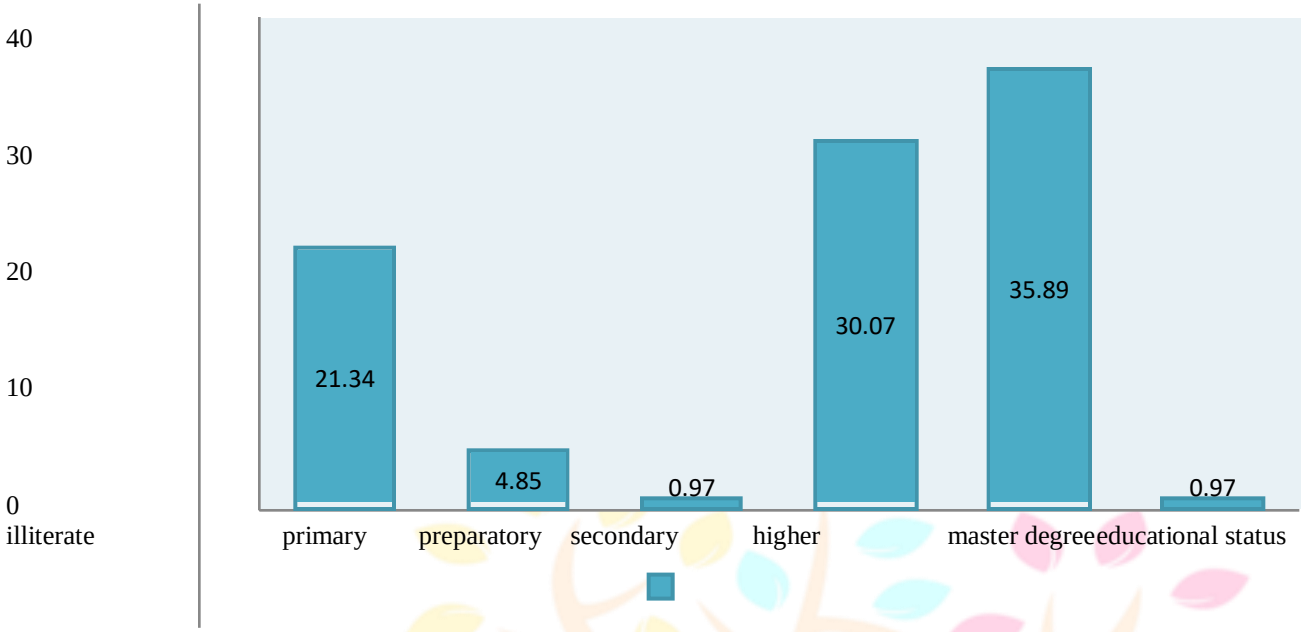


Figure No.2 Details Of Educational Status Of Child Bearing Mothers:

Child bearing womens details of employment:

The results shows that 25(24.25%)were employed and 72(69.82%) were unemployed.

Table No.3 Child Bearing Mothers Details Of Employment:

Employment status	Number of child bearing mothers	Percentage%
Employed	25	24.25%
Unemployed	72	69.82%
Total	97	100%

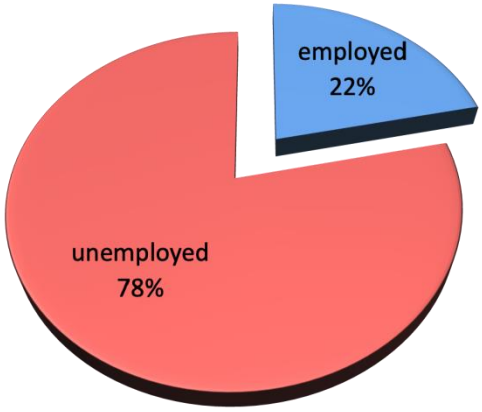


Figure No.3 Child Bearing Mothers Details Of Employment:Details of number of children of child bearing mothers:

The results shows that 53(51.41%) child bearing mothers having one child,35(33.95%),9(8.73%) having two children and more than two children respectively.

Table No.4 Details Of Number Of Children Of Child Bearing Mothers.

Number of children	Number of child bearing mothers	Percentage%
1	53	51.41%
2	35	33.95%
>2	9	8.73%
Total	97	100%

Fig No.4 Details Of Number Of Children In Child Bearing Mothers:Child bearing mothers details of socio economic status :

The results revealed that number of child bearing mothers 25(24.25%) belongs to the lower clases followed by the 71(68.87%) belongs to the middle classes, 1(0.97%) belongs to the high class respectively.

Table No. 5 Child Bearing Mothers Details Of Socio Economic Status :

Status of child bearing Mothers	Number of child bearing mothers	Percentage%
Lower class	25	24.25%
Middle class	71	68.87%
High class	1	0.97%
Total	97	100%

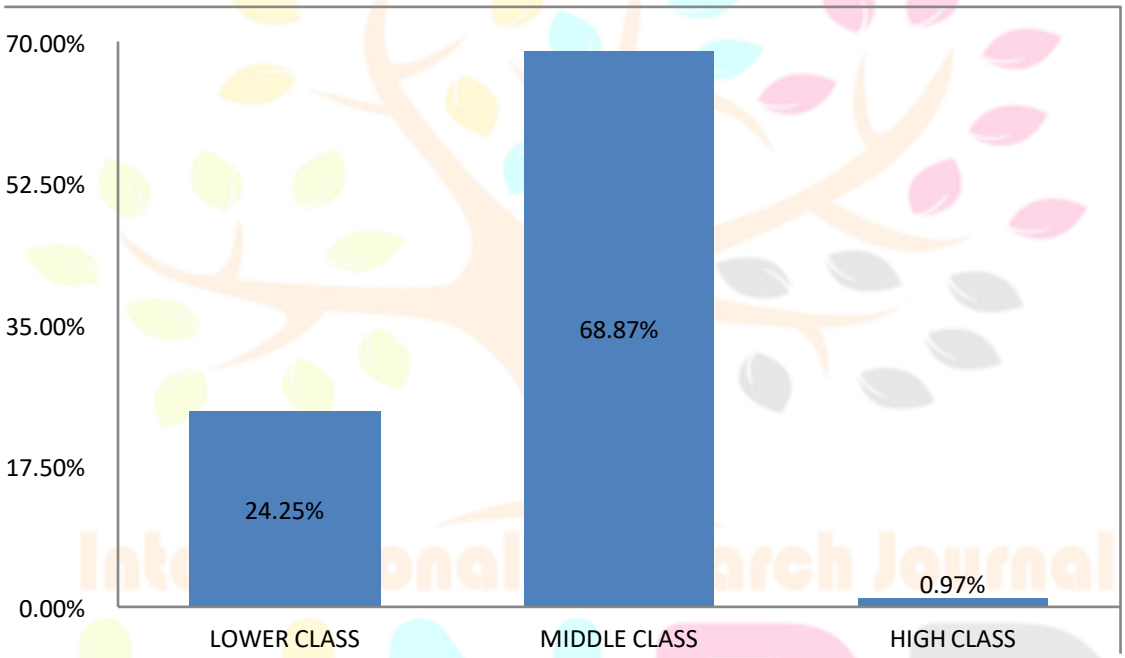


Figure No.5 Child Bearing Mothers Details Of Socio Economic Status:

Details of child bearing mothers residence:

The results revealed that 68(65.98%) of child bearing mothers are from urban area and 29(28.13%) of child bearing mothers are from rural area.

Table No.6 Details Of Residence Distribution Of Child Bearing Mothers:

Child bearing mothers Details	Number of child bearing mothers	Percentage%
Urban	68	65.98%
Rural	29	28.13%
Total	97	100%

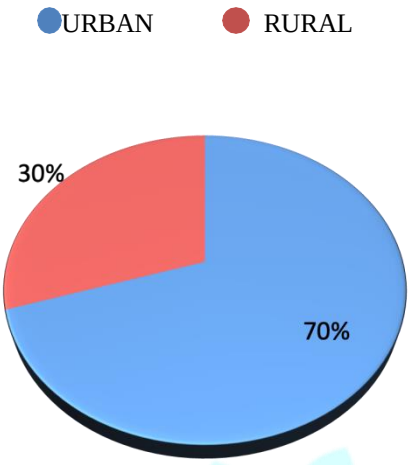


Figure No.6 Details Of Residence Distribution Of Child Bearing Mothers:

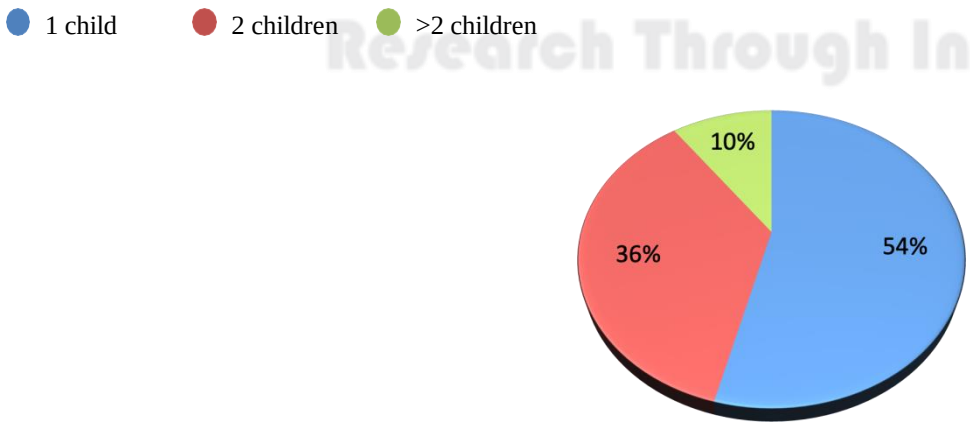
Details Of Child Bearing Mothers Parity Of Respondents:

The results shows that 53(51.41%)mothers were bearing one child followed by35(33.95%) were bearing 2 childs and 9(8.73%) were bearing more than 2 child.

Table no.7 Details Of Child Bearing Mothers Parity Of Respondents:

Parity of respondents	Number of child bearing mothers	Percentage%
1 child	53	51.41%
2 child	35	33.95%
>2 child	9	8.73%
Total	97	100%

Figure No.7 Details Of Child Bearing Mothers Parity Of Respondents:



Assessment of knowledge about immunization:

Table No.8 Details On Knowledge About Immunization:

S NO.	QUESTIONS	YES	NO	D O N ' T KNOW
1.	**Do you think immunization promote growth?**	83	3	11
2.	**Do you think immunization prevents malnutrition?**	74	10	13
3.	**Are you aware of the vaccines provided by government?**	96	0	1
4.	**Do anganwadi workers visit during thevaccination programme of your child?**	97	0	0
5.	**Do you feel that you know which vaccines you should get for your child?**	25	60	12
6.	**Do you feel that you get enough information about vaccines and their safety?**	35	46	16
7.	**Do you think that most parents like you have their children vaccinated with all the recommended vaccines?**	97	0	0
8.	**Do you believe that by vaccinating your child,others are protected as well?**	1	91	5
9.	**Can you tell me what a vaccine is ? what does it do to the body?**	17	66	14
10.	**Do you think it is possible to have received too many vaccines of one time?**	6	79	12
11.	**Do you think vaccines overload the immune system?**	90	1	6
12.	**Do you feel that your healthcare provider cares about what is a best for your child?**	97	0	0

13.	**Do you believe that vaccines are still needed when diseases are rare?**	96	1	0
14.	**Have you ever not accepted a vaccination for your child?**	0	97	0
15.	**Do you think vaccines are still needed when the diseases is no longer prevalent?**	96	0	1

P value: 0.006

Table No.9 Shows Associations Between Educational Status And Knowledge About Vaccine Preventable Disease.

It was assessed as, those mothers who could name at least one vaccine preventable disease were considered as having knowledge and those who couldn't even name a single vaccine were taken as not having any knowledge in any educational status. The educated mothers had some knowledge about vaccine preventable disease 45.8% with no signiĸicant differences.

Mothers education	**TB**		**pertussis**		**measles**		**3 or more of vaccine disease**		**False answer**		**Don't know**	
	no	%	no	%	no	%	no	%	no	%	no	%
Illiterate	1	25	0	0	2	25	5	10.4	1	16.7	9	40.9
Primary	0	0	0	0	1	12.5	3	6.2	0	0	1	4.6
preparatory	0	0	0	0	0	0	1	2.1	0	0	0	0
secondary	1	25	0	0	3	37.5	17	33.3	2	33.3	5	22.7
higher	2	50	1	100	2	25	22	45.8	3	50	7	31.8
Master degree	0	0	0	0	0	0	1	2.1	0	0	0	0

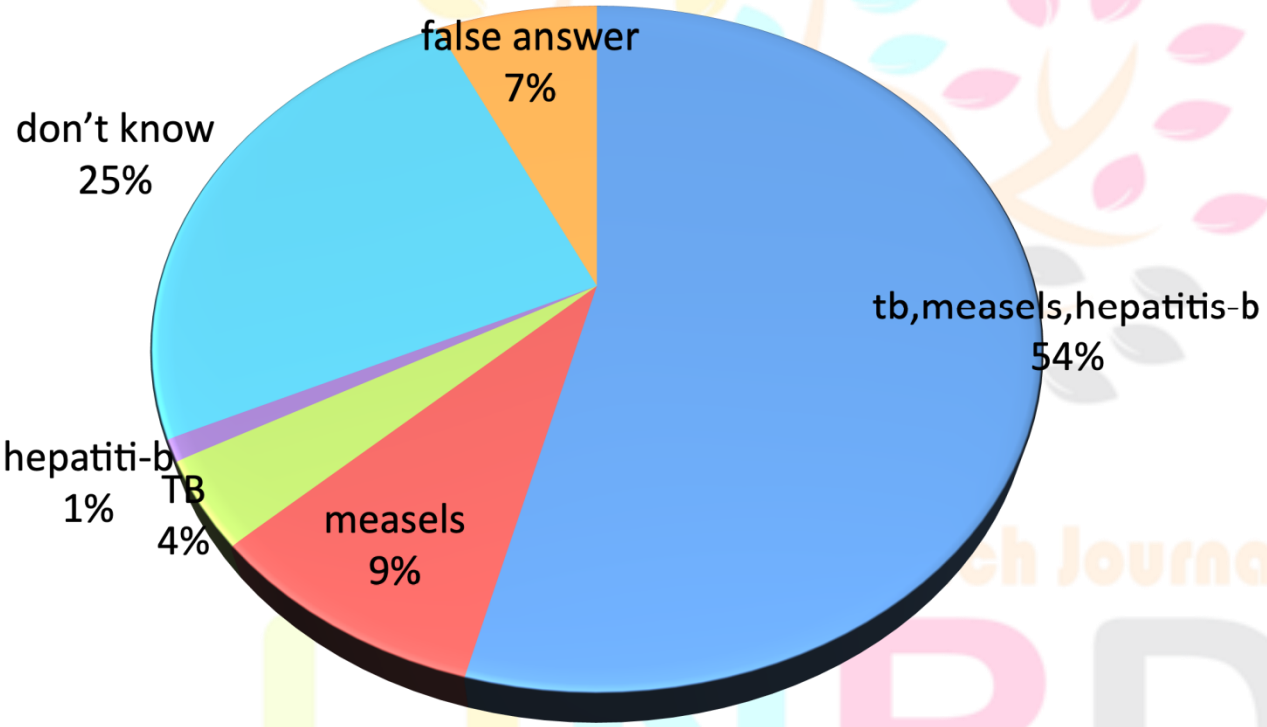
Table (9) Associations between educational status and knowledge aboutvaccine preventable disease.

FISHER EXACT: 6.214

P VALUE: 0.982NS

Figure No.9 Clarieies Distribution Of Mother's Awareness About Vaccinations.

It is obviously noted that more than half of them (54%) were mentioned three items ofdiseases (T.B, Measles and Hepatitis B) followed by don't know (25%).



Mothers awareness about diseases prevented by vaccines

Table No.10 Shows Relations Between Total Knowledge Score About Vaccination AndMother's Characters.

It indicates that urban with moderate socioeconomic status had good total knowledge score (83.8%) with statistically difference (P=0.01, p =0.02). while not working mothers and illiterate had poor total knowledge score (84%, 40% respectively).

Socio-demographic charectaristic	**Total knowledge about vaccination**						***x***	**p-value**
	poor		**satiseied**		**Good**			
	no	**%**	**no**	**%**	**no**	**%**		
Residence								
UrbanRural	12 13	48 52	25 10	71.4 28.6	31 6	83.8 16.2	9.161	0.01
Education of the Mother								
Illiterate	10	40	5	14.3	7	18.9		
Primary	0	0	2	5.7	3	8.1		
Preparatory	0	0	1	2.9	0	0	10.646	0.244NS
Secondary	5	20	15	42.9	11	2907		
Higher	10	40	12	34.3	15	40.5		
Master degree	0	0	0	0	1	2.7		
Occupation of the Mother								
Working	4	16	11	31.4	10	27	1.864	0.394NS
Not working	21	84	24	68.6	27	73		

Socioeconomic Status								
Low	12	50	7	20	6	16.2	11.309	0.028
Middle	12	50	27	77.1	31	83.8		
High class	0	0	1	2.9	0	0		

DISCUSSION

DETAILS OF PATIENT ENROLLMENT:

A total 100 child bearing mothers from the study site were enrolled into the study by considering study criteria. Out of which 97 child bearing mothers completed the study and turned up for subsequent follow up.

ASSESEMENT OF DEMOGRAPHIC CHARCTERSTICS:

- **AGE:**

The result revealed that 67 (64.99%) were in the age of 17-27 followed by 26 (25.22%) were in the age of group of 28-38 and 4(3.88%) were in the age group of 39-49 years respectively.

- **EDUCATIONAL STATUS:**

The results show the number of women were illiterate 22(21.34%) followed by 5(4.85%), 1(0.97%) , 31 (30.07%), 37(35.89%),1(0.97%) having the education
primary, preparatory,secondary, higher, masterdegree respectively.

- **EMPLOYMENT:**

The results shows that 25(24.25%)were employed and 72(69.82%) were unemployed.

- **NUMBER OF CHILDREN:**

The results shows that 53(51.41%) child bearing mothers having one child,35(33.95%),9(8.73%) having two children and more than two children respectively.

- **SOCIO ECONOMIC STATUS:**

The results revealed that number of child bearing mothers 25(24.25%) belongs to the lower classes followed by the 71(68.87%) belongs to the middle classes, 1(0.97%) belongs to the high class respectively.

- **RESIDENTIAL STATUS:**

The results revealed that 68(65.98%) of child bearing mothers are from urban areaand 29(28.13%) of child bearing mothers are from rural area.

- **PARITY OF RESPONDENTS:**

The results shows that 53(51.41%) mothers were bearing one child followed by 35(33.95%) were bearing 2 childs and 9(8.73%) were bearing more than 2 child.

ASSESMENT OF KNOWLEDGE REGARDING IMMUNIZATION AMONG CHILD BEARING MOTHERS:

KNOWLEDGE AND ATTITUDE EVALUATION OF PARTICIPANTS:

The first dimension that has been explored in the present study was the assessment of awareness about vaccinations that mothers have. According to our present study finding that more than half of them were mentioned three items of diseases (T.B, Measles and Hepatitis B) followed by don't know (25%).

Finally, we believe that our study represents one of the most comprehensive attempts to document the EVALUATION OF AWARENESS IN IMMUNIZATION AND ITS BENEFITS IN CHILD BEARING MOTHERS IN KONASEEMA INSTITUTE OF MEDICAL SCIENCES (KIMS), AMALAPURAM.As with any research, however, there are several limitations to this study that should be considered when interpreting our results. The results of this study may not generalize to other populations of mothers. In recent years, the community in which this study took place has experienced difficult economic conditions.

CONCLUSION

Work has been carried out by using child bearing mothers in order to assess and improve their knowledge and Attitude on immunization.

The study result conclude that the child bearing mothers were have knowledge in vaccination but have a poor knowledge regarding the vaccines related to the diseases. It is interesting to note that all the study subjects having

the attitude to Immunize their babieshowever they have poor knowledge in regard to immunization.

Based on the results of the present study, Low literacy level of mothers is a matter of worry. Some of them don't know about the diseases for which their child is being immunized.

The role of pharmacist has shown the impact in improving study subject knowledge andattitude.

Majority of Indian women are ready for immunize their child, but they have lack of knowledge and misconceptions regarding immunization . Hence education program shouldbe conducted in every health care center in order to over come the above. In this regard thepharmacist can play a vital role .

Recommendations

There is a dire need to arrange for health education program sessions for child bearing mothers of children with main emphasis on importance of vaccination & Vaccine Preventable Diseases (VPDs). The role of clinic as a source of awareness should further be strengthened by training more health care workers since majority of the respondents got informed about immunization in the clinic. This clearly signiβies the importance of audio visual media which can be taken as means of communicating ideas and information about health and medicine to a mass audience. Finally we should recommend that more televisioncoverage should be given to vaccine preventable diseases. More funds should be allocated to launch such programs through mass media for the communicable disease in our country.

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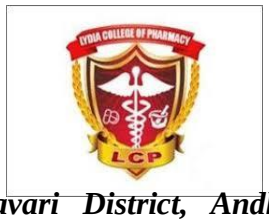
ANNEXURE-I



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Affiliated to Andhra University)NH-16, Ethakota,Ravulapalem-533238, East Godavari District, Andhra Pradesh.Phone: 08855-255167, +91 9849387738

ETHICAL CLEARANCE CERTIFICATE

Project Title: ***EVALUATION OF AWARENESS IN IMMUNIZATION AND ITS BENEFITS IN CHILD BEARING MOTHERS IN KONASEEMA INSTITUTE OF MEDICAL SCIENCES (KIMS),AMALAPURAM***

Name of the Applicants: ***J.JYOTHI*, G.HIMAJA NAGALAKSHMI, M.SRIDHARANI, U.SIVA,Y.D.M.LOUIES***

Position in the institute: Pharm.D

Research Supervisor: Dr. P.Rajeswara Rao (M.Pharm, Ph.D.)

On behalf of Lydia College of Pharmacy, Ravulapalem, Institutional Ethics Committee (LYDP-IEC), I hereby give ethical approval in respect of the undertakings contained in theabovementioned project and research instrument(s). Should any other instruments he used, these require separate authorization. The Researcher may therefore commence with the research as tram the date of this certificate, using the reference number indicated above.

Please note that the LYDP-IEC must be, informed immediately of

- Any material change in the conditions or undertakings mentioned in the document
- Any material breaches of ethical undertakings or events that impact upon the ethicalconduct of the research.

The Research Supervisor must report to the LYDP-IEC in the prescribed format which isapplicable and everything related to the project, in respect of ethical compliance.

The LYDP-IEC retains the right to withdraw or amend this Ethical Clearance Certificate if.

- Regulatory changes of whatsoever nature required.
- The conditions contained in the certificate have not been adhered to
- Request access to any information or data at any time during the course or after
- completion of the project.
- Any unethical principles or practices are revealed or suspected.
- Relevant information has been withheld or misrepresented.

The Ethical Committee wishes you well in your research.

Yours Sincerely

Dr. P.Rajeswara Rao (M.Pharm Ph.D.)Principal

Lydia college of Pharmacy

ANNEXURE-II INFORMED CONSENT FORM:

Name of the child:

Name of the child bearing mother:

Child age:
Mother age:
Gender:
Hospital IP no.

Good morning/afternoon. My name is_____and I am working on a programme assessment EVALUATION OF AWARENESS IN IMMUNIZATION AND ITS BENEFITS IN CHILD BEARING MOTHERS . Our goal is to help improve the vaccination programme in general. I would like to respectfully ask for your help in answering the questionsin this survey.

I know you are busy, so we will interview you for only a few minutes. Your participation is completely voluntary and anonymous. Thank you very much.

Signature Of Mother/Caretaker: Signature Of The Clinical Pharmacist:

ANNEXURE III

DEPARTMENT OF PHARMACY PRACTICELYDIA COLLEGE OF PHARMACY

KONASEEMA INSTITUTE OF MEDICAL SCIENCESAMALAPURAM, ANDHRA PRADESH

''EVALUATION OF AWARENESS IN IMMUNIZATION AND ITS BENEFITS IN CHILD BEARING MOTHERS IN KONASEEMA INSTITUTE OF MEDICAL SCIENCES (KIMS), AMALAPURAM.''

DEMOGRAPHIC DATA1)NAME:

2) AGE A)17-27B)28-38C)39-49

3) EDUCATIONAL STATUS

A) Illiterate B)Primary C)Preparatory D)Secondary E)Higher F)Master Degree

4) EMPLOYMENT

A) Employed B)Unemployed

5) NO. OF CHILDREN

A) 0 B)1 C)2 D)>2

6) SOCIO ECONOMIC STATUS

A) Lower Class

B) Middle Class

C) Upper Class

7) RESIDENCY

A) UrbanB)Rural

8) PARITY OF RESPONDENTS

A) 1 Child

B) 2 Child

C) >2 Child

IMMUNIZATION ASSESSMENT QUESTIONNAIRE

1.Do you think immunization promote growth?

- Yes
- No
- Don't know

2.Do you think immunization prevents malnutrition?

- Yes
- No
- Don't know

3.Are you aware of free vaccines provided by Government?

- Yes
- No
- Don't know

4.Do anganwadi workers visit during the vaccination programmes of your child?

- Yes
- No
- Don't know

5.Do you feel that you know which vaccines you should get for your children?

- Yes
- No
- Don’t know

6.Do you feel you get enough information about vaccines and their safety?

- Yes
- No
- Don’t know

7.o you think that most parents like you have their children vaccinated with all therecommended vaccines?

- Yes
- No
- Don’t know

8.Do you believe that by vaccinating your child, others are protected as well?

- Yes
- No
- Don’t know

9.Can you tell me what a vaccine is? What does it do to the body?

- Yes
- No
- Don’t know

10. Do you think it is possible to have received too many vaccines at one time?

- Yes
- No
- Don’t know

11. Do you think vaccines overload the immune system?

- Yes
- No
- Don’t know

12. Do you feel that your healthcare provider cares about what is best for your child?

- Yes
- No
- Don’t know

13. Do you believe that vaccines are still needed when diseases are rare?

- Yes
- No
- Don’t know

14. Have you ever not accepted a vaccination for your child?

- Yes
- No
- Don’t know

15. Do you think vaccines are still needed even when the disease is no longer prevalent?

- Yes
- No
- Don’t know

an immunization record. If you did notreceive one, you can request one from your local health unit.

IMPORTANCE OFIMMUNIZATION:

Immunizations, also known as vaccinations, help protect you from getting an infectious disease. When you get vaccinated, you help protect others as well. Vaccines are very safe. It is much safer to get the vaccine than an infectious disease.

For more information on immunizations, including routine childhood immunizations, travel vaccinations and flu vaccinations, seeour Immunizations Health Feature and
the B.C. Immunization Schedules.

For information about vaccine safety,
visit ImmunizeBC. If your child was born inB.C., you should have received a Child Health Passport (PDF 415KB) that contains Vaccinations prevent you or your child from getting diseases for which there are often no medical treatments. These illnesses can result in serious complications and even death.

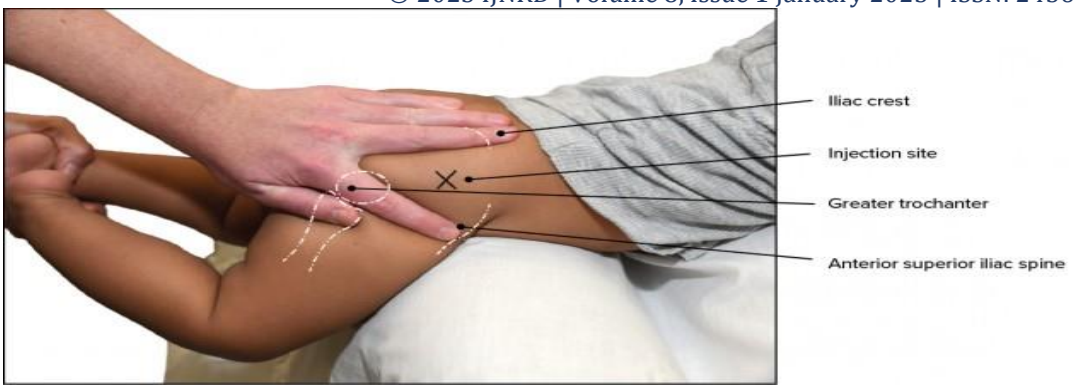
- A small number of people may be

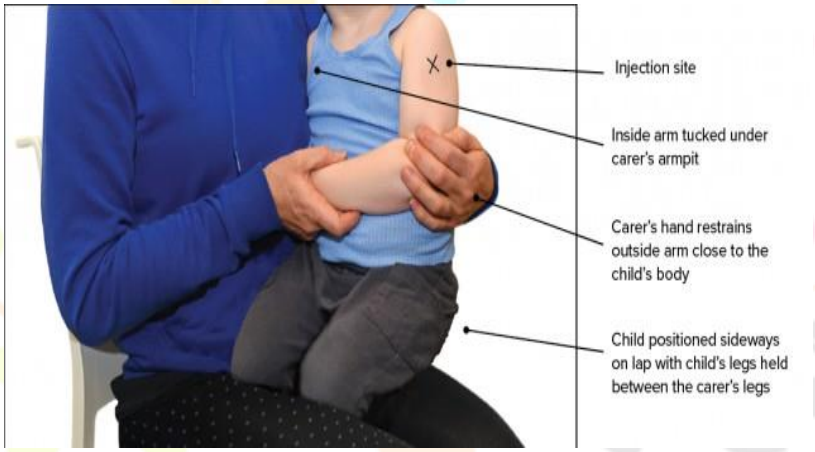
susceptible to diseases, such as those with impaired immune systems. These people may not be able to get vaccinations or may not develop immunity even after having been vaccinated. Their only protection againstcertain diseases is for others to get vaccinated so the illnesses are less common.

- If exposure to a disease occurs in a

community, there is little to no risk of anepidemic if people have been immunization.

VACCINE INJECTED POSITIONS





ROUTE OF ADMINISTRATION AND INJECTED SITES OF VACCINES:

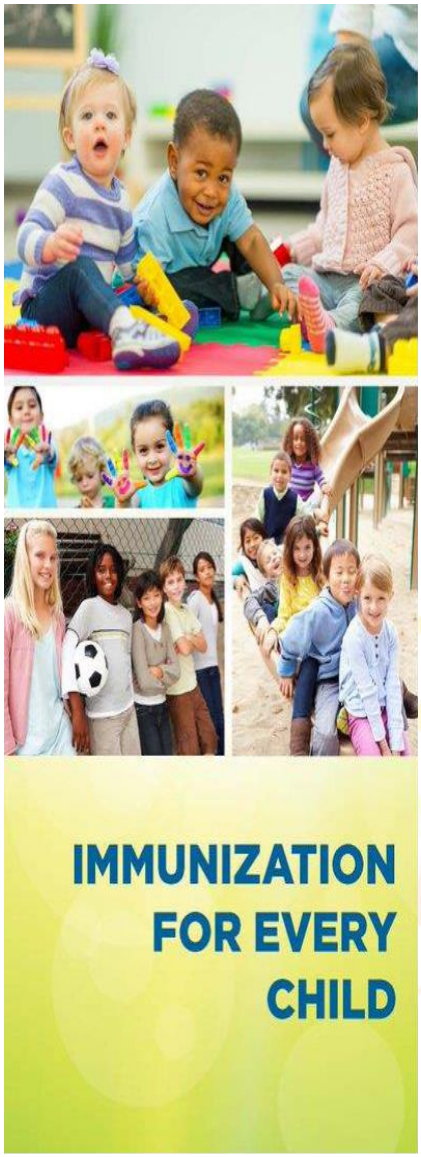
VACCINE	ROUTE OF ADMINISTRATION	
Opv and rotavirus vaccine	Oral	given by mouth
BCG	Intradermal	Outer upper right arm
Measles	Subcutaneous	Outer upper arm
Pentavalent(DPT-HepB-Hib)	Intramuscular	Outer left upper high
etanus toxoid (TT) for women of childbearing age	Intramuscular (IM)	Outer upper arm
Pneumococcal vaccine (PCV100)	Intramuscular	Outer right upper thigh

ADVANTAGES OF IMMUNIZATION:

- Induce humoral amd cellularresponse.
- Both MHC I and II presentation.
- Ability to poralize T cell help fortype 1 or 2.
- Immune response only to choosenantigens.
- Native structure of protein.
- Structure and posttranslational modiNication of antigens like natural infection.
- stability during storage and shipping.
- Simplicity of formulation and preparation.
- Fast to produce and modify.
- Safety without infective agent.
- Ease of development andproduction.
- Relatively inexpensive.

DISADVANTAGES OF IMMUNIZATION:

- Lower efficiency in large animals and humans than smallanimal models.
- Necessity for increasing response- enhances, chemical or physical modifications.
- Necessity for repeated or multiple doses.
- No mass application methods for animals.
- Lower immunogenicity thanactivated vaccine.
- Limited to protein antigens.
- Atypical posttransalationmodifications of bacterial and parasite antigens.
- (negligible) threat ofautoimmune reactions or integration if DNA into hostgenome.



What is immunization?

Immunization is the process where a child becomes protected against a disease by the introduction of a vaccine into the body. Immunization may also be called vaccination, needles or shots.

How does it work?

Vaccines cause your child's immune system to produce antibodies and form memory cells which prevent reinfection. For immunization to work best, children must have all their immunizations on time.

Are vaccines safe?

Vaccines used in Canada are very safe. They are developed with the highest standards and are continuously monitored and tested before being approved for use. Mild side effects, such as fever or redness at the injection site, may occur and last for a short time. Serious reactions are extremely rare.

Recommended vaccines for your child

The following vaccines are routinely recommended for children, from infancy to adolescence. These vaccines offer the best protection against preventable diseases. Parents are encouraged to contact their health care provider or local public health office to learn about the childhood immunization schedule for their province or territory.

ABOUT VACCINE SAFETYCOMMON QUESTIONS

Are vaccines safe for mychild?

Yes. Vaccines are safe. It can take 10 years or longer for a vaccine to be developed, tested, and finally approved by Health Canada. It takes this long to gather all the scientific information needed to make sure that a vaccine is safe and works well. But it doesn't stop there - even after a vaccine has been approved, its safety is closely monitored.

Can vaccines cause side effects?

Yes, sometimes. But vaccine side effects are usually
very mild, like soreness, redness, or swelling where the vaccine was given, or a mild fever. These side effects usually go.