

Status of immunization/vaccination in rural children between 0-5 years of age

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Abstract

Introduction: Immunization is the most cost effective public health intervention. In spite of great efforts by central government and state government and UNICEF the coverage of vaccination in child population is still poor due to various reasons. The main objective for this study is evaluate the children population who are vaccinated or not. **Methodology:** This is a retrospective study includes 200 children between 0-5years of age, based on the immunized and non immunized children forming the main groups, was conducted in the department of pediatric Bhaskar medical college. **The following parameters are assessed:** 1) Whether they followed the immunization schedule of essential vaccines. 2) Assessment of time schedule of the immunization. Whether the vaccination is given at scheduled intervals of time or any delay in their vaccination as per the immunization card or oral instruction by the mother. **Discussion:** The study involves 200 rural children of 0-5years of age. Out of which 122 are male and 78 are female children. they are divided into three groups, "completely immunized on time" "partially immunized" and "not immunized" immunized on time are 49%, Partially immunize are 50.5%, Not immunized are 0.5%. **Conclusions:** The results of vaccination both on time and delayed vaccination as follows OPV and BCG is well immunized and DPT normal doses are immunized but we can clearly see the negligence about the booster dose

Keywords: Vaccination, DPT, Oral polio Vaccine.

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INTRODUCTION

In Our country the economy is based on agricultural production and most of the people who live in rural areas are uneducated, hence they don't know the advantages of the vaccination and to prevent their children from vaccine preventable diseases. Most of the people because of their false beliefs and fear of side effects with vaccine, such as fever, pain, anorexia, vomiting, swelling, excessive crying don't come forward to vaccinate their children. Immunization is the most cost effective public health intervention. In spite of great efforts by central

government and state government and UNICEF the coverage of immunization/vaccination in child population is still poor due to various reasons. In India even today there is a great need for immunization of children below 5 years of age. Immunization protects children against harmful infections before they come into contact with them in the community. The Vaccine stimulates the body's immune system to recognize the agent as foreign, destroy it, and "remember" it, so that the immune system can more easily recognize and destroy any of these microorganisms that it later encounters.¹³ Children should receive the vaccinations they need at the right age during scheduled or drop-in clinic visits. Vaccinations can also be delivered in campaigns where vaccine teams try to vaccinate all eligible Children within a few days or weeks in the targeted area. UNICEF is the world's largest procurer of vaccines, supplying necessary vaccines to more than half of the world's children. In 2007 alone, the organization bought 3.2 billion doses. In 2008, UNICEF bought 2.6 billion doses.¹ Measles deaths have been reduced by 78% between 2000 and 2008.¹⁴ An estimated 19.3 million children were not reached with three doses of DTP vaccine in 2010. Those who are not immunized –

about every Fifth Child - are mostly among the poorest and the most vulnerable². In 1974, based on the emerging success of smallpox, the World Health Organization (WHO) established the Expanded Program on Immunization (EPI). Through the 1980s, UNICEF worked with WHO to achieve Universal Childhood Immunization of the six EPI vaccines (BCG, OPV, diphtheria, tetanus, pertussis, and measles), with the aim of immunizing 80% of all children by 1990. Progress has continued since then: by 2010, a record 109 million children were vaccinated and global immunization rates were at 85%, their highest level ever. Of the world's 19.3 million children not immunized with DTP3, 13.2 million (or 68%) live in 10 countries². So it is the responsibility of every educated person to educate the people around about importance of vaccination schedule and its advantages. Immunization contribute significantly to the achievement of the Millennium Development Goals (MDGs) by improving health, especially among children and contributing to poverty reduction and reducing child mortality by two thirds 1990 and 2015 (MDG 4), Immunization has saved over 20 million lives in the last two decades. More than 100 million infants are immunized each year, saving 2-3 million lives annually. Global mortality attributed to measles declined by 78 percent from an estimated 733,000 deaths in 2000, to 164,000 in 2008. The prevalence of polio has declined dramatically since 1988, from more than 350,000 cases to 1410 confirmed polio cases (including 1349 wild virus confirmed cases) in 2010. Only three countries remain endemic – Afghanistan, Nigeria and Pakistan – down from more than 125 countries in 1988.⁽⁹⁾ Immunization coverage against Hepatitis B (HepB) and Homophiles Influenza B (HiB) has been increasing since 1990 – more than 160 countries now include HepB and HiB into infant immunization schedules. Immunization services must be sustainable since over 100 million children are born every year and need to be immunized. In 2003, only 28% of developing countries reported that all districts had achieved over 80% coverage among infants with the basic three doses of DTP vaccine and in 2003, 27 million children not vaccinated DTP3(3). By the end of 2003, 134 out of 165 (81%) Developing countries and economies in transition had successfully introduced hepatitis B vaccine into their national immunization schedules and 63 (38%) had introduced Hib vaccine. The number of countries using Hep B vaccine has increased from 107 in 2000 to 179 in 2010 and for the Hib vaccine, has increased from 29 in 1997 to 166 in 2010¹¹. HBV causes 0.5–1.2 million deaths globally each year through chronic hepatitis, cirrhosis and hepatocellular carcinoma¹². In low-income countries, especially in sub-Saharan Africa, overall health services are desperately under-financed. In some

countries, basic health services receive less than US\$ 10 a year per capita – against a requirement of US\$ 30–40 a year per capita³. The WHO claimed that, in 2001, childhood vaccination prevented 61% of deaths from measles, 69% of tetanus deaths, 78% of pertussis deaths, 94% of diphtheria deaths and 98% of polio deaths.⁷ Estimated Routine Vaccination Coverage, 2009, the global DTP3 coverage in the 193 WHO member states increased from 74% in 2000 to 82% in 2009, reflecting the vaccination of 107.1 million infants with 3 doses of DTP vaccine in 2009 (14.6 million more than in 2000).

OBJECTIVES

1. To evaluate the children population who are vaccinated and to educate the parents about the importance of vaccination including booster dose.
2. To know how many children and their families have been immunized to all vaccinations and number of children could not follow the complete schedule of immunization.

METHODOLOGY

This is a retrospective study. includes 200 children between 0-5years of age, based on the immunized and non immunized children forming the main groups, was conducted in the department of pediatric Bhaskar medical college

The following parameters are assessed

1. Whether they followed the immunization schedule of essential vaccines.
2. Assessment of time schedule of the immunization. Whether the vaccination is given at scheduled intervals of time or any delay in their vaccination as per the immunization card or oral instruction by the mother.

Inclusions Criteria

- *Age 0-5years children
- *Gender-male and female.
- *All those immunized children.
- *Child who born by institutional/home delivery.

Exclusion Criteria

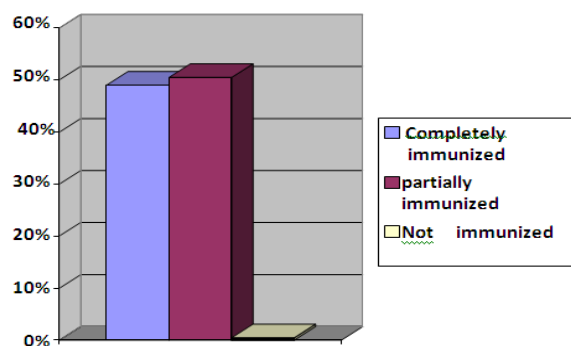
- *Children above 5year
- *Children with chronic illness like cerebral palsy and immunodeficient
- *Children who dropped out due to vaccine related complications.

RESULTS

No of individuals immunized according to schedule

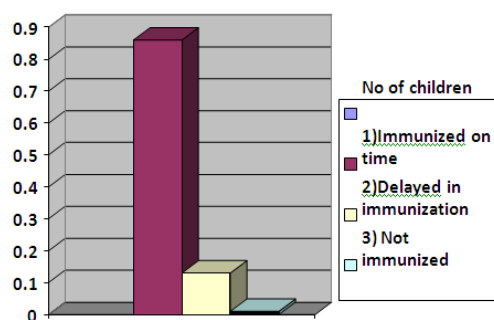
Completely immunized	49%
Partially immunized	50.5%
Not immunized	0.5%

P value-on statistic analysis the probability value is <0.05



BCG vaccination

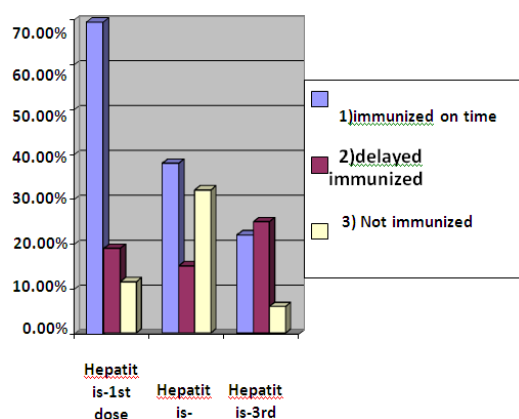
No of children	
Immunized on time	86%
Delayed in immunization	13%
Not immunized	1%



P value-on statistic analysis the probability value is <0.05

Hepatitis vaccination

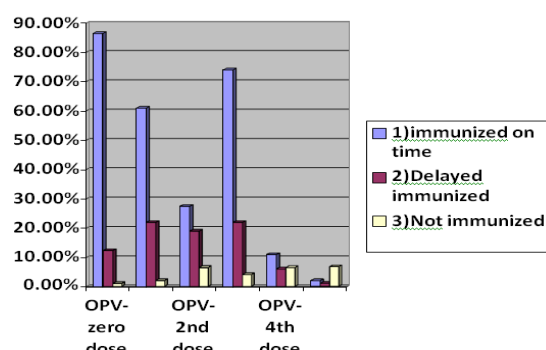
No of children	Hepatitis-1 st dose	Hepatitis-2 nd dose	Hepatitis-3 rd dose
Immunized on time	69.5%	38%	22%
Delayed immunized	19%	15%	25%
Not immunized	11.5%	32%	6%



P value-on statistic analysis the probability value is <0.05

Oral polio vaccination

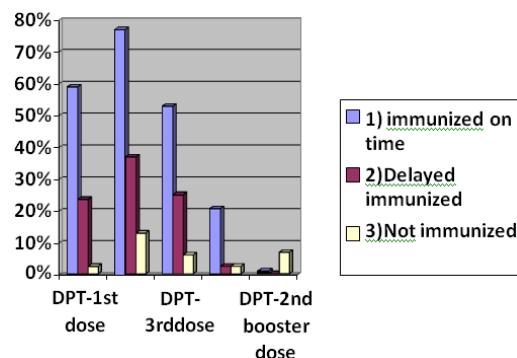
No of children	OPV-zero dose	OPV-1 st dose	OPV-2 nd dose	OPV-3 rd dose	OPV-4 th dose	OPV-4 th dose
Immunized on time	86.5%	61%	27.5%	74%	11%	2%
Delayed immunized	12.5%	22%	19%	22%	6%	1%
Not immunized	1%	2%	6.5%	4%	6.5%	7%



P value-on statistic analysis the probability value is <0.05

DPT-[Diphtheria, Tetanus, Pertussis]

No. of children	DPT-1 st dose	DPT-2 nd dose	DPT-3 rd dose	DPT-1 st booster	DPT-2 nd booster dose
Immunized on time	59%	77%	53%	21%	1%
Delayed immunized	23.5%	37%	25%	2.5%	0%
Not immunized	2.5%	13%	6%	2.5%	7%



P value-on statistic analysis the probability value is <0.05

Measles

No. of children	35.9%
Immunized on time	38%
Delayed immunized	26%
Not immunized	

P value on statical analysis the probability val is <0.05

DISCUSSION

The study involves 200 rural children of 0-5 years of age, out of which 122 are male and 78 are female children. They are divided into three groups, "completely immunized on time" "partially immunized" and "not immunized" immunized on time are 49%, Partially immunized are 50.5%, Not immunized are 0.5%.

BCG: at birth- 86%, delayed immunized above one month 12.5%, Not immunized 1%. Both on time and delayed 98.5%. It is more than the 87% in India and less than the 95% in Pakistan as per the "immunization summary by UNICEF-2010"¹⁸

OPV: Zero dose immunized on time 86.5%, delayed 12.5%, not immunized 1%. Both on time and delayed is 99%. 1st dose on time 61%, delayed 22%, and not immunized 2%. 2nd dose on time 27.5%, delayed 19%, and not immunized 6.5%. 3rd dose on time 74%, delayed 22%, and not immunized 4%. 4th dose on time 11%, delayed 6%, and not immunized 6.5%. 5th dose on time 2%, delayed 1%, not immunized 7%. Total children immunized on time and delayed is 96%, which is less when compared to the 98% in India, 98% in United Kingdom, and less when compared to the 88% in Pakistan, 67% in South Africa as per the http://www.childinfo.org/files/immunization_summary_en.pdf, 2010¹⁸

DPT: 1st dose given on time 59%, delayed is 23.5%, not immunized are 2.5%. Both on time and delayed are 82.5%, which is less when compared to 83% in India, 98% in United Kingdom, 90% in Pakistan. But more than 73% in South Africa as per the immunization summary by UNICEF 2010¹⁸. 2nd dose given on time is 77%, Delayed 37%, not immunized, 13%. 3rd dose given on time 53%, delayed immunization is 25%, not immunized is 13%. Both on time and delayed are 78%, which is more when compared to 72% in India, 63% in South Africa, but less when compared to the 96% United Kingdom, 88% in Pakistan. As per the immunization summary by UNICEF 2010¹⁸. 1st booster given on time 21%, delayed is 2.5%, not immunized 2.5%. Both on time and delayed are 23.5%. This result indicates that as the age of the child advances above 1 year, parents don't vaccinate their child. So it is very important to make awareness among parents about the importance of booster dose. 2nd booster on time 1%, delayed immunized is 0%, not immunized is 7%.

Hepatitis: 1st dose up to 6 weeks is 69.5%. The above 6 weeks 19%, Not immunized is 11.5%. 2nd dose, 6 to 14 weeks are 38%, are delayed immunized 15%, not immunized are 32%. 3rd dose, completely immunized is 22%, delayed 25%, not immunized 6%.

Measles: vaccine given on time is 35.9%, delayed 38%, and Not vaccinated 26.5%, both on time and delayed are 73.9%. Measles deaths are clustered primarily in India,

which accounts for three-quarters of global measles deaths. The introduction of a second dose of measles-containing vaccine (MCV2) in India in 2010 through campaigns or routine services is an important step in reducing global measles mortality.¹⁶ Assessment of the present study by survey may help us to evaluate the real percentage of child population underwent immunization or not and to take the necessary steps to impart education to those parents about the importance of immunization and its proper follow up.

CONCLUSIONS

The results of vaccination both on time and delayed vaccination as follows OPV and BCG is well immunized and DPT normal doses are immunized but we can clearly see the negligence about the booster dose of DPTB1-23% AND B2-2%, similarly in hepatitis as the time passed parents take less interest in immunizing a child. Measles which is given at 9 months is 77% which is very less coverage.

LIMITATION

1. The study was conducted in rural area it is not compared with the urban child population.
2. The study is done in hospital and door to door survey is not done.

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