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Factors affecting immunization in Bihar

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Abstract:

Immunization is most effective way to prevent of vaccine-preventable disease. The vaccination of children against six serious but preventable diseases (tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis, and measles) has been a cornerstone of the child health care system in India. These diseases are communicable disease and epidemic across the country. In the immunization programme vaccination has been playing vital role to control these diseases and still the awareness of these vaccine-preventable diseases is not substantial across India but poliomyelitis is almost end. In this paper an attempt has been made to explore the socio-economic, ritual effects and educational background respondents and the major bottlenecks of immunization programme. Immunization drop out is the severe problem in the effective implementation of immunization programme in India.

Keywords: Immunization, Vaccine, disease and programme

1. Introduction:

In jurisprudence immunity means exemption of freedom from personal liability. In many countries of fudge, legislators and government officials including heads of the state enjoy limited or absolute immunity at home to protect them from personal liability for wrongful acts or omissions that arise from the performance of their duties. Under international treaty a diplomatic representative is exempt from local laws either civil or criminal. But in medical science the term implies a condition under which an individual is protected from infectious diseases.

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Immunization is actually a preventive measure. It prepares the body to fight against infection. It is a common experience that immunized population develop more resistance to infectious diseases while non-immunized population is too vulnerable to cope with fatality or mortality caused by dreadful infectious pathogens.

Immunity of diseases is generally of 2 types- (a) Innate Immunity i.e. in born capacity for resisting diseases. It belongs at birth and depends upon genetic make-up of an individual or a race. As for example, species and racial immunity. In contrast, Acquired immunity begins after birth. It depends on the presence of antibodies and other factors originating from the immune system. Immunization is operated through injections, oral drops or scratches on the skin; the body is exposed to attenuated/ inactivated or killed disease–producing–micro-organisms or to toxins. They produce specific antibodies or antitoxins for immediate elimination of pathogens/antigens. Once the body has been exposed to an infection, the immune system will recognize if same pathogen enters into body for the recurrence of the disease.

Genesis of Immunization in India:

The vaccination of children against six serious but preventable diseases (tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis, and measles) has been a cornerstone of the child health care system in India. As part of the National Health Policy, the National Immunization Programme is being implemented on a priority basis. The Expanded Programme on Immunization (EPI) was initiated by the Government of India in 1978 with the objective of reducing morbidity, mortality, and disabilities from these six diseases by making free vaccination services easily available to all eligible children. Immunization against poliomyelitis was introduced in 1979-80, and tetanus toxoid for school children was added in 1980-81. Immunization against tuberculosis (BCG) was brought under the EPI in 1981-82. The latest addition to the Programme was vaccination against measles in 1985 – 86 (Ministry of Health and Family Welfare, 1991).

The Universal Immunization Programme (UIP) was introduced in 1985-86 with the following objectives: to cover at least 85.0 per cent of all infants against the six vaccine preventable diseases by 1990 and to achieve self sufficiency in vaccine production and the manufacture of cold-chain equipment (Ministry of Health and

Family Welfare, 1991). This scheme has been introduced in every district of country, and the target now is to achieve 100 per cent immunization coverage. Pulse Polio Immunization Campaigns began in December 1995 as part of a major national effort to eliminate polio. The standard immunization schedule developed for the child immunization programme specifies the age at which each vaccine is to be administered, the number of doses to be given and the route of vaccination (intramuscular, oral, or subcutaneous). Vaccination received by infants and children are usually recorded on a vaccination card that is issued for the child

Vaccination: An Important Medical Intervention:

Vaccination is the most important medical intervention to prevent disease. Not only are immunized individuals themselves protected from developing a potentially serious illness, but also, if enough of the population is immunized, transmission of the disease in a community may be interrupted. (Hinman,1988).

This indirect, so called hired immunity provides protection even to those who are not themselves immunized. Vaccines have been developed, and more are currently being developed, to protect children and adults from a number of potentially serious diseases. Failure to achieve adequate and timely rates of immunization among young children with available vaccines risks outbreaks of serious diseases with a resulting increase in unnecessary death and disability.

In essence, a vaccine provides a controlled exposure to a disease as a way of priming the body's natural defence against infection. Traditionally, vaccines have consisted of components of disease causing organisms which have been treated to reduce their virulence. Frequently, multiple doses of vaccine are necessary to gradually build up the body's defences against future infection while minimizing the body's defences against future infection while minimizing the possibility of adverse effects from the vaccine itself. Also, as immunity may wane with the passage of time, so called booster doses of the vaccine may be necessary to sustain protection.

To date, vaccines have been developed to protect young children from a number of infectious diseases including, but not limited to diptheria, tetanus, and pertusis or whooping cough (DPT vaccine); measles, mumps, and rubella or Garman measles (MMR vaccine); Polio (OPV); hepatitis B (HBV vaccine); and Haemophilus influenzal type to (Hib vaccine) (Peter, G. 1992).

Recommendation for use of a vaccine depends on balancing the benefits and risks of vaccination with the risks of disease. Recommendations must be reassessed periodically. For example, children are no longer vaccinated against small pox because small pox was eradicated by the late 1970s.

Recommended Immunizations:

Recommendations regarding the routine immunization of healthy infants and children have traditionally been developed and promulgated by the committee on Infectious Diseases (CID) of the American Academy of Paediatrics (AAP) and by the Advisory Committee on Immunization Practices (ACIP) of the U.S. Centres for Disease Control (CDC) and Prevention (Hinman, A.R. 1988).

Although effort is expended to ensure that recommendations from these two bodies are not discrepant, their recommendations do not always agree. Unfortunately, immunization recommendations are complex and can be confusing to health professionals and parents alike. In part, problems arise because multiple doses of disease – specific vaccines and thus multiple interactions with providers are required to achieve adequate levels of immunity. Also, vaccines are not all given on the same schedule, and recommendations change primarily because of the availability of new vaccines and new criteria for vaccination (Peter, G. Childhood, 1992).

There are also alternative recommendations for children at high risk for specific diseases such as those who are HIV positive or immune compromised, for children beginning immunization at or after 15 months but before 7 years of age, and for those beginning immunization after 7 years of age (primarily new immigrants) (AAP, 1991). There have been several recent important changes in the childhood immunization schedule. (Hinman, A.R. 1988). In response to measles Outbreaks among older children in the mid-1980s, it is now recommended that children be re immunized against measles either at school entry (age 5 to 6 years) or at entry into middle or junior high school (age 11 to 12 years). Because of the continuing occurrence of hepatitis B among adults despite the availability since 1982 of an effective and safe vaccine, universal childhood immunizations against hepatitis B with HBV vaccine are now recommended. These are however two alternative schedules recommended for HBV vaccination : (1) at birth, 1 to 2 months and 6 to 18 months; or (2) at 1 to 2 months, 4 months, and 6 to 18 months. In early October

1993, the ACIP revised its recommended childhood immunization schedule for OPV and MMR vaccinations. The committee recommended that the third dose of OPV be administered at 6 months rather than 15 months of age. This change simplifies the immunization schedule because OPV can now be given to infants on the same schedule as DDT and Hib vaccines. In addition, the recommendation regarding the first dose of MMR was liberalized to 12 to 15 months of age from 15 months to allow more "flexibility" in timely the delivery of this vaccine (U.S. DHHS, 193).

The situation with regards to immunization for Haemophilus type to disvaccine that combines Hib vaccine with DPT is currently licensed in the United State (Committee of Infections, Disease 1993). Current recommendation are that Hib immunization begin at 2 months of age in a schedule of three or four immunization with completion by 12 to 15 months of age depending on which vaccine is given. Confusion over the administration of Hib vaccine may arise because parents and providers may not know on subsequent visits which product and schedule the child began wit. Recently published recommendations from the CID attempt to minimize confusion by providing detailed protocols for children of different ages, for the different vaccines, and for the possible combinations of different vaccines.

The new combined vaccine, tetramune, that protects infants against diphtheria, tetanus, and pertussis (whooping cough) as well as Haemophilus influenzae type b, is to be administered in the form of shots at 2, 4, 6 and 15 months of age. Combined vaccines (such as DPT and MMR) reduce the number of shots infants receive and simplify the immunization schedule. Accordingly, the new four-in-one vaccine should improve immunization rates, but it may be a while before it is possible to evaluate the utility of this new vaccine.

Because recommendation with regard to immunization to young children for Haemophilus influenzae type b and hepatitis B virus infections are very recent, the adequacy of the vaccination status of preschool-age children has historically been measured by the rate at which these children have been adequately immunized for diphtheria, tetanus, pertussis (whooping cough), polio, measles, mumps, and rubella (German measles).

2. Objectives of the Study:

The main objectives of the study are as follows

- To know socio economic background of the respondents regarding immunization programme.
- To know the major immunization programme and its usages and problems.
- To know the bottlenecks of immunization programme in Bihar.

3. Methodology and Data:

The present study attempts to diagnose the national Health security in the form of immunization in the rural Bihar especially two blocks of two different districts. The study clarifies the effectiveness of immunization programme. Two village near two different district headquarters has been selected for the purpose of analysis. It prepares a profile of the current immunization programme, socioeconomic background of the beneficiaries' awareness regarding the immunization programme, and different major immunization programmes available in the villages of north Bihar. The paper also tries to establish the bottlenecks prevailing in the implementation of immunization programme. In addition to that an attempt has been made to establish the effectiveness of immunization programme as far as proximity to the headquarters is concerned. The primary data required for the study has been collected on the basis of interview-schedule on proposed research area.The sample size of the study is 200 and accordingly respondents from two villages of both districts of Darbhanga (Ganauli village) and Madhubani (Pandaul west village) has been selected.

4. Review of literature:

Salim (2012) in his research work has argued that vaccination programmes are rife with political social and religious symbolism and how fears of national and religious autonomy prevent people from getting their children vaccinated. Therefore, here it is explicitly understand that social and religious are main hindrance in the availing the vaccination programme in India and it effect at large extent especially in village area.

Piter says that vaccination programmes are not static. Vaccination programme change in at least three ways all of which imply a process of contextualisation and

adaptation of formal program rules to local socio-cultural condition. First, changes occur formally through an active policy of public health authorities. Second, changes occur as a result of permeation of programme schedules and procedures by the cultural and social influences in the local environment. Third, the culture and structure of the health services themselves interfere with implementation of plans and thus affect chances of target achievement.

Das *et al*. (2002), in their research paper explained about the implementation of immunization programme and argued that immunization of children requires contact with PHC on the part of mother at least five times during the first year of the child life.

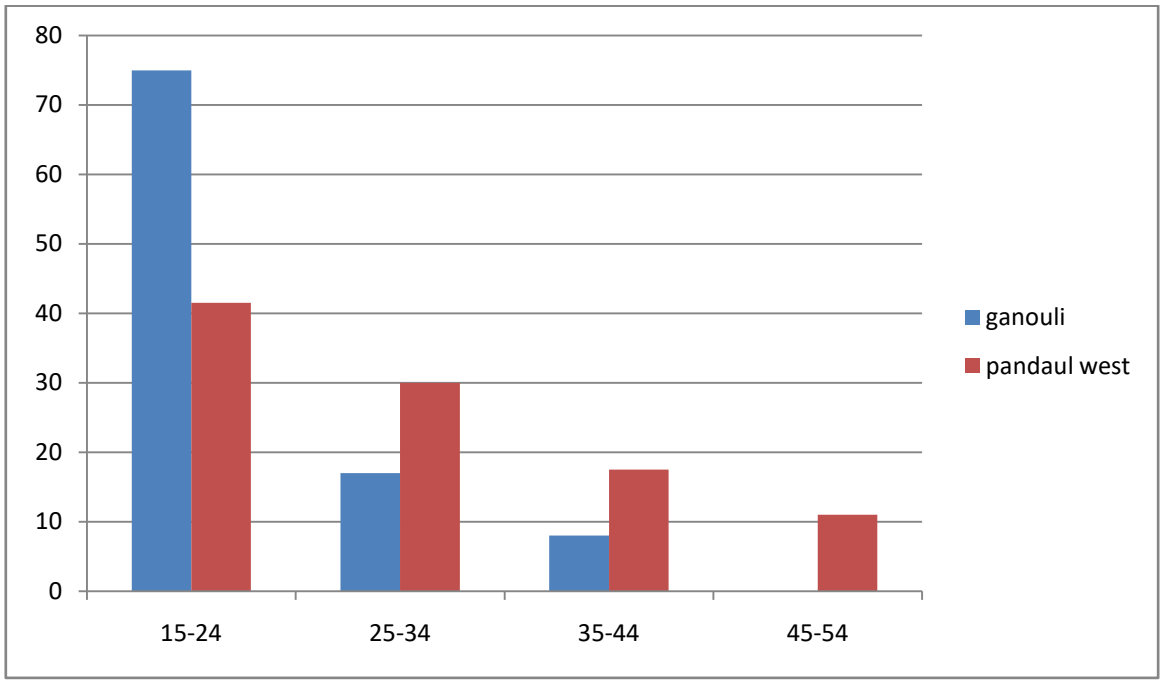
Pieter *et al*. (1999) elucidates the meaning of policy makers, health workers and parents attach vaccination acceptance and refusal in the context of Bangladesh, Ethopia, India, Malawi the Netherland and Philippince.

Sharma(2007) has done work on the status and performance during 1980-2004 of the child immunization programme in India, UP and Uttrakhand. He found in his research that almost every other child in uttrakhand and UP is incompletely protected and one out every of three children is dropout from the immunization programme.

5. Analysis and Research Findings:

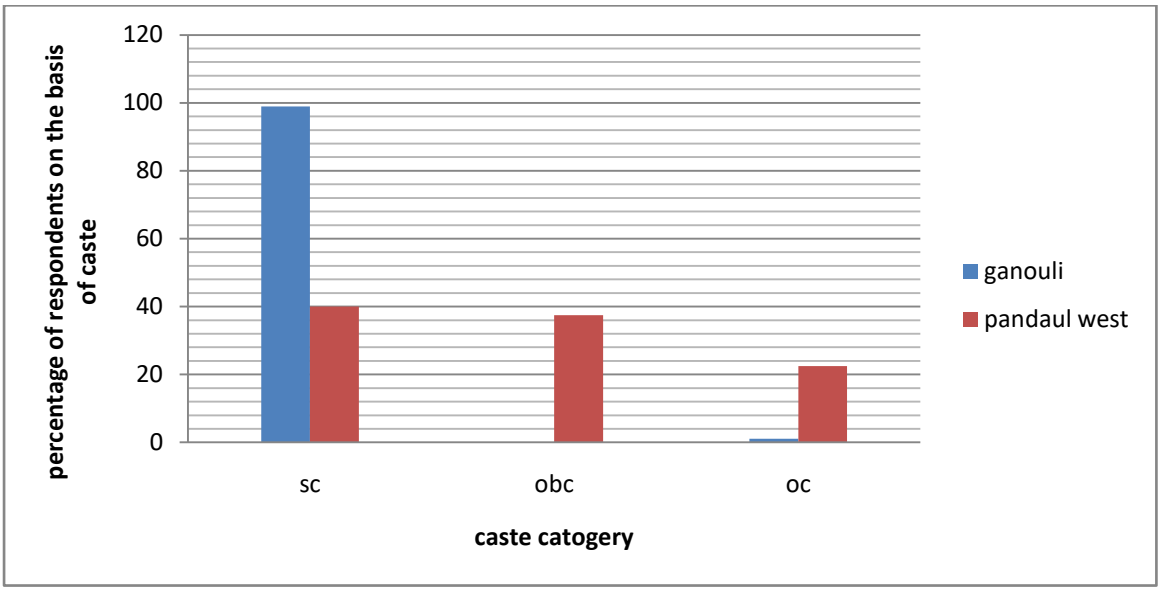
The findings of the research work are reported below. Simple statistical tools like tables, graphs etc. has been used for the purpose of analysis.

Graph 5.1:Distribution of the respondents on the basis of age



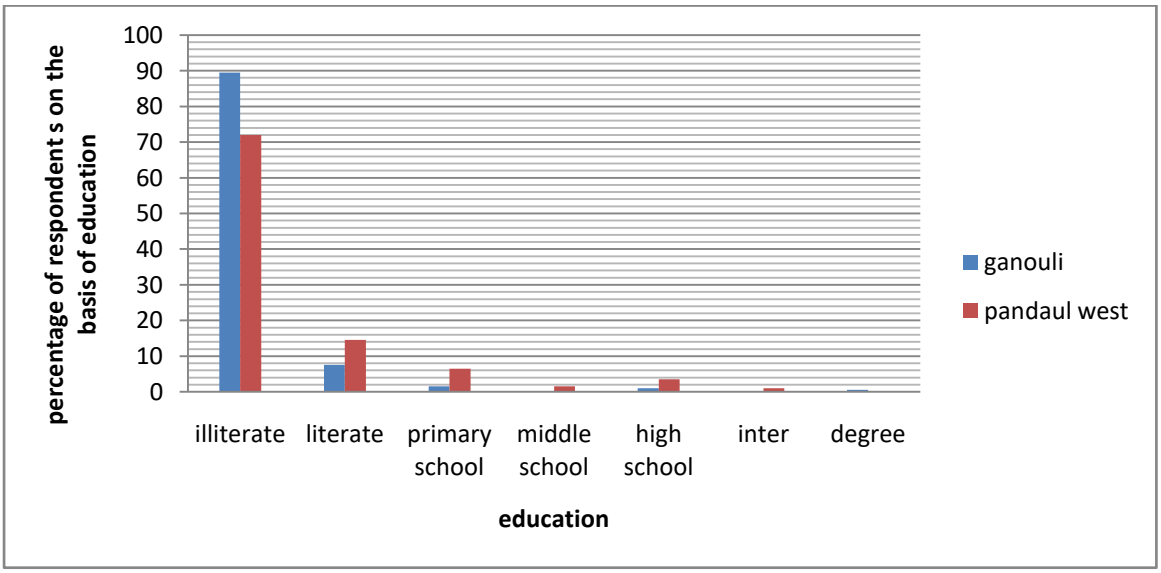
Graph 5.1 shows the distribution of respondents on the basis of age and here age group has been classified into four categories such as 15-24,25-34,35-44,45-54 in both district Darbhanga(Ganouli) and Madhubani (Pandaul west). The number of respondents of age group from 15-24,25-34,35-44,45-54 are 150,34,16 and 00 in district Darbhanga(Ganauli) and percentage are 75%,17%,8.0% and 00% respectively. Similarly, the number of respondents of age group from15-24,25-34,35-44,45-54 are 83,60,35 and 22 in district Madhubani(Pandaul west) respectively and the their percentage are 41.5%,30%,17.0% and 11.0% respectively. It is clearly depicted from the graph that majority of the respondents in both the districts belong to the age group .One interesting observation found is that these age group are almost married and they have children. The age group from 15-24 are not matured so they don't know adequate about benefit of immunization programme and they are mostly uneducated persons.

Graph 5.2: Percentage distribution of respondents on the basis of their caste



Graph 5.2 shows the percentage distribution of respondents of Darbhanga (ganouli) and Madhubani (Pandaul West) according to their caste. The number and percentage of respondents of SCs are highest in both district of Darbhanga (Ganauli) and Madhubani (Pandaul west).Their number and percentage of Darbhanga (Ganauli) and Madhubani (Pandaul West) are 198 and 99% and 80 and 40% respectively.

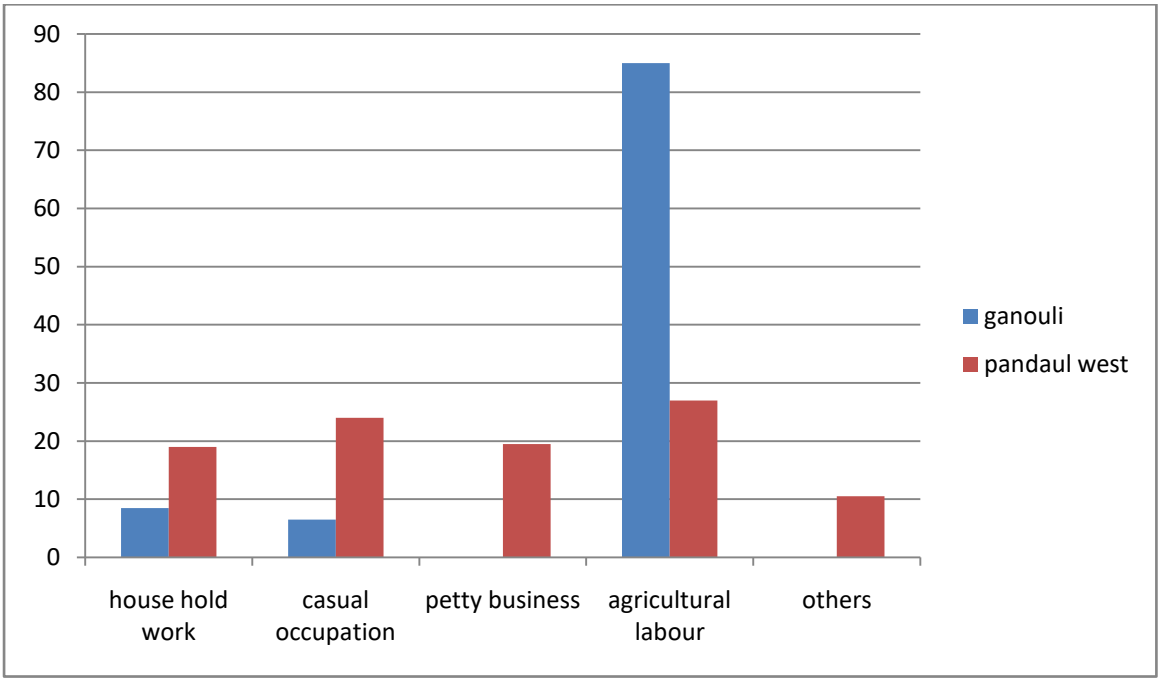
Graph 5.3: Percentage distribution of respondents on the basis of their educational attainment



Graph 5.3 represents the educational status of the respondents of both district of Darbhanga(Ganauli) and Madhubani(Pandaul West). It has been found that majority of the

respondents are illiterate in both the districts and their percentages are 89.5 percentage ,and 72 percentage respectively. The situation of literacy is not satisfactory in both district. The success of immunization programme mainly depends upon the educational background in village area because the educated people know reality and importance of immunization programme and they are easily convinced by the ANM staff and Para medical staff.

Graph 5.4: percentage distribution of respondents on the basis of their occupation



Graph 5.4 portrays the occupational status of the respondents in both districts. The respondents of both the districts are engaged mainly in agriculture and household activitiesk and it comes under informal sector and its economic value is very low in comparison to other formal works. 85.0% and 27% of respondents from Darbhanga (Ganouli) and Madhubani (Pandaul West) engaged as an agricultural labourer respectively and their income are not substantial for leading a healthy life and they have been facing manifold economic and health problems in their life. But to some extent the situation of Madhubani (Pandaul West) is better than Darbhanga due to engaging in other works such as casual occupation, petty business and other occupations. Because these other works add economic value and it helps in their livelihood for running substantial life.

Reasons	Darbhanga		Madhubani	
	No. of respondents	Percentage	No. of respondent	Percentage
Lack of consciousness and not knowledge of benefit of immunization	35	17.5	33	16.5
Location and lack of time	16	8.0	14	7.0
Rumours about immunization	13	6.5	15	7.5
No proper believe in immunization	10	5.0	11	5.5
Lack of medical staffs	16	8.0	13	6.5
Rituals effect	39	19.5	33	16.5
Long duration time	8	4.0	7	3.5

Table 5.1: Cause of not availing immunization programme in Bihar

Source: Household Survey, January 2013

Table 5.1 portrays the different reasons for not availing immunization programme in Bihar (Darbhanga and Madhubani).Lack of consciousness and not adequate knowledge of benefit of immunization, location and lack of time, rumors about immunization, no believe in immunization, lack of medical staffs, rituals effect and long duration are the main reason due to which immunization is not take placing. Respondents from Darbhanga district have admitted that lack of consciousness and not knowledge of benefit of immunization, location and lack of time(17.5%), rumors about immunization (6.5%)and not proper believe in immunization(5.0%) are the major reasons of not availing immunization programme respectively. Similarly lack of medical staffs (8.0%), rituals effect (19.5%) and long duration time of immunization (4.0%) also plays major role for drop out immunization programme in district Darbhanga(Ganauli). On the other hand in Madhubani district almost same situation is found and lack of consciousness and not knowledge of benefit of immunization(16.5%), location and lack of time(7.0%), rumors about immunization(7.5%) and not proper believe in immunization(5.5%) are the major reason of not acceptance of immunization programme. Lack of medical staffs (6.5%), rituals effect (16.5%) and long duration of

immunization(3.5%) are the reasons for not taking immunization programme in district Madhubani(Pandaul West).

6. Conclusion:

The main hindrances of immunization programmes are ritual, education and lack of adequate knowledge of benefit of immunization programmes in district of Darbhanga and Madhubani of Bihar. Economic status and occupation also plays vital role in immunization programme that is run by the assistance of ministry of health and family welfare programme.ANM ,ASHA ,AWW and Sahayika are working tremendously in immunization programme across India and specially Bihar. The location and time of immunization are key factor to taking immunization because the people who reside in village area and they are engaged in their agricultural works so when immunization programmes are taken place .They are basically absent so they could not immunize their children at immunization centre on right time.

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