ORIGINAL RESEARCH PAPER

Volume-7 | Issue-11 | November-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

EVALUATION OF CHILD SURVIVAL AND SAFE MOTHERHOOD PROGRAM IN KANCHEEPURAM DISTRICT, TAMIL NADU

Community Medicine

Dr. Ranjit K. Jha* Professor and Head, Department of Community Medicine, JNUIMSRC, Jaipur, Rajasthan-302017 Formerly-Associate Professor S.R.M. Medical College Hospital and Research Centre(SRMMCH & RC), Kattankulathur, Kancheepuram District Tamil Nadu-603203 *Corresponding Author

Dr. Manish M. Rana M.D. Community Medicine, GMERS Medical College, Shola, Ahmadabad

Dr. D. Kuberan M.D. Community Medicine, ESICMedical College and PGIMSR, Chennai

Dr. Nitin Tiwari M.D. Community Medicine, JNUIMSRC, Jaipur, Rajasthan

ABSTRACT

This study was planned to evaluate the Maternal & Child Health services, particularly immunization in rural areas of the Tamil Nadu.

A community-based, cross-sectional survey using the WHO 30 cluster technique was carried out in rural areas of Tamil Nadu. The information collected was analyzed manually.

Nearly three fourth (71.9%) of the children were fully immunized with 1 Dose of B.C.G., 3 Doses of D.P.T. & O.P.V. and 1 Dose of Measles Vaccines. Nearly all the children (99.52%) were given B.C.G. vaccine. More than three fourth of the children were immunized against Measles. The main reasons for drop-out or no immunization were "lack of information about the immunization program" (76.27 %) main contributing factor being Invalid Immunization (55.93 %).

The problem of Below target coverage of immunization could be overcome by taking up capacity building exercise for health care professional involved in Immunization services and creating awareness about the program and relevance of 2nd and 3rd doses of DPT and Polio vaccines amongst the community. Increasing community participation through sustained and focused Information Education Communication campaign should also be undertaken.

KEYWORDS

30 cluster technique, Service coverage evaluation; Survey;

INTRODUCTION

Approximately 46% of all deaths in low-income countries are due to communicable[1] Diseases . Despite the availability of safe and effective vaccines against these diseases in the last 3 to 4 decades, diseases like measles and tetanus continue to be a major cause of mortality and morbidity, especially among young children in most of the developing countri es like India. Universal Measles immunization coverage is one of the activities targeted in order to reduce child mortality by two-thirds by all the 191 United Nations Member States as one of[2] the eight UN Millennium Development Goals (MDG). As of now, Measles, Pertussis and Tetanus are the leading causes of DALYs (Disability adjusted life years) among Childhood diseases[3]. As per WHO estimates, in 1998, approximately 30 million cases and 8,88,000 deaths occurred worldwide due to measles, of which 85% occurred in South East Asia and[4] Africa regions. Diphtheria also has the potential to cause outbreaks especially in countries with very low reported levels of vaccination coverage.[5]

Following the success in eradication of Small Pox through vaccination, India initiated immunization programme in 1978 under the banner of Expanded Programme of Immunization (EPI), with the objective to reduce morbidity and mortality due to five Vaccine Preventable diseases which are Diphtheria, Pertussis, Tetanus, Polio and Tuberculosis. Immunization against Measles was added under Universal Immunization Programme (UIP). The aim of UIP is (*i*) to give the full course of DPT, OPV, BCG and Measles vaccines before the first birthday to all children and (*ii*) to give 2 doses of tetanus toxoid to all pregnant women throughout the country. These services were made part of primary health care through the existing health care infrastructure. During 1992, this program was integrated with National Child Survival and Safe Motherhood (CSSM) program.

Following the International Conference for Population and Development (ICPD) held at Cairo, a paradigm shift was brought about and "Reproductive and Child Health Programme" was launched in October, 1997. In the past decade and half, all the districts in the country have been covered under the Universal Immunization Programme. However, providing immunization, by itself, does not guarantee a reduction in disease morbidity and mortality. The full course of vaccines must be given at the right age and the vaccines must be potent.

Vaccination activity should not be an end in itself but lead to development of immunity against diseases. Coverage should be the driving force behind district, national, regional and global child survival programmes. Only by paying close attention to whether mothers and children receive interventions can we decipher whether the delivery methods are effective and equitable, and whether mortality reductions are likely to occur. Public accountability at all levels can bring delivery bottlenecks to the attention of all, and encourage rapid action to address them. [6]

The accurate measurement of vaccination coverage and maternal care, antenatal and during delivery, are essential steps in determining the successful implementation of the maternal and child health programme. This can be performed with the help of a coverag e evaluation survey, in field. Keeping this in view, a community-based, cross-sectional survey,[7] using the WHO 30 cluster sampling technique , was carried out as a teaching learning exercise by Interns posted in Community Medicine Department. The study was aimed to estimate the immunization coverage of DPT, OPV, BCG and Measles amongst children of 12 – 23 months of age and to know the reasons of immunization failure. It also aimed to estimate the immunization coverage of Tetanus toxoid and the status of antenatal care and delivery practices of mothers of infants.

METHODOLOGY

A Survey was conducted in rural area of Kattankulathur Panchayat Union (Kancheepuram District) Tamil Nadu, amongst children, 12–23 months of age, and mothers of children (0–11 months of age) from 5 - 9 April, 2010. Sampling Technique used was Standard WHO-30 cluster sampling; and Sample Size was 211 mothers and 210 children. Total rural population of Kattankulathur Rural Panchayat Union is 1,39,759. The sampling interval determined was 4,659. The first random number selected was 3836. 211 mothers, and 210 children were selected from these 30 clusters (7 per cluster for each i.e. 7 mother s of children in age group 0 -11 months and children of 12 – 23 months of age).

A standard WHO pre-designed schedule available for evaluation of immunization coverage was reviewed and adapted. The schedule was pre-tested in the classroom by role- play method. 8 Interns assisted by Field staff of the Community Medicine Department constituted the

survey team and it was supervised by the faculty of The Community Medicine Department. Briefing for the survey team was done from 30th March to 3rd April 2010. The briefing session consisted of schedule's review and Role-Play in the classroom. Guidelines were given to the survey teams.

DATA COLLECTION IN THE FIELD

Survey was carried out in 30 clusters of rural area of Kattankulathur Panchayat Union (Kancheepuram District) by four teams (each team comprised of 2 Interns and one Field (paramedical) staff from the Department of Community Medicine. Information as per pre- tested schedule was collected by interviewing mother of children below two years. House-to- house visits were made in each of these clusters until seven mothers of children less than one year of age and seven children in 12 -23 months age groups were found. The selection of the first house was done randomly and subsequent houses were selected by going to the next nearest house.

Immunization status of children (12-23 months), source of immunization and reasons for failure to initiate or complete immunization schedule were ascertained. Wherever possible, the dates of immunization were determined by immunization cards. For those who did not have cards, the month and year of immunization were recorded only if convincing "verbal history" was given. Whether immunization was done at the right age was determined from dates of immunization and birth dates. First DPT before 6 weeks and Measles immunization at less than 9 months of age were considered invalid immunizations. Question on immunization status (Tetanus-toxoid), antenatal care received, place of delivery and person who conducted the delivery were asked from seven mothers of infants (0 -11 months) in each cluster.[7] For immunization status, definitions from Service evaluation coverage, CSSM 1992 , were followed. The right age for vaccination was considered as: for Measles, soon after 9 months (9 months completed); BCG–any time after birth; Polio/DPT–first dose, any time after 6 weeks of birth. Subsequent doses spaced at least one month or 28 days apart. A fully-immunized child is the child who was given 1 dose of BCG, 3 doses of OPV, 3 doses of DPT and 1 dose of measles in the eligible population (12-23 months of age).

First DPT before one and a half months and Measles immunization less than 9 months were considered invalid immunizations, and such vaccinations were excluded from the computation of fully immunized children even if all doses for six VPDs were given. Partially immunized child was the one who had not received complete immunization schedule or received one or more than one of these immunizations at wrong age. A person vaccinated at the wrong age was considered not vaccinated.

A second or third DPT or Polio vaccination which was given less than one month after the preceding vaccination was considered invalid. It was checked that the vaccinations were completed before 12 months of age. Measles vaccine given before 9 months age (270 days) was considered not valid. Non - immunized were those who did not receive even a single dose of any vaccine or have been administered at a wrong age. In case of a partially immunized or a non immunized child, the mother was asked to give the most important reason why the immunizations were incomplete. The information collected was transferred to „Master Sheets" and analysis was done manually

RESULTS

Present study was conducted in rural area of Kancheepuram District (Kattankulathur Panchayat Union) covering a population of approx.1, 5 0000. A total of 210 children and 211 mothers were covered in 30 Clusters. Children were almost evenly distributed amongst male and females, 50.48 % were male and 49.32 % were females. (Table-1)

Nearly three fourth (71.9%) of the children were fully immunized with 1 Dose of B.C.G., 3 Doses of D.P.T. & O.P.V. and 1 Dose of Measles Vaccines. Only 1 Child was non- immunized (had not received even a single dose of any of the vaccines) and slightly more than a quarter were found to be partially immunized. (Table-2)

Nearly all the children (99.52%) were given B.C.G. vaccine but approximately one forth (23.92%) of them did not have B.C.G. scar. More than three fourth of the children were immunized against Measles. Though very few were not covered with first dose of D.P.T. /O.P.V. many of them dropped out of the third dose of D.P.T./O.P.V for various reasons. (Table -3)

The main reason for dropout or non immunization was "lack of information about Immunization Programme" (76.27 %), "Invalid Immunization "(55.93%) was the main contributor. (Table -3) More than half of the respondents did not know the name of any vaccine preventable disease (53.09 %), and no. of doses of D.P.T./O.P.V. vaccine (52.85%) required (Table-4) Almost all (97.63%) the mothers of infants (0-11 Months) were found fully immunized with Tetanus Toxoid, a little less than three fourth received it from government agencies. Nearly all (99.05%) mothers had at least 3 antenatal visits but many of them did not receive 100 or more IFA tablets during the entire period of Pregnancy. (Table-5) Almost all (99.05%) had Institutional delivery conducted by health personnel.

DISCUSSION

Present study shows that the vaccination coverage is good in rural Tamil Nadu. An evaluation of immunization coverage in rural area in Alwar District of Rajasthan carried out in 2004 showed that only 28.9% children were fully immunized.[8] However another study carried out from November 2003 to April 2004 in some districts of W. Bengal and Assam showed variable picture, coverage varied from 82.5% to 27.2%. Coverage was good in Paschim Mednipur (82.5 %) followed by Kolkata (71.6%), Malda (65.3%) and South 24 Parganas (61.9%) districts of West Bengal. It was bad in Murshidabad (41.3%) district of West Bengal and Goalpara (27.2%) of Assam[9].

According to NHFS - 3, 80.9% children were fully immunized in the state of Tamil Nadu which is above National average.[10] Approximately three fourth of Male (78 /106, 78%) and Female (73 /104, 70.19%) children were found to be fully immunized, it was slightly better amongst Male 78% than that of Female 70.19%. However this difference is not statistically significant. Vaccination coverage was found to be lower than that of UIP targets (Table 1). NHFS 3 observed that BCG coverage was 99.5%, Measles 92.5%, coverage of DPT 1, 2, 3 & OPV 1, 2, 3 were 98.9%, 97.7%, 95.7% & 99.6%, 96.3%, 87.8% respectively for Tamil Nadu [9], which is comparable to present study except for Measles and dropout rates from first dose to third dose .The main reason for non immunisation or dropout were similar to earlier studies[8].

Alwar study observed that 27.1% of children vaccinated with BCG did not have a scar this is comparable to the present study where approximately 24% children did not have scar (Table 1). Three fourth (73.5%) of children got immunized by government agencies, immunization cards were available with 77.14 % of the children (Table 1). According to NHFS- 3, government agencies are primary provider of UIP vaccines in India. It also observed that immunization card were available with 76.1% children at National Level. Nearly all the Mother were fully immunized for tetanus (97.63%) and received / paid 3 or more antenatal visits (96.68%) but only 90.52% received 100 or more IFA tablets. Almost all (99.05%) were institutional deliveries conducted by Health personnel (Table 5)

CONCLUSION

The present study concludes that there is very good level of immunization coverage and Antenatal services for expectant mothers in rural Tamil Nadu. It also shows a level of immunization coverage for children which is above the National average but below the targets of UIP & NHFS 3 level. This study also observed that people"s knowledge about immunisation programme and its expected benefit are very low and "Invalid Immunization" is the most important reason for partial immunization. There is need for a bigger study comprising districts from all parts of Tamil Nadu to make a more definitive conclusion. There is also a need for capacity building exercise amongst Health care professionals involved in immunization services. A sustained and focussed IEC campaign to improve the awareness amongst community will help in improving community participation leading to a better coverage.

ACKNOWLEDGEMENT

This study was funded by S.R.M. University on the recommendations of Dr.Vinod Kochupillai, The Director (Medical and Health Services), S.R.M. Medical College Hospital and Research Centre. (Survey Team: Siddharth Ravishankar, Sharrmila Devi. M, Sindhuja Giritharan Shanmugapriya.K Snehapriyadarshini. D Sreyes Ravi Somanatha Sharma. S Sravana Pooja Kommineni. L)

Table 1: Male/ Female Ratio (n = 210)

	Children Covered		Fully Immunized	
	No.	%	No.	%
Male	106	50.48	78	73.0
Female	104	49.52	73	70.19
Total	210	100	151	

TABLE 2: Immunization Status (Vaccine/dose-wise) of Children (12-23 months), (n = 210)

Type of vaccine / Dose	Number	%
Immunization Card Available	162	77.14
• DPT 1	206	98.10
• DPT 2	204	97.14
• DPT 3	186	88.57
• OPV 0	208	99.05
• OPV 1	206	98.10
• OPV 2	204	97.14
• OPV 3	192	91.43
• BCG	209	99.52
• Scar (Yes)	159	76.08
• Scar (No)	50	23.92
• Measles	162	77.14
Drop out Rates		
• DPT I to 3	20	9.7
• OPV 1 to 3	14	6.79
• Fully Immunized	151	71.9
• Partially Immunized	58	27.62
• Not Immunized	1	0.48

TABLE 3: Reasons for Failure of Immunization amongst Children (12-23 month)

Reasons	Number	%
A. Lack of Information		
• Unaware of need for Immunization	3	5.08
• Unaware of need to return for subsequent doses	8	13.56
• Place and time not known	1	1.69
• Invalid Immunization	33	55.93
Sub total	45	76.27
Obstacles		
• Place of Immunization Too far to Go	1	1.69
• Time of Immunization inconvenient	5	8.47
• Vaccine not available	0	0
• Mother too busy	0	0
• Child ill not brought	4	6.78
• Child ill brought but not immunized	3	5.08
• Mother ill and family problems	1	1.69
Sub total	14	23.73
Total reasons	59	100

Table 4: Immunization Related Awareness (n = 210)

Name of Vaccine Preventable Disease	No.	%
None Known	122	58.09
Diphtheria	18	8.57
Pertussis	11	5.24
Tetanus	16	7.62
Polio	73	34.76
Measles	42	20
Tuberculosis	47	22.38
Knowledge about Doses of D.P.T./ O.P.V.	-	-
Yes	99	47.14
No	111	52.85
Information about Immunization	-	-
Health Staff	184	87.62
Volunteer	2	0.95
Relatives	7	3.33
Neighbour	7	3.33
Radio / Television	3	1.43
Newspapers / posters	0	0
Others	1	0.48
Did not receive	0	0
Do not know	8	3.8

TABLE 5: Profile of Mother Coverage (n = 211)

	Number	%
A- IMMUNIZATION		
• Immunization Card	146	69.19
• First Dose T.T.	203	96.21
• Second Dose T.T. (including booster)	206	97.63
• Govt. Source	152	72.04
• Private	54	25.59
B. Antenatal Care		
• Mother given ANC min. 3 visits	204	96.68
• IFA tabs (min. 100 tabs)	191	90.52
C. Place of Delivery		
• Hospital	209	99.05
• Home	2	0.95
D. Delivery Conducted by.		
• Hospital Staff (Govt.or Pvt.)	209	99.05
• Trained Dai	1	0.47
• Untrained Dai	1	0.47

REFERENCES

1. World Health Organization. 1999. The double burden: emerging epidemics and persistent problems. In The world health report 1999: making a difference. Geneva, Switzerland: World Health Organization
2. United Nations Millennium Development Goals. http://www.un.org/millenniumgoals/.
3. Statistical Annex. The World Health Report 2004. WHO, Geneva: 127.
4. Measles continues to remain major public health problem in India. CD Alert. National Institute of Communicable Diseases. Directorate General of Health Services. Government of India. 2000; 4(5): 1.
5. Diphtheria. CD Alert. National Institute of Communicable Diseases, Directorate General of Health Services. Government of India. 1999; 3(4):1.
6. Mian Findings, WHO Integerated Management of Childhood Illness ,2006, http://www.who.int/imci-mce/findings.htm
7. EPI evaluation coverage, Child Survival and Safe Motherhood Programme. 1992, Ministry of Health and Family Welfare. 69
8. Jain S. K,Chawla Uma, Gupta Neeru, Gupta R S, Venkatesh S, Lal Shiv et al. Child Survival and safe Motherhood Programme . Indian J Pediatrics 2006;73:43-47.
9. Ray SK, Dasgupta S, Dobe M, Biswas BMehta R, Bhaishya AL et al -An evaluation of Routine Immunization Coverage in Some Districts of West Bengal and Assam. Indian Journal of Public Health 2004; 48(2): 82-5.
10. National Family Health Survey-3, India (2003-05). International Institute of Population Sciences; Mumbai, 2007: 209-11.