Original Article

EPI Status

EPI Status under One Year Children and their Mothers attending Paediatric Department Sheikh Zayed Medical College & Hospital, Rahim Yar Khan

1. Jamal Anwer 2. M.I.Babar 3. Kifayat Niazi 4. Zahid Mahmood

1. Asstt. Prof. of Paediatrics 2. Asstt. Prof. of Paediatrics 3 & 4. PG Students of Paediatrics, Sheikh Zayed Medical College & Hospital, Rahim Yar khan

ABSTRACT

Objective: To determine the EPI status in children <1 year of age and the status of Tetanus immunization in their mothers attending paediatric department. This will help us to determine the facts and figures in our population and to construct a plan to improve the vaccination status.

Study Design: Cross-sectional analytical study

Place and Duration of Study: This study was conducted at the Department of Paediatrics, Sheikh Zayed Medical College & Hospital, Rahim Yar khan from April 2011 to July 2011.

Materials and Methods: In the study 492 consecutive children whether admitted in the ward or visited in Paediatric OPD and their mothers were inquired about EPI status in the child and the status of Tetanus immunization in their mothers, strictly following the inclusion and exclusion criteria.

Results: Out of 492 patients, we have found three groups. Group 1 includes those children who were unvaccinated. Group 2 includes those children who were incompletely vaccinated. Group 3 include those who were completely vaccinated according to EPI schedule. Similarly three groups were found in mothers. Group 1 includes those who were unvaccinated. Group 2 includes incompletely vaccinated ladies. Group 3 include those who were completely vaccinated according to EPI schedule.

Conclusion: In our study, we found that EPI status is very poor in our low socioeconomic and illiterate population. Those people living in peripheries and remote areas are particularly not properly following the EPI programme.

Key Words: EPI (Expanded Program on Immunization), Immunization, Vaccines, Tetanus, Tetanus Toxoid(TT)

INTRODUCTION

The Expanded Program on Immunization is a World Health Organization program with the goal to make vaccines available to all children throughout the world.

For evaluation **c**ommunity-based surveys are applied using a modified cluster sampling survey method developed by the World Health Organization. Vaccine coverage is evaluated using a two-stage sampling approach in which 30 clusters and seven children within each cluster are selected. Health care workers with no or limited background in statistics and sampling are able to carry out data collection with minimal training [1]. Such a survey implementation provides a way to get information from areas where there is no reliable data source. It is also used to validate reported vaccine coverage (for example, from administrative reports) and is expected to estimate vaccine coverage within 10 percent. Surveys or questionnaires, though frequently considered inaccurate due to self-reporting, can provide more detailed information than administrative reports alone[2]. A survey in Thailand has found effective expended programme of immunization[3].

Expanded Programme on Immunization (EPI) in Pakistan: The Expanded Programme on Immunization (EPI) was launched in Pakistan in 1976 by WHO and UNICEF to protect children by immunizing them against childhood tuberculosis, poliomyelitis, diphtheria, pertussis, tetanus and measles.

The programme also vaccinates pregnant women with tetanus toxoid vaccine to protect the new born from neonatal tetanus. With support from the Government of Pakistan and development partners, the programme has added hepatitis B (Hep B) and Hemophiles influenza type B (Hib) vaccinations to its childhood immunization schedule. In 2002, the programme introduced hepatitis B vaccine with support from the Global Alliance for Vaccine and Immunization (now called GAVI). In 2006, a tetravalent combination vaccine was introduced replacing separate diphtheria, tetanus and pertussis and hepatitis B vaccines. This was later switched in 2008 to the pentavalent (DPT, Hep B, Hib) vaccine with the addition of the new Hib vaccine. Now a child needs only five visits during the first year and one visit during the second year of his/her life to complete the vaccination with four antigens against eight dreadful diseases.

Programme Development: From mid 2012 pneumococcal conjugate vaccine was added in immunization programme. This new vaccine will protect children from pneumonia and meningitis due to

pneumococcal infection. The programme also plans to introduce Rota virus vaccine, which will prevent diarrhea due to rotavirus. The new vaccines may together avert 17% of childhood mortality in Pakistan and thus help in achieving Millennium Development Goal 4 on reducing child mortality.

Safer Demmunization: The programme has adopted new technology to make immunization safer and more clients compliant. Since 2002, to prevent the risk of blood borne diseases, the programme has been using auto-disable syringes for all immunization injections and safety boxes for proper disposal of sharps waste[4].

Programme objectives: The aim is to reduce mortality and morbidity resulting from the eight EPI target diseases by immunizing children aged from 0 to 11 months and pregnant women.

The specific objectives of the programme are interruption of polio virus by 2012, elimination of neo-natal tetanus by 2015, elimination of measles by 2015, reduction of diphtheria, pertussis and childhood tuberculosis to a minimum level so that they do become a public health problem, control of other diseases by introducing new vaccines in EPI as and when they become available, using EPI as a spearhead for promoting other primary health care activities, integrating EPI into primary health care.

Current situation: Despite significant efforts by the government and its partners, Pakistan's immunization indicators have yet to reach the expected benchmarks. The key goals of polio eradication, and measles and neo-natal tetanus elimination, have not been achieved. People coming from remote areas have poor knowledge and facilities of vaccination [5,6]. A study published by Furqan Kurshid found poor vaccination coverage of mothers during pregnancy with tetanus toxoid and infant after birth [7].

Routine vaccination coverage is still suboptimal for achieving the desired goals. Poor routine coverage is also evidenced by the occurrence of numerous outbreaks of measles, pertussis and diphtheria in different parts of the country. A study conducted by Shaikh S. "Immunization status and reasons for low vaccination in children, attending O.P.D. at Liaquat University Hospital" found poor knowledge of vaccination in community [8].

MATERIALS AND METHODS

We have included the children who were below one year age. Data collected by taking interview from mothers, whether the child was admitted in Pediatric unit due to some illness or visited paediatric OPD. The Performa was filled strictly following the rules. Their mothers were asked about the EPI status of the child i.e.; BCG, polio, pentavalent (DPT, HiB, Hep B) and measles 1. Child's mother was interviewed by using a structured pre-tested questionnaire, regarding the EPI coverage of her child, her own T.T. coverage and other demographic and potential risk factors for low vaccination coverage. EPI cards were checked where ever available and if not, the subjects were inquired verbally and BCG scars were checked. We gathered information on characteristics such as basic demographics, socio-economic status, reproductive history, health services utilization, immunization coverage of mother and child and reasons for non-compliance with the EPI schedule.

The children who were below one year of age admitted in Pediatric unit due to some illness or visited paediatric OPD and their mothers were included in the study.

The children above one year of age were excluded from the study.

EPI Schedule For Children

Age	Injection or Drops
Immediate after birth	BCG , Polio (birth)
6 weeks	OPV-1, Pentavalent – Pneumococcal – 1
10 weeks	OPV-2, Pentavalent – Pneumococcal – 2
14 weeks	OPV-3, Pentavalent – Pneumococcal – 3
9 months	Measles – 1
15 months	Measles – 2

Tetanus Vaccination Schedule for Pregnant Women

Sr. No.	Schedule	Vaccination
1	During Pregnancy	TT-1
2	After one month of 1st dose of vaccination	TT-2
3	After six month of 2nd dose of vaccination	TT-3
4	After one year of 3rd dose of vaccination	TT-4
5	After one year of 4thdose of vaccination	TT-5

RESULTS

492 children of age less than one year, who were admitted in pediatric unit due to some ailment or visited Paediatric OPD and their mothers, were interviewed. The mean age of the infants was 5.4 +_3.5 months. We have found three groups. Group 1 includes those children who were unvaccinated. Group 2 includes those children who were incompletely vaccinated. Group 3 include those who were completely vaccinated according to EPI schedule.

Group 1 Unvaccinated : 92(18.69%)
Group 2 Incompletely vaccinated : 177(35.97%)
Group 3 Completely vaccinated : 223(45.32%)

Out of 492, twenty one percent had received no vaccination. Sixty two percent of mothers had received one to four doses of T.T. Seventeen percent had

received full vaccination coverage. When inquired about the total number of T.T doses received in lifetime by the mothers, we learnt that there were 102 women who had received just one dose. The rest of the women 203 had received 2-4 doses of TT.

Group 1 Unvaccinated : 103(21%)
Group 2 One to four doses of T.T : 305(62%)
Group 3 Completely vaccinated : 84(17%)

Table No.1: Demographic information of the families surveyed to determine EPI coverage

Sr. No.	Characteristic	Number of subjects (%)
1.	Fathers education	
i.	Primary	226 (46%)
ii.	Matric	147 (30%)
iii.	Inter and above	119 (24%)
2.	Mother education	
i.	Primary	290 (59%)
ii.	Matric	118 (24%)
iii.	Inter and above	84 (17%)
3.	Knowledge about vaccination	
i.	Poor	259 (53%)
ii.	Good	233 (47%)
4.	Fathers' occupation	
i.	Unskilled labor	93 (19%)
ii.	Government service	9 (1.82%)
iii.	Private service	206 (42%)
iv.	Business	73 (15%)
v.	Skilled labor	14 (3%)
vi.	Unemployed	0
vii.	Farming	44 (9%)
viii.	Landlord	19 (4%)
5.	Fathers' ethnicity	
i.	Punjabi	139(28%)
ii.	Saraiki	202(41%)
iii.	Urdu speakers	71(14%)
iv.	Balochi	32(7%)
v.	Sindhi	29(6%)
vi.	Pathan	10(2%)
vii.	Others	10(2%)
6.	Mothers' occupation	
i.	Housewives	330(67%)
ii.	Skilled labor	133(27%)
iii.	Government service	29(6%)

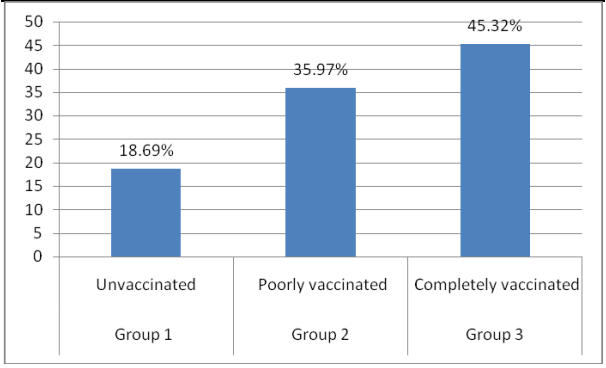

Figure No.1: Vaccination of children below one year

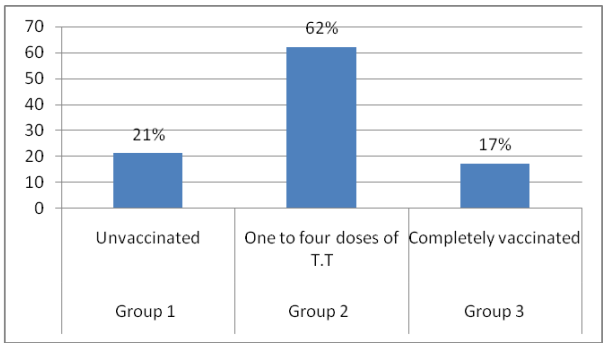

Figure No.2: Vaccination of mothers

DISCUSSION

The age-appropriate vaccination coverage for infants in our study was 54.6%. A study conducted in peri-urban Karachi To determine the age-appropriate EPI coverage of under one year old children and Tetanus Toxoid (TT) coverage of their mothers determined that 44.8% coverage [9]. In another study in Chicago, USA, among inner city pre-school children reported coverage of 47% but in this study, the age of the children was between 19 to 35 months. Another study conducted in Gondar, Ethiopia among 12-24 months old children reported 47.4% as fully immunized [10]. A baseline study done in four regions of Pakistan showed EPI coverage of 48% . In another study in the North West Frontier Province (NWFP) of Pakistan, 65% of children were fully immunized by three years of age [11]. . However a cross-sectional study conducted in Peshawar/Abottabad found poor vaccination coverage in women in reproductive age [12,13]. Fasih et al reported EPI coverage of 26.5% by age 2 years in Karachi, Pakistan[14]. Enhancing the vaccination provision may increase the coverage [15] Nisar N and colleges found poor knowledge and attitude of women regarding vaccination[16]. In our study, despite using relatively strict criteria by enrolling less than one year old children comparable or better coverage has been found

CONCLUSION

We concluded that proper knowledge of vaccination is very important. For this education of both parents plays a significant role in child's immunization coverage. Mothers' TT coverage status was significantly related with child's EPI coverage status, which reflects the health seeking behavior of a more conscious mother making good health choices for herself as well as for her child.

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Address for Corresponding Author:
Dr. Jamal Anwer,
Asstt. Prof. of Paediatrics,
Sheikh Zayed Medical College & Hospital,
Rahim Yar khan