Original Article

Factors Affecting Children Immunization in Lahore

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Abstract

Objective: To assess the association of immunization coverage with age of children <5 year, female gender of children of city Lahore, low Education level of mother & Father, far healthcare center, poor knowledge about child vaccination

Methods: This Cross sectional study was used to collect information from candidates (parents). Parents interviewed regarding immunization status of their children of <3 years of age. Spatial sampling technique was used to collect data. As population of Lahore city was subdivide in 4 zones by applying convenient sampling. A sample of 100 is selected in each zone through stratified random sampling with equal allocation. Only those children are interviewed of < 3yes of age are present. Parents asked about different EPI vaccination methods and complete history and confirmed through vaccination card status. Factors noted including education of mother, education of father, socioeconomic status, residential area etc. Presented also frequency and percentage. Cluster analysis was applied to find the factors affecting of incomplete immunization coverage in children's of Lahore. The result are analyzed by using SPSS version 21.

Results: 207 (51.8%) children lie under 6 months, 81 (20.3% children lie between 7-12 months and 112 (28%) children fall greater than 12 months of age. 219 (54.8%) are male and 181 (45.3%) are female. About 288 (72%) children have fully immunized, 90 (22.5%) have partially complete and 22 (5.5%) have not vaccinated children.360 (90%) parents have availability of EPI card and 40 (10%) does not have EPI card, 310 (77.5%) parents have knowledge about vaccination and 90 (22.5%) parents does not have knowledge about vaccination. Two clusters were formed firstly including zones areas.

Conclusion: Data was fall in Fair zone. Therefore, we could say that data is good and all the values tell us so much detail about vaccination process.

Keywords: Vaccination,Immunization, EPI, Expanded program of immunization, Children under five

Introduction

The Expanded Program on Immunization (EPI) is a World Health Organization program with the goal to create vaccines available to all children throughout the world. In 1984, after ten years later introduced this program, WHO recognized a vaccination program new EPI (Expanded Program on Immunization) which was standardized.[1]

Vaccination is the procedure by with a person develops immunity against various infectious/ contagious diseases. Immunization enhances body's defense system and provides protection against subsequent disease.

Vaccination is the only easy and efficient method regarding improvement of children health in the developing countries.[2] Globally every year approximately 27 million children as well as 40 million expecting women fail to receive the vaccination.[1]

During 1979 a platform was introduced about the vaccination of children in Pakistan. This platform expected to decrease the morbidity and mortality of the children due to Measles, Tuberculosis, Polio, Diphtheria, and Tetanus & Whooping Cough in Pakistan. The program as also included with the objective of Public awareness regarding their health. But after many years we cannot reduce the disease and death owing to vaccine avoidable disease even we cannot eliminate polio from over countries.[3]

During 1990 a summit was held for the health of children

by United States. In that summit around 167 countries provided that they will put their all efforts regarding child health and about improvement of their nutrition.[4] But after this summit still globally 10.6 million children died every year due to the most reporting diseases like Respiratory diseases.[5]

In Rahman medical complex Peshawar, This is a questionnaire based survey; chi-square test was applied to effect the association of factors with (IC). Education level of 63% respondent have significantly associated with IC, 54 % respondent were no aware about national immunization days and 98% respondent informed that their children had got vaccinated an in other side 29% have no knowledge about vaccination awareness.[6]

A cross sectional study was conducted in Peshawar 2011. In this study, to find out the coverage of vaccination status, 64.2% completely vaccinated, 22.4% were incompletely vaccinated children and 13.3% not vaccinated at all? The factors included to incomplete vaccination or not vaccinated children, like lack of awareness 23.8%, family problems 20.8%, fear of reaction 7.6%, and other miscellaneous causes. EPI staff also faced the problems were lack of awareness among people 32.5%, unavailability of vaccine 10%, poor transport facility and insecurity10%.[7]

A study was published in Nairobi an objective to identify the determinants associated with the poor vaccination in slum rural areas of Nairobi. It was observed that measles vaccination remained the lower. Complete immunization status was observed among 51.8% children only. It was determined that the factors including socio-economic status, place of delivery, education level of mother's, age were remained the statistically significant predictors for complete immunization status of children living in the towns.[8]

This study was aimed to assess the association of immunization coverage with age of children <5 year, female gender of children in Lahore city, low Education level of mother & Father, far healthcare center, poor knowledge about child vaccination

Methods

This Cross sectional study was used to collect information from candidates (parents). Parents interviewed regarding immunization status of their children of <3 years of age. Spatial sampling technique is used to collect data. As population of Lahore city are covered by dividing in 4 major zones. After subdivision of zones in four regions, convenient sample is applied. A sample of 100 is selected in each zone through stratified random sampling with equal allocation. Only those children are interviewed of < 3yeas of age are present. An organization named Akida helped us for data collection. Personal information like name, age, & Gender is collec-
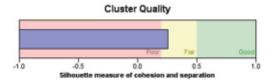
ted. Parents asked about different EPI vaccination methods and complete history and confirmed through vaccination card status. Information regarding Measles, Neonatal Tetanus, Poliomyelitis, Diphtheria, Pertussis (whooping Cough), and Contacts of selected cases will be obtained and parents will be interviewed for education level, socioeconomic status and factors of incomplete immunization will also be obtained. This study is introduced and descriptive statistics of various variables to complete EPI coverage is presented as frequencies & percentages. Factors noted including education of mother, education of father, socioeconomic status, residential area etc… Presented also frequency and percentage

Cluster analysis is applied to find the factors affecting of incomplete immunization coverage in children's of Lahore. Cluster means a collection of data objects similar to one another within the same cluster and dissimilar to the objects in other cluster. Cluster two way analysis is used in this dataset. The result are analyzed by using SPSS version 21.

Results

207(51.8%) children lie under 6 months, 81(20.3% children lie between 7-12 months and 112(28%) children fall greater than 12 months of age. 219 (54.8%) are male and 181(45.3%) are female. 158(39.5% families have Low income (less than 0r equal to 10000), 159 (39.8%) have lie between 10000-20000 income and 83(20.8%) families have > 20000 income. Now we tell about the father and mother education, 160(40%) father have illiterate as compare to 243(60.8%) mothers have illiterate. 118(29.5%) have father and 124(31%) mother have primary pass. 57(14.3%) father and 20(5%) only mother have matric pass. 65(16.3%) father 13(3.3%) mother have intermediate and graduation .288(72%) children have fully immunized, 90(22.5%) have partially complete and 22(5.5%) have not vaccinated children. 360(90%) parents have availability of EPI card and 40(10%) does not have EPI card.310(77.5%) parents have knowledge about vaccination and 90(22.5%) parents does not have knowledge about vaccination.

In this study we apply cluster analysis on factors affecting of immunization status in Lahore areas. Two clusters were formed firstly including zones areas. Data was fall in Fair zone. So we could say that data is good and all the values tell us so much detail about vaccination process.

Cluster Quality

In this sample, two clusters were formed. In cluster 1,59% children had male , 95.9% children had fully immunized, 55.6% children had took their vaccine through doctor and 92.5% parents had knowledge about vaccination, 31.2% father had illiterate and 48.5% mother had also illiterate,46.8% fathers had between 10000-20000 income and 100%parents had availability of EPI card. In cluster 2, 57.1% children had female, 74.3% children had partially immunized, 48.6% children had took their vaccine through Lady health worker and 64.8% parents had knowledge about vaccination, 64.8% father had illiterate and 95.2% mother had also illiterate, 66.7% fathers had between less than or equal to 10000 income and 61.9%parents had availability of EPI card.

In this sample, four clusters were formed. In cluster 1,100% children had male , 93.4% children had fully immunized, 81.8% children had took their vaccine through doctor and 93.4% parents had knowledge about vaccination, 39.7% father had illiterate and 82.6% mother had also illiterate. In cluster 2, 90.8% children had male, 88% children had fully immunized, 65.3% children had took their vaccine through Lady health worker and 92% parents had knowledge about vaccination, 52% father had Primary pass and 58.2% mother had Primary pass. In cluster 3, 100% children had female, 88.8% children had fully immunized, 47% children had took their vaccine through Lady health worker and 83.7% parents had knowledge about vaccination, 58% father had matric pass. In cluster 4, 58% children had female, 75.3% children had partially immunized, 50.6% children had took their vaccine through Lady health worker and 71.6% parents had knowledge about vaccination.

Discussion

In this study, we find the factors affecting of immunization status in children in Lahore. We apply two way cluster analysis. Firstly two clusters were formed and data was fall in fair zone, Cluster 1, 295(78.8%) cluster 2, 105(26.2%). Mostly male children had belong to cluster 1, 59% had fully immunized and had took their vaccine through doctor. In cluster 1, Parents had illiterate (Mother 96.8%. Father 48.5%). 92.5% parents had knowledge about vaccination.

In cluster 2, 57% female had partially immunized and took their vaccination through Lady Health worker. Parents had also illiterate (Mother 95.2%, Father 64.8%).

These two clusters include zones but zones had no effect the factors so next cluster were formed without including zones. Four clusters had formed. (Cluster 1=121(30.2%), Cluster 2=98(24.5%), Cluster 3=100 (25%), Cluster 4=81(20.2%)).

In cluster 1, 100% children had male, 93.4% had fully immunized and they had taken vaccine through Doctor. Parents had illiterate (Mother 82.6%, Father 39.7%).

In cluster 2, 90.8% had male. 88.8% children had fully immunized and they had taken vaccine through Lady Health worker. 83.7% Parents had knowledge about vaccination, 58% father had matric pass and 55% mother had Primary pass.

In cluster 3 & 4 had female, Cluster 3, 88.8% female had fully immunized, 47% children had taken vaccine through Lady Health worker, and 83.7% Parents had knowledge about vaccination.

In cluster 4, 75.3% female had partially immunized, 50.6% had taken vaccine through Lady Health worker and 71.6% parents had knowledge about vaccination.

These clusters explained about factors affecting immunization status. Most of the other factors also affect the immunization status but this study some factors discuss about immunization. All the literature did not find the exact factors because the apply regression but in this type of study regression could   not apply. If we apply regression we must know about the causality of the variables.

Other factors had also explain the result. We apply cluster analysis the variables vaccination types and factors. In cluster 1, 73.9% male had fully immunized, 83.7% had taken measles 1 vaccine, 55.6% had taken mea sales 2 vaccine, 96% had taken BCG vaccine, 100% children had taken all the three times Penta pneumonia vaccine. 83% parents had knowledge about vaccination but 58.8% mother had illiterate, 31.4% father had also illiterate.

In cluster 2,98.9% male had fully immunized, 100% had not taken measles 1 &2 vaccine, 100% had taken OPV vaccine, 85.9% had taken all the three times penta pneumonia vaccine, 100% children had taken BCG vaccine. 91% parents had knowledge about vaccination and 48% mother, 35% father had illiterate. In cluster 3,68.6% female had partially immunized, 100% had not taken measles 1 vaccine, 77.1 % had taken OPV vaccine,60% had not taken penta pneumonia vaccine, 65.7% had taken BCG vaccine, 37.1% children had taken vaccine through Lady health worker. 68.6% had not knowledge about vaccination, 97.1% mother and 71.4% mother had illiterate.

Conclusion

The application of Health facility by the population of Lahore is better. In immunization status is not up to the target and various determinants are attached with the poor immunization status. If those determinants for vaccination were escaped, the coverage of vaccine could easily reach national targets. Access to nearby health care facility, parental educational levels, socio-

economic status, and knowledge about the vaccination can contribute to the better immunization status in Lahore. Parents specially most of the mothers were seen to be favor of immunizing their children but in vaccination Program mothers faced many problem to complete their vaccination. So we should be paid special attention to OPOV for measles vaccination in the district.

Conflict of Interest: None

Funding Source: None

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