CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.1308143

Available online at: http://www.iajps.com Research Article

A CROSS-SECTIONAL RESEARCH ON VACCINE PRACTICE IDENTIFICATION REGARDING DEMOGRAPHIC FEATURES, VACCINE STATUS AND INADEQUACY REASONS

[1]Ahmed Hassan Usman, [2]Dr. Sehar Nadeem, [3]Dr. Ifra Rafaqat

[1]Medical Officer, Mayo Hospital Lahore

[2]MO, Bahria International Hospital Lahore

[3]Children Hospital and Institute of Child health, Lahore

Abstract:

Objective: *To identify the practices of vaccination by the of the mothers of those children whose ages were less than 02 years.*

Methods: *This hospital based and cross-sectional study was conducted at Mayo Hospital, Lahore (Paediatric Ward) from September, 2016 to August, 2017. The objective of the study was to identify the practices of vaccination by the mothers of the diarrhoea affected children whose ages were less than 02 years. The approval of study was done by Ethical Review Board of Hospital. A semi-structured questionnaire was used to collect the required data after taking verbal consent from the caregivers or mothers. Time duration of the study was from first of March to April 30, 2015. Through consecutive sampling, 207 mothers were selected at paediatric units of the said hospital. Documentation was executed accordingly. SPSS V.21.was used for data analysis.*

Results: *From the total 207 children, fifty-one percent (104) were female gender. The percentage of under one-year children was 89. At the birth time, BCG and OPV were received by around ninety percent of the children. When they were aged six weeks, Pentavalent1+Hib1+OPV1 were received by 82.1 percent. At ten weeks 75.8 percent were immunised with Pentavalent 2 +Hib2+OPV 2. At fourteen weeks, the percentage of Pentavalent 3+Hib3+OPV3 recipient was 66.2. At the age of nine months, measles vaccine was administered to 52 percent of the children. When they were aged 15 months, low coverage rate was noted in 30 percent. Findings revealed that mothers more than 45 in percentage of the unvaccinated cases had complained about the hardships in getting access to the vaccination centres. It was reckoned to be the main reason behind the unvaccinated cases against Expanded Program of Immunization (EPI).*

Conclusion: *It was concluded that the mothers are immunizing their children more than 90 percent between the ages of six weeks and ten weeks. The percentage of immunization cases was declined to be below 35 percent when the children were aged between 9 and 15 months. It was suggested that mothers are required to be sensitized to meet the desired level of EPI vaccination program especially for the children who are under two years of age.*

Keywords: *Infant's morbidity rate, Expanded Program of Immunization, Vaccination coverage, health care accessibility and utilization, infant's mortality rate*

Corresponding author:

Ahmed Hassan Usman,
Medical Officer,
Mayo Hospital,
Lahore

QR code

Please cite this article in press Ahmed Hassan Usman et al., ***A Cross-Sectional Research on Vaccine Practice Identification Regarding Demographic Features, Vaccine Status and Inadequacy Reasons,*** *Indo Am. J. P. Sci, 2018; 05(07).*

INTRODUCTION:

Today, vaccine-preventable diseases had significantly reduced due to immunization to the children. However, it demands more feasible approaches to tackle the vaccine-preventable diseases with every passing day. In order to reduce the infants' deaths, immunization has got primary significance. About 3 million infants' deaths are recorded annually due to vaccine-preventable diseases around the world. Asian countries have contributed more than forty percent in the total mortality rates of the world [1].

There has been steadfastness in terms of children being vaccinated in the last 2 years [2]. UNICEF reports indicated that vaccine coverage around the world was approximately 86 percent. As expected, this percentage in developing nations is considerably below par. In developing countries, the documentation rate is below thirty percent. Two million infants' deaths can be avoided by 2015 if all the available vaccines are suitably administered to the children against infectious maladies. It is also conditioned with the global vaccination coverage up to ninety percent. All this was estimated by World Health Organization [3].

In Pakistan the Expanded Program of Immunization was initiated in 1978. Its continuation has always been on the priority. The major objective of initiating such a productive program was to prevent the children from the infants' deaths especially when they were aged between 0 to 11 months. Vaccine preventable diseases are responsible for earlier deaths in the child. The percentage of causing deaths by such disease is 27 [4].

The rates of children's morbidity and mortality are more than to those of either neighbouring or developed nations. In recent times, Pakistan's Demographic Health Survey 2012-2013 has revealed 54 percent coverage of vaccination in overall in Pakistan. This coverage is different in different provinces. The highest percentage was recorded in Punjab i.e. 66 percent. 29 percentage was observed in the province of Sindh. In Baluchistan, it was recorded the least percentage i.e. 16 percent. In the last five years, in the children aged less than five years, EPI has done wonders in decreasing the mortality and morbidity rates from 95 to 66 per 1000 live births [5]. In Peshawar, a hospital-based research has revealed that 47 percent of the vaccination coverage was recorded in the government hospitals. As far as private hospitals are concerned, they recorded lower coverage [6]. In a study conducted in Punjab has evidenced that urban area vaccination coverage was reported 57.4 percent [7]. A study which was based on surveillance has recorded 84 percent coverage of the vaccination [8]. In order to prevent vaccine preventable diseases, new strategies and planning are the need of the hour. We need to know the reasons behind unvaccinated cases. Management, utilization and access to health services are better reflected by data of vaccination coverage [9]. The objective of the study was to identify the practices of vaccination by the mothers of the diarrhoea affected children whose ages were less than 02 years.

METHODS:

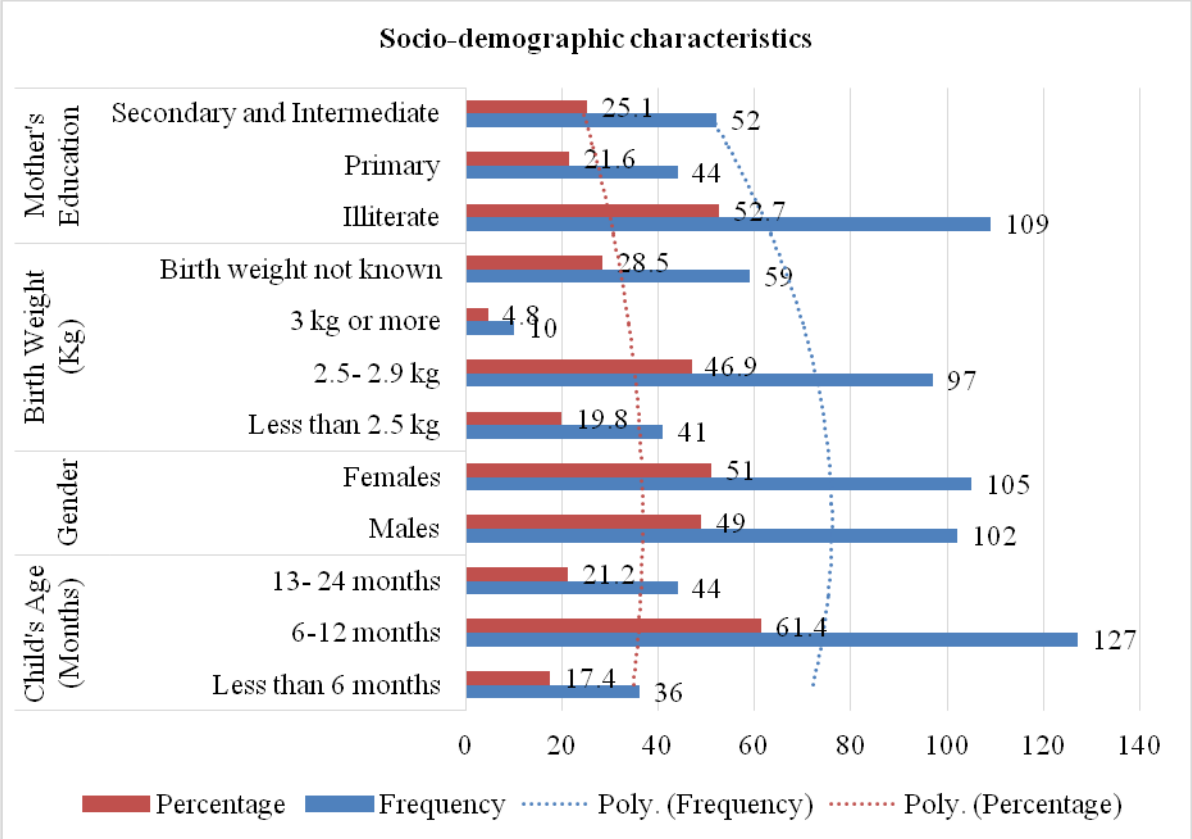
This hospital based and cross-sectional study was conducted at Mayo Hospital, Lahore **(**Paediatric Ward) from September, 2016 to August, 2017. Through consecutive sampling, 207 mothers were selected at paediatric units of the said hospital. The frequency of 84 percent was used to measure the size of sample by WHO calculator [9]. The approval of study was done by Ethical Review Board of Hospital. 207 Children who were admitted to hospital being affected with diarrhoea and aged between zero to twenty-four months were the part of this study. Cases affected with some other complications such as malnutrition, tuberculosis, psychological issues were dropped from the study. "Vaccination card" was the method employed to ascertain the status of vaccination. Respective mothers granted the verbal consent. The mother was considered the primary respondent. The father or guardian took over in case the mother was found absent. A semi-structured questionnaire was used to collect the required data. Documentation was executed accordingly. SPSS version .21.00. was used for data analysis. For quantitative data, SD and mean calculation was ensured. For categorical data, percentages and frequencies were measured.

RESULTS:

From the total 207 children, fifty-one percent (104) were female gender. Children's (18 ±1.5) months SD was the mean age which was included in the research. The ratio of children aged between 6-12 months was about 2/3rd. Birth weight was estimated to be existed between 2.5kg to 2.9 kg of the 46.9 percent of the cases. The weight of infant born children was not known by 59 mothers. The percentage of illiterate mothers was 52.7 percent as exhibited in Table – I. Only one percent (02 mothers) of the mothers has got educational credentials up to the level of graduation.

Table – I: Socio-demographic characteristics of the study population

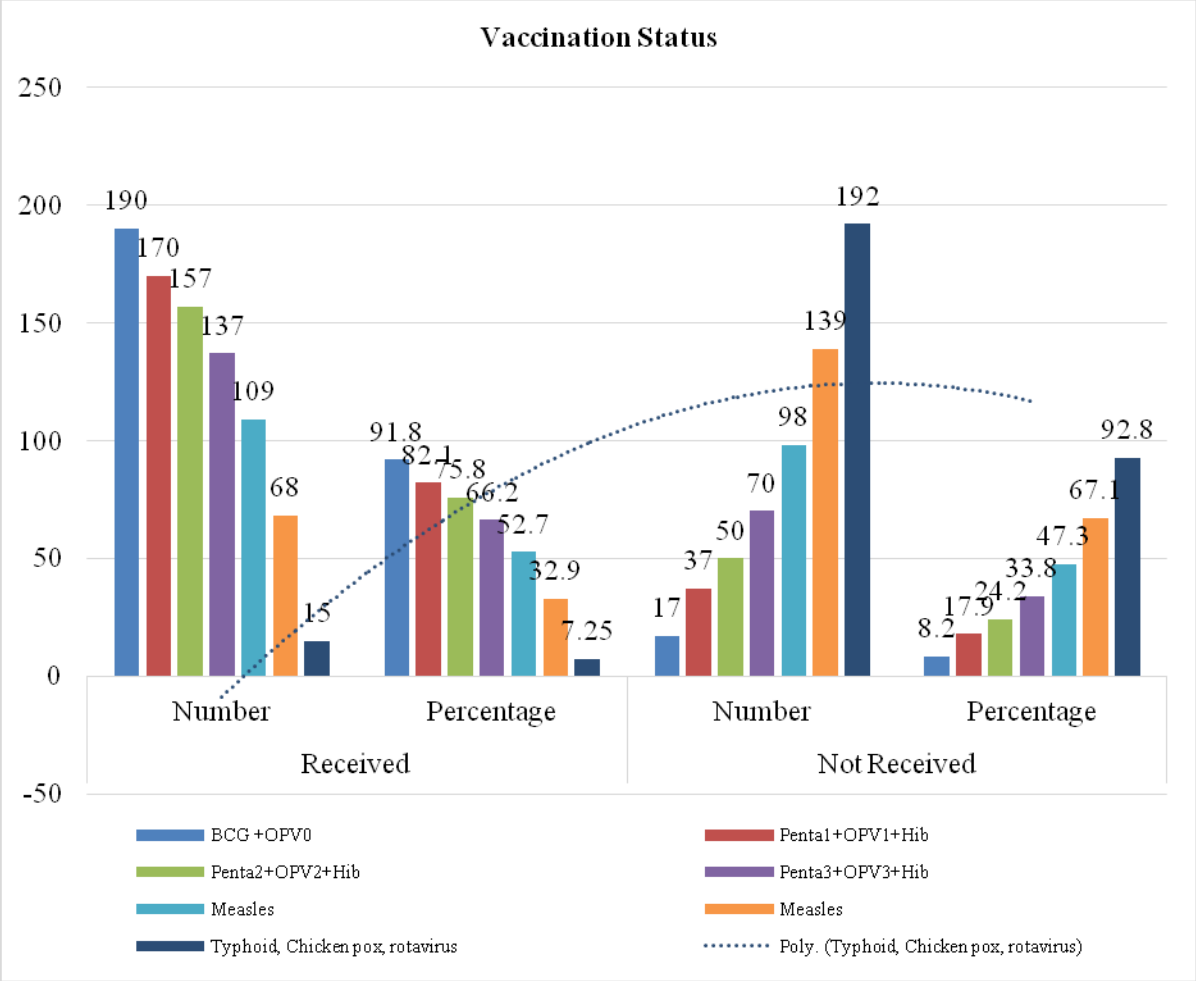
Characteristics		Frequency	Percentage
Child's Age (Months)	**Less than 6 months**	36	17.4
	6-12 months	127	61.4
	13- 24 months	44	21.2
Gender	**Males**	102	49
	Females	105	51
Birth Weight (Kg)	**Less than 2.5 kg**	41	19.8
	2.5- 2.9 kg	97	46.9
	3 kg or more	10	4.8
	Birth weight not known	59	28.5
Mother's Education	**Illiterate**	109	52.7
	Primary	44	21.6
	Secondary and Intermediate	52	25.1



As demonstrated in Table – II, BCG for Tuberculosis and OPV0 for Polio were administered to 198 children out of total 207. Penta +OPV1+Hib was administered to 170 children (82.1 percent) when they were aged six weeks. At the age of ten weeks, vaccinated numbers were 157. At the age of fourteen weeks, complete vaccination was received by 137 children. About 52 percent of the children were administered measles vaccine when they were aged nine months. It is pertinent to note that only 68 children were given with the second dose of measles vaccine when they were aged 15 months. Non-EPI vaccines (chicken pox vaccination, typhoid, rotavirus vaccine) were received by fifteen children.

Table – II: Vaccination status of the participants according to age

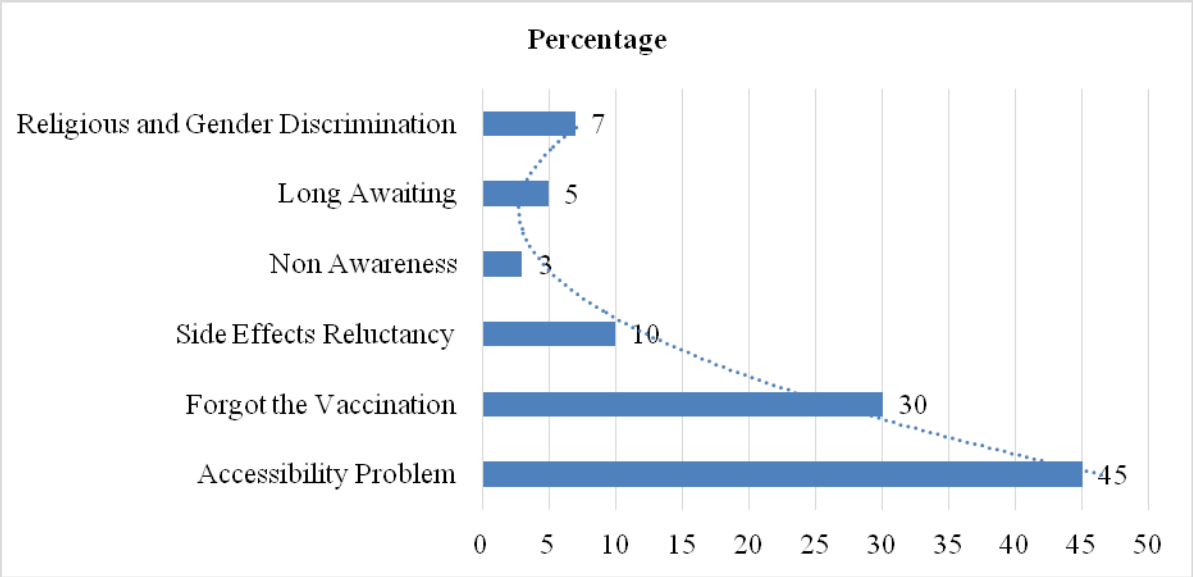
Age of child	Vaccination	Received		Not Received	
		Number	Percentage	Number	Percentage
At birth	BCG +OPV0	190	91.8	17	8.2
6 weeks	Penta1+OPV1+Hib	170	82.1	37	17.9
10 weeks	Penta2+OPV2+Hib	157	75.8	50	24.2
14 weeks	Penta3+OPV3+Hib	137	66.2	70	33.8
9 months	Measles	109	52.7	98	47.3
15 months	Measles	68	32.9	139	67.1
Non-EPI vaccines	Typhoid, Chicken pox, rotavirus	15	7.25	192	92.8



The reasons for unvaccinated cases are shown by Table – III. Findings revealed that mothers more than 45 in percentage of the unvaccinated cases had complained about the hardships in getting access to the vaccination centres. It was reckoned to be the main reason behind the unvaccinated cases against Expanded Program of Immunization (EPI). Some of the reasons given by mothers were religious concerns, fear of side effects, and undocumented date of vaccines and lack of awareness.

Table – III: Reasons for inadequate vaccinations among participants given by the care-givers

Reasons	Percentage
Accessibility Problem	45
Forgot the Vaccination	30
Side Effects Reluctancy	10
Non-Awareness	3
Long Awaiting	5
Religious and Gender Discrimination	7



DISCUSSION:

Our findings of study indicate that the coverage of vaccination was at par at the time of birth. It was reduced significantly from Penta1+Hib-1+OPV1 to Measles vaccine when the age progressed till two years. Most obvious reason presented by the mothers of children was their inability to get access to the vaccination centres.

In the study at hand, it has been revealed that approximately one-third of the children were vaccinated completely as per EPI recommended vaccines. The rate of immunization can be compared with an earlier study [10]. In contrary, a hospital survey of USA has reported 93 percent coverage of immunization in pre-school children [11]. This considerable difference in immunization coverage may have multi faceted aspects. EPI is not coming up to the required standard in Pakistan due to unsuitable utilization of the health services, poor policy incentives by the government and muzzling of resources.

Results indicated that the coverage of BCG+OPV0 was specifically greater. However, with the progression in age, it was reduced significantly till the age of two years. Such results are pretty much in conformity with the results obtained from other researches conducted in the very city. These studies have recorded the decrease in immunization coverage from DPT1 to DPT3 [12]. A community-based research representing 34 Indian states had given the similar results [13]. On the other hand, researches in Europe and Nigeria have given contrasting results [14, 15]. The declined percentage of the coverage of vaccination from birth to the end of two years may have multiple factors responsible for it i.e. lack of motivation, inability in getting access to immunization centres, lack of adequate knowledge about the significance of vaccination etc.

Out study indicated the most obvious reason presented by the mothers of children was their inability to get access to the vaccination centres. Some of the reasons given by mothers were religious concerns, fear of side effects, and undocumented date of vaccines and lack of awareness. Such results are similar to the former results obtained in the researches of Pakistan and India [16, 17]. Various other identified factors in the former research studies of various cities have been reported about the

continuation of the EPI, funded by internationally [18, 19, 20]. It is pertinent to mention here that inability to access to health services is the main impediment in utilization of such useful services [21]. It was suggested that parents are required to be motivated to reap the maximum fruit of health care programs such as EPI. They are also to be sensitized to meet the desired level of EPI vaccination program especially for the children who are under two years of age. Moreover, concerted efforts at international level are also the need of the hour to implement such programs in a more effective manner. Having said that, all the stakeholder of our community is encouraged to participate socially to make aware the parents about the significance of vaccination related services so that our society should not take such programs for granted.

CONCLUSION:

It was concluded that the mothers are immunizing their children more than 90 percent between the ages of six weeks and ten weeks. The percentage of immunization cases was declined to be below 35 percent when the children were aged between 9 and 15 months. It was suggested that mothers are required to be sensitized to meet the desired level of EPI vaccination program especially for the children who are under two years of age.

REFERENCES:

1. Loevinsohn B, Hong R, Gauri V. Will more inputs improve the delivery of health services? Analysis of district vaccination coverage in Pakistan. Int J Health Plann Manage 2006; 21:45-54.
2. Corsi DJ, Bassani DG, Kumar R, Awasthi S, Jotkar R, Kaur N, et al. Gender inequity and age appropriate immunization coverage in India from1992 to 2006. BMC Int Health Hum Rights2009;9: S3.
3. Sharma S. Immunization coverage in India [Internet]. Delhi: Institute of Economic Growth;2007. Available from: http://iegindia.org/workpap/wp283.pdf/ Accessed on May, 2015.
4. Siddiqi N, Khan A, Nisar N, Siddiqi AE. Assessment of EPI (expanded program of immunization) vaccine coverage in a peri-urban area. J Pak Med Assoc 2007; 157:391-5.
5. Naeem M, Khan MZ, Adil M, Abbas SH, Khan A, Khan MU, et al. Coverage and causes of non-immunization in national immunization days for polio; a consumer and provider perspective study in Peshawar. JPMI 2012; 26:48-54. Available from: http://jpmi.org.pk/index.php/jpmi/article /view File/1203/1111. Accessed on May, 2015.
6. Ahmad R, Alvi SS, Hassan M, Kamin M, Malik M, Sarwar L, et al. Availability of expanded programme of immunization services provided to children in a rural Pakistani village. J Pak Med Assoc 2011; 61:415-8.
7. Kalim M, Hayat M, Irshad M, Hussain M, Rehman Z. Immunization status of children (1to 2 years) with acute diarrhoea presenting to tertiary care hospital at Peshawar. KJMS 2014; 7:262-6. Available from: http://www.kjms.com.pk/index.php/kjms/article/ viewFile/223/154. Accessed on May, 2015.
8. Status of Immunization Coverage and Maternal Child Healthcare in Punjab Province, Pakistan [Internet]. Pakistan CSOs Collation for Health and Immunization; 2014. Available from: http://www.chip-pk.org/wp-content/uploads/2015/02/Status-of-Immunization-Coverage-Maternal-Child-Health-Care-Punjab-2014.pdf. Accessed on May,2015.
9. Naeem M, Khan MZ, Adil M, Abbas SH, Khan MU, Khan A, et al. Inequity in childhood immunization between urban and rural areas of Peshawar. J Ayub Med Coll Abbottabad 2011; 23:134-7.
10. Khan, M. I., Sahito, S. M., Khan, M. J., Wassan, S.M., Shaikh, A. W., Maheshwari, A. K., ... & Peerwani, S. (2006). Enhanced disease surveillance through private health care sector cooperation in Karachi, Pakistan: experience from vaccine trial. Bulletin of the World Health Organization,84(1), 72-77.
11. Rafi S, Shah IA, Rao MH, Billoo AG. Expanded Program for Immunization in Karachi. J Pak Med Assoc 1995; 45:34-7.
12. Simons E, Ferrari M, Fricks J, Wannemuehler K, Anand A, Burton A, et al. Assessment of the 2010global measles mortality reduction goal: results from a model of surveillance data. The Lancet 2012; 379:2173-8.
13. Khowaja AR, Zaman U, Feroze A, Rizvi A, Zaidi AK. Routine EPI coverage: subdistrict inequalities and reasons for immunization failure in a rural setting in Pakistan. Asia Pac J Public Health 2015; 27:1050-9.
14. Kumar D, Aggarwal A, Gomber, S. Immunization status of children admitted to a tertiary-care hospital of north India: reasons for partial immunization or non-immunization. J Health Popul Nutr 2010; 28:300-4.
15. Diez-Domingo J, Baldo JM, Patrzale KM, Pazdiora P, Forster J, Cantarutti L, et al. Primary care-based surveillance to estimate the burden of rotavirus gastroenteritis among children aged

less than 5 years in six European countries. Eur J Pediatr 2011; 170:213-22.
16. Odusanya OO, Alufohai EF, Meurice FP, Ahonkhai VI. Determinants of vaccination coverage in rural Nigeria. BMC Public Health 2008; 8:381.
17. Kazi AN. Measles epidemic exposes inadequate vaccination coverage in Pakistan. BMJ2013;346;245.
18. World Health Organization. Factsheet for Global Immunization Coverage [Internet]. Geneva: World Health Organizaion; 2015. Available from: http.//www.who.int/mediacentre/factsheets /fs378/en/. Accessed on May, 2015.
19. World Health Organization. MDG 4: reduce childhood mortality [Internet]. Geneva: World Health Organization;2015. Available from: http://www.who.int/topics /millennium_development_goals/child _mortality/en/. Accessed on May, 2015.at URL; http://www.whoint/topics /millennium_development _goals/child_mortality/en/
20. Pakistan Institute of Legislative Development and Administrative Transparency, Vaccination coverage of 2014 [online] cited in 2015. Available at URL; https;//sdpi.org/publications/files/ POVERTY_AND_SOCIAL_IMPACT_ANALYSIS%20(W-143).pdf. Accessed on May 2015. www.pildat.org/publications/.../Immunizationinpakistanurdu.pdf
21. Pakistan Demographic Health Survey 2012-2013[Internet]. Islamabad: National institute of Population Studies; 2014. Available from: http://www.nips.org.pk/abstract_files/ PDHS%20Final%20Report%20as%20of%20Jan%2022-2014.pdf. Accessed on May, 2015.