

Client Satisfaction with Immunization Services in Urban Slums of Lucknow District

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ABSTRACT

Objective. To assess the satisfaction of parents with the immunization services and its association with their sociodemographic characteristics.

Methods. The study was a part of the coverage evaluation survey conducted using the WHO 30 cluster sampling methodology in the Urban slums of Lucknow district, north India. Analysis for a total of 388 respondents of completely or partially immunized children, was done to assess the level of satisfaction and its determinants.

Results. The overall satisfaction was more than 90% in the respondents of both the categories of the children, however the difference between the satisfaction rates was found to be significant. Also the satisfaction with accessibility ($p<0.04$) and information given by the health worker ($p<0.00$) differed significantly between completely and partially immunized. Most of the sociodemographic factors were not found to have a significant association with the satisfaction related to different parameters of the immunization services.

Conclusion. The dissatisfaction regarding the various aspects of immunization services emphasizes the imperative need to intervene, for the achieving the goal of universal immunization. [Indian J Pediatr 2009; 76 (5) : 479-483] E-mail: bholanath75@yahoo.co.in

Key words : Client satisfaction; Immunization services; Sociodemographic characteristics

Childhood immunization is considered to be among the most effective preventive services, and is therefore critical to monitor and evaluate.¹ Several studies have been conducted to find out the reasons for the non-attainment of the goal of universal immunization even after more than 20 years of implementation of the Universal Immunization Programme.² Most of these studies have tried to focus on the deficiencies in the beneficiaries and tried to evaluate the effect of lack of knowledge, untoward beliefs and negative attitudes towards the immunization. Research on parental health beliefs and attitudes often assumes that parents decline immunization or are simply less knowledgeable and persistent in the health care setting without examining their access and utilization of well-child care.^{3,4,5} The other side of the system, that is, the deficiencies on the

provider side largely remain unaccounted for, till now. These can equally be responsible for the unimmunized status of the children due to the lack of appropriate information and above all the dissatisfaction with the services which has a bearing on the utilization of the services and consistency of the visits for receiving all the doses of the vaccines, so as to achieve a complete immunization status. In addition to promoting appropriate utilization, a satisfied patient is more likely to develop a deeper and long-lasting relationship with their medical provider, leading to improved compliance, continuity of care, and ultimately better health care outcomes.⁶

The present study was conducted in the urban slums of Lucknow district, a centrally placed, capital city of the most populous Indian state - Uttar Pradesh to assess the satisfaction of the respondents with the various aspects of their interactions with the immunization services as well as its association with their sociodemographic characteristics.⁷

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MATERIAL AND METHODS

A cross sectional survey was conducted from January 2005 to April 2005, among the children of age group 12-23 months in the urban slums of Lucknow district, using the WHO 30 cluster survey methodology.⁸ The total number of children studied were 510, with 17 children in each cluster ($p = 0.21$ (proportion of fully immunized children aged 12-23 months, in Uttar Pradesh, according to National Family Health Survey-2 (NFHS-2), confidence limit = 95%, absolute precision (d) = 5%, design effect = 2).^{9,10} However, the assessment of satisfaction was done for a total of 388 respondents only, who had availed the immunization services on at least one occasion. The satisfaction regarding the various parameters was compared in the completely and partially immunized groups. The child was considered as 'completely immunized' if he/she had received one dose each of BCG and measles, and 3 doses each of DPT and polio (excluding polio 0 dose) by his/her first birthday. Those, who had missed any one vaccine out of the 6 primary vaccines were described as 'partially immunized'.

A pre-tested structured questionnaire was used to elicit the response of the respondents regarding their satisfaction with the various aspects of immunization services including the information provided by the health worker about the schedule of the next dose as well as reactions of the vaccination. Data was also collected on the suggestions highlighted by the respondents to improve the coverage of the vaccination services. The primary respondent was the mother of the child, and in case of her absence, the father acted as the next respondent. In case of absence of both of them, an adult in the household who remained with the child for most of the time or had taken the child for immunization on at least one occasion was interviewed. Statistical analysis was done by using the software Epi Info-6 and Microsoft Excel Analysis Toolpak. The satisfaction was graded as unsatisfactory (0-20%),

satisfactory (20-40%), good (40-60%), very good (60-80%) and excellent (80-100%). The significance of difference between the proportions and the mean was obtained by the Chi-square tests and the z-test respectively. A p-value of less than 0.05 was considered significant.

RESULTS

Table 1 shows that satisfaction with accessibility and with information given by health worker had significant association with the immunization status. On exploring the details of the satisfaction with accessibility, it was observed that the respondents of the partially immunized children were more satisfied than that of completely immunized group at a distance of less than 2 kms, while it was opposite for more than 2 kms (not shown in table). However, the differences were not found to be significant. The overall satisfaction rate was significantly more in respondents of completely immunized children as compared to that of partially immunized children. The satisfaction regarding the information about the requirement of additional doses of DPT and Polio and instructions about the time and place of the next visit differed significantly between the respondents of completely and the partially immunized groups. Satisfaction regarding other aspects of information were better in the respondents of completely immunized group as compared to the partially immunized but the differences were not significant (Table 2).

Most of the sociodemographic factors except a few were not found to have a significant association with the satisfaction related to different parameters of the immunization services. The respondents of partially immunized children demanded more regular visits of the auxiliary nurse midwife (ANM) to their slum area, daily administration of all the vaccines instead of on the fixed days, imparting more knowledge about the

TABLE 1. Distribution of Respondents According to Satisfaction with The Services Available at the Site of Vaccination

Parameters of satisfaction	Satisfaction in Respondents of				Significance	
	Completely immunized (N1=225)		Partially immunized (N2=163)			
	N	%	N	%	χ^2	p
Easy accessibility	220	97.8	153	93.9	3.89	0.04
Waiting time (Mean \pm SD) in minutes	19.2 ± 25.9		17.6 ± 19.3		1.95*	0.49
Satisfaction with waiting time	209	92.9	151	92.6	0.01	0.92
Availability of vaccines	206	91.6	146	89.6	0.44	0.50
Satisfied with information given by health worker	220	97.8	141	86.5	18.51	0.00
Satisfied with behavior of health worker	224	99.6	158	96.9	2.72	0.09
Overall satisfaction (%) [†]	95.9		91.9		13.97	0.00

* z score; [†]Ratio of sum of numerators of all the variables and the sum of all the denominators of the variables; p value < 0.05 is significant

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vaccination and information regarding the time and place of the next visit. Other important suggestions from both the groups included provision of vaccination services at the home and organization of the camps (not shown in table).

DISCUSSION

Till date, several studies have been conducted in various parts of the world to find out the reasons of incomplete coverage of immunization despite the arduous and spirited efforts of the government and various other agencies, which have been trying to combat the deadly march of the six preventable childhood diseases. The quest to find out the factors for non-attainment of the goal of universal immunization has been primarily focused on the deficiencies on the beneficiaries' side presuming that the services that are provided are perfect and without any flaw. In the present study, we have tried to explore the deficient areas of the service provision to have a look at the other side of the coin.

In the present study results of overall satisfaction were excellent in both the groups but differed significantly between them. A study conducted by Manjunath *et al* in Pilani, Rajasthan, India also revealed that all the mothers of fully immunized children were satisfied and that the numbers decreased for partially immunized groups.¹¹ The results of the overall satisfaction with the immunization services in the present study also corroborated with a study done in Piemonte, Italy.¹² Another study in United States revealed that parents who were less satisfied with their children's health care, were less likely to bring their children in for age-appropriate care indicating the long term effects of the satisfaction with the immunization services on the health of the child.¹³

The findings in the present study are similar to several studies, such as those conducted by Ghosh *et al*, Ughade *et al* and Yadav *et al* who found that increase in the distance of the immunization centre led to unfavorable affect on the immunization status of the child although they did not comment on the satisfaction regarding the same.^{14,15,16} The dissatisfaction regarding the waiting time is also a cause for concern in both the groups. Accessibility and waiting time are the two parameters involving a time factor and any health measure which costs time and money to a daily bread earner, will strongly be discouraged by him because a poor man cannot visualize the long term benefits of a program when his daily wage is at stake. Therefore, the importance of accessibility and the waiting cannot be overemphasized and need to be given sufficient attention for the success of the program.

Another area that was reported to be deficient significantly by the partially immunized group was the satisfaction with the information provided. Several studies in India, as well as in other countries have concluded that the reasons for partial and non-immunization are usually due to lack of informations but most of them do not differentiate, whether it was due to parental carelessness or dissatisfaction resulting from lacunae on the provider side.^{11,16,17,18} BN significantly lower level of satisfaction regarding the information about various aspects of immunization in the respondents of partially immunized groups, emphasizes the need for reinforcement of health promotion activities, which can be done by organizing training sessions for the health workers with due emphasis on these *hitherto* neglected aspects along with the development of technical expertise.

Studies done in other countries have revealed that dissatisfaction with child care is strongly related to poor communication skills during well-child visits,

TABLE 2. Distribution of Respondents According to the Satisfaction with the Information Given at the site of Vaccination

Parameters of satisfaction	Satisfaction in Respondents of					
	Completely immunized (N1=225)		Partially immunized (N2=163)		Significance	
	N	%	N	%	χ^2	P
Did the doctor/ health worker tell you that additional doses are required for DPT and polio?	223	99.1	142	87.1	22.3	0.00
Instructions about time and place of next visit.	224	99.6	140	85.9	28.1	0.00
Did the health worker tell you about occurrence of fever after DPT and its management?	219	97.3	133/142*	93.7	3.0	0.08
Did the health worker tell you about scab formation after BCG?	217	96.4	120/130*	92.3	2.9	0.09
Did the health worker tell you about the importance of immunization?	105	46.7	62	38.0	2.9	0.09

p value < 0.05 is significant, * shows the value of denominator

but we did not observe any significant difference in the satisfaction with the behavior of the health workers among the two groups of respondents.^{13,19} The absence of a significant association of most of the sociodemographic characteristics of the beneficiaries with the satisfaction regarding the various parameters of immunization emphasizes the role of the provision of the better services in enhancing the level of satisfaction.

The suggestions highlighted by the respondents reinforced the findings of the study, specially the demand for the vaccination at home or through the fortnightly camps and the need for health promotion activities. The study conducted by Manjunath *et al* also revealed the interpersonal approach (direct interactions with the ANM, door to door campaign, doctor's advice *etc*) as the most effective way to improve the success of the existing program.¹¹ Among other suggestions highlighted by the respondents, was the maintenance of regular supply of vaccines, which has also been reported by Balraj *et al* in their study.²⁰ The respondents also suggested that vaccination should not be denied to any child, even if one child is present at the site of vaccination. This might require the manufacturing and marketing of vaccines in smaller dose vials, to prevent wastage and simultaneously satisfy the beneficiaries, although it would not be without an increase in the cost of the whole process. However, the policy makers need to strike a balance between the containment of the cost and the achievement of the targets.

LIMITATIONS

Satisfaction with the health services also depends on the number of patients attending the health facility and the consequent burden on the health worker, which could not be studied here. Also, the respondents who visited the health facility during the later hours of the day would be less satisfied as compared to those visiting earlier. The inability to directly compare the level of satisfaction in our sample with others highlights another study limitation.

CONCLUSION

Achievement of the goal of universal immunization in the disadvantaged vulnerable urban population requires a coordinated effort and efficient strategy specifically tailored to the existing situation. This requires narrowing the gap between the demand and supply through improved interpersonal communication, which can be translated into a change in the behavior.

Some administrative steps also needed to be taken to improve the accessibility and reduce the waiting time. Involvement of the private agencies and other stakeholders may lend the much needed political, civil society and media pressure and periodic uproar on the issue for the attainment of the goal of universal immunization.

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REFERENCES

1. Maciosek MV, Coffield AB, Edwards NM, Flottemesch TJ, Goodman MJ, Solberg LI. Priorities among effective clinical preventive services: results of a systematic review and analysis. *Am J Prev Med* 2006; 31: 52-61.
2. Maternal and Child Health Programme. Ministry of Health and Family Welfare. Available from <http://mohfw.nic.in/reports/Annual%20Report%201992-93/chap-VI.pdf>
3. Prislin R, Dyer JA, Blakely CH, Johnson CD. Immunization status and sociodemographic characteristics: the mediating role of beliefs, attitudes, and perceived control. *Am J Public Health* 1998; 88: 1821-1826.
4. Gust DA, Strine TW, Maurice E *et al*. Underimmunization among children: effects of vaccine safety concerns on immunization status. *Pediatrics* 2004; 114: e16-e22.
5. Bennett P, Smith C. Parents attitudinal and social influences on childhood vaccination. *Health Educ Res* 1992; 7: 341-348.
6. Williams SJ, Calnan M. Key determinants of consumer satisfaction with general practice. *Fam Pract* 1991; 8:237-242.
7. Uttar Pradesh, Census of India. 2001. Available from http://www.censusindia.gov.in/Tables_Published/SCST/dh_sc_up.pdf
8. Henderson RH, Sundaresan T. Cluster sampling to assess immunization coverage: a review of experience with a simplified sample method. *Bull World Health Organ* 1982; 60: 253-260.
9. National Family Health Survey-2, India (1998-99). International Institute of Population Sciences; Mumbai, 2000.
10. Lwanga SK, Lemeshow S. *Sample size determination in Health studies: a practical manual*. Geneva; World Health Organization, 1991.
11. Manjunath U, Pareek RP. Maternal Knowledge and perception about the routine immunization programme: a

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study on a semi urban area in Rajasthan. *Indian J Med Sci* 2003; 57: 158-163.

12. Barale A, Malaspina S, Rivetti D, Demicheli V, Moiraghi RA. Satisfaction of parents or accompanying persons with vaccination services for children and youngsters being vaccinated. *Ann Ig* 2004; 16: 179-186.
13. Ashley HS, Cynthia SM, Donna MS, Bernard G. Parental satisfaction with early pediatric care and immunization of young children the mediating role of age-appropriate well-child care utilization. *Arch Pediatr Adolesc Med* 2007; 161: 50-56.
14. Ghosh A, Singh LL. Child immunization in rural West Bengal (India): A multilevel analysis". Paper presented at: 2004 Annual Meeting Programme of the Population Association of America. *Boston Massachusetts* 2004; 1-3.
15. Ugadhe SN, Zodpey SP, Deshpandey SG, Jain D. Factors responsible for delayed immunization among children under 5 years of age. *J Indian Med Assoc* 2000; 98: 4-5, 14.
16. Yadav RJ, Singh P. Immunization status of children and mothers in the state of Madhya Pradesh. *Indian J Community Med* 2004; 29: 147-148.
17. Singh MC, Badole CM, Singh MP. Immunization coverage and the knowledge and practice of mothers regarding immunization in rural area. *Indian J Pub Hlth* 1994; 38: 103-107.
18. Salmoso S, Rota MC, Ciofi ML, Tozzi AE. Infant immunization coverage in Italy: estimates by simultaneous EPI cluster surveys of regions. *Bull World Health Organ* 1999; 77: 843-851.
19. Homer CJ, Fowler FJ, Gallagher PM et al. The consumer assessment of health plan study (CAHPS) survey of children's health care. *Jt Comm J Qual Improv* 1999; 25: 369-377.
20. Balraj V, Mukundan S, Samuel R, John TJ. Factors affecting immunization coverage levels in a district of India. *Int J Epidemiol* 1993; 22: 1146-1153.
