

## Estimating the Out of Pocket Expenditure for Parents coming in an Immunization Clinic of Ghaziabad.

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**Abstract:** Out of pocket expenses on the higher side is a permanent feature of Indian health care financing system , with surmounting evidence of increase in stress on individuals and households owing to the ever increasing budgetary allocation for health related expenses . Myriad reasons have been documented for reasons to explore behind not getting the child immunized on time or completing the vaccines as per the local schedules. Supply side determinants are mainly observed as poor availability of the vaccine on the day of vaccination which ultimately can pinch the pocket of the individual or the family household income as the place where supply side is not lacking is usually situated in the block or district headquarters which can be far off for some families. Objective of the study was to 1) Understand the socioeconomic condition of the parents coming to the Immunization clinic of Muradnagar 2) Understand the relationship of Out of Pocket Expense and immunization status of the child if any . This study was a cross sectional observational study done in Hospital setting. We found significant relationship between age <6 months and age specific vaccinated children and Out of pocket expenses on the lesser side.

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### I. Introduction

Out of pocket expenses on the higher side is a permanent feature of Indian health care financing system , with surmounting evidence of increase in stress on individuals and households owing to the ever increasing budgetary allocation for health related expenses . (1,2) Yearly national household surveys have only substantiated this ever rising burden on the total budgetary allocation of society and household . (3) Government of India and State Governments have realized this and have started various initiatives , programmes to decrease the load on Individual households and society as whole , Immunization services in villages , PHCs , community health centers and district hospitals including medical colleges perhaps as one of the most prominent programmes which not only aims to curb the out of pocket expenses of the households and individual households but also is able to prevent various vaccine preventable diseases which ultimately is saving millions for the country . (4, 5)

India has been unique in the various studies finding out that the outpatient visits are more impoverishing than in patient care both in rural and urban health care settings. (6)

Uttar Pradesh, a northern state of India, have showed a significant increase in Routine Immunization (the main stay of the vaccination schemes in India for children) coverage. The percentage of fully immunized children (received BCG, 3 DPTs, 3 OPVs and Measles) in the State has increased from 64% in 2010 to 78% in 2015. This rise has been steady but more is desired as the Government of India aims for RI improvement by means of improved Full Immunization coverage of 90%. (7, 8) Globally myriad reasons have been documented for reasons to explore behind not getting the child immunized on time or completing the vaccines as per the local schedules. (9,10) . Evidence from India suggest the key determining factors for immunization to be Demand side and Supply side with district per capita income a strong predictor for better immunization status of its children . (11) Supply side determinants are mainly observed as poor availability of the vaccine on the day of vaccination which ultimately can pinch the pocket of the individual or the family household income as the place where supply side is not lacking is usually situated in the block or district headquarters which can be far off for some families. (12)

Taking a stock of the above findings its certain that many avenues still are unexplored in order to understand why the Immunization in children is not getting up to 90 or 95% as mostly desired across the country for better results.

This study was conceived with an aim to understand the problems being faced in terms of monetary expense (out of pocket expense) by local people who attend Immunization clinic of Muradnagar CHC in Ghaziabad district, during vaccination of their children. Objective of the study was to 1) Understand the

socioeconomic condition of the parents coming to the Immunization clinic of Muradnagar 2) Understand the relationship of Out of Pocket Expense and immunization status of the child if any .

## II. Methodology

The study was piloted and formalized in the Department of Community Medicine, Santosh Medical College and Hospital. A semi structured questionnaire was prepared in the department to capture the SES of the parents, while other section of the questionnaire tried to get a rough estimate of the cost being incurred by the parents on getting their children in the center. An IEC clearance was sought from the Institutional Review Board of the University after its approval the study progressed.

This study was a cross sectional observational study done in Hospital setting.

Study was done from October 2017- April 2018.

Every alternate working day 4 random Parents coming with their children for getting the child immunized were approached, explained about the study and were asked for their consent to participate if they showed willingness to be a part of the study. A sample size of 138 parents were obtained thus in the study duration. MCP cards were reviewed to assess the immunization status of the children while questions were asked to get a rough idea about the cost being incurred by them in getting their children at the center. All willing parents who gave consent to participate in the study were included.

Data was collected on the hard copies of the filled questionnaire which was later entered in the soft version on MS Excel templates.

Data analysis was done using the SPSS version 18 software while statistical tests like chi square, and other statistical measures were used to arrive at conclusions. p value of <.05 was considered to be of statistical significance .

## III. Results

**Table 1. SES distribution of the parents interviewed**

<b>Gender n= 138</b>	<b>Male</b>	<b>56</b>	40.58 %
	<b>Female</b>	<b>82</b>	59.42 %
<b>Age</b>	<b>&lt;30</b>	<b>48</b>	34.78 %
	<b>&gt;30</b>	<b>90</b>	65.22 %
<b>Occupation</b>	<b>Skilled</b>	<b>62</b>	44.93 %
	<b>Unskilled</b>	<b>76</b>	55.07 %
<b>Education</b>	<b>Passed 10<sup>th</sup> or more</b>	<b>70</b>	50.72 %
	<b>Not passed 10<sup>th</sup> or less</b>	<b>68</b>	50.28 %
<b>Income of household</b>	<b>Less than 5000</b>	<b>87</b>	63.04 %
	<b>More than 5000</b>	<b>51</b>	36.96 %
<b>Distance from CHC Muradnagar</b>	<b>Less than or equal to 5kms</b>	<b>58</b>	42.03 %
	<b>More than or equal to 5kms</b>	<b>80</b>	57.97 %

**Table 2: Immunization Status of the Children who received vaccination in the Immunization Centre**

<b>Gender of the Immunized Child</b>	<b>Male</b>	76	55.07 %
	<b>Female</b>	62	44.93 %
<b>Age of the immunized Child</b>	<b>&lt;6 months</b>	59	42.75 %
	<b>6 months</b>	12	8.70 %
	<b>&gt;6- &lt;9 months</b>	20	14.49 %
	<b>&gt;9-&lt;24 months</b>	31	22.46 %
	<b>&gt;24 months -&lt;5 years</b>	16	11.59 %
<b>Immunization Status</b>	<b>Age Specific Vaccinated</b>	40	28.99 %
	<b>Age Specific Vaccination Missing</b>	20	14.49 %
	<b>Fully Immunized</b>	61	44.20 %
	<b>Partially Immunized</b>	12	8.70 %
	<b>Completely Immunized</b>	5	3.62 %

**Table 3: A break up of the various domains of measured out of pocket expenses incurred by the parents when coming to the Immunization clinic.**

Cost Domain	Response	Mean (INR)	Median (INR)	SD	Min (INR)	Max (INR)
Travel	138	170	65	20	0	280
Registration	138	3	0	0	3	3
Drugs/Medicine	43	150	104	34	0	204
Others	20	25	17	2	0	28
Total Out of Pocket Expenditure	138	78	35.5	10	0	324
Family Income	138	3500	340	243	500	7000

**Table 4. Chi square test applied to obtain p values relating various variables with categories of Total Out of Pocket Expenses.**

Variables		Total Out of Pocket Expense			Total	p value	
		<50 INR	>50-<100 (INR)	>100 (INR)			
Age of the immunized Child	<6 months	59	12	32	15	59	<.05
	6 months	12	0	50	9	59	>.05
	>6- <9 months	20	2	8	10	20	>.05
	>9-<24 months	31	12	4	15	31	<.05
	>24 months -<5 years	16	2	5	9	16	>.05
Immunization Status	Age Specific Vaccinated	40	14	24	2	40	<.05
	Age Specific Vaccination Missing	20	3	9	8	20	<.05
	Fully Immunized	61	16	23	21	60	<.05
	Partially Immunized	12	4	2	6	12	>.05
	Completely Immunized	5	1	3	1	5	>.05

#### IV. Discussion

The present study gives an insight of the cost which are incurred on the families when they decide to vaccinate their children owing to lack of vaccination near to their homes. Though we have not captured the various reasons for their coming this far or coming to us separately but during formal talks many were of the opinion that they could have got the vaccines near their homes thus by saving time and money . However many families were residing very near to the CHC and were happy to be in the clinics for immunizing the child in our CHC. In our study we had majority females who accompanied their children for immunization thus by incurring Out of pocket expenses. (table 1) Majority of the study participants were unskilled, having income less than 5000/month and not completed class 10<sup>th</sup>. (table 1) . The Immunization status of the child were also evaluated and we found 80% of children to be immunized as per their age according to the National Immunization Schedule . (table 2) . The evaluation of out of pocket expenses was divided in various domain like , Travel , registration, drugs and other and all were totaled to calculate the final out of pocket expense . Few respondents needed to buy any drugs while majority had to spend little amount while registering to get the vaccines ( Table 3) Travel was the main contributor to out of pocket expenses while for some drugs were needed which made their journey a costly one . A mean value of INR 78 was found out after considering all the expenses. We also tried to see association of Out of pocket experience categorized in three denominations and comparing that with other variables of immunization and child age (Table 4). We found significant relationship between age <6 months and age specific vaccinated children and Out of pocket expenses on the lesser side.

Studies conducted elsewhere in India have documented the out of pocket expenses for drugs and travel on the higher side ranging from 3 – 380 which is almost .05% of their family incomes as a whole. Other studies in India focused on the OOP when the patients visited the hospitals for complete treatment, not for Immunization only . (13,14,15) . Our study is unique in its attempt to find out only the cost incurred when coming for immunization in a hospital setting.

Limitations of the Study ; It was done in hospital set up .

#### V. Conclusions

Immunization services are an important aspect of public health. The demand side and supply side need to be at par for minimizing the cost incurred by parents to get their children vaccinated. These costs can be in any form right from drugs to sundry things while coming to the hospital. For some families the household income is to less even to have the luxury of these sundry things and that Out of pocket expense can be a major portion of their Income. Supply of vaccines at the designated near to home of people living in far off areas are a must to have a better immunization coverage.

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