

Women Autonomy, Nutritional and Immunization Status of their Children

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Abstract

This paper examines the impact of women's autonomy on their children's nutritional and immunization status. The main objectives of the paper are to see the women's decision making power in different socio-economic conditions and how far different levels of decision making power influence their children's nutritional health and immunization status. We have used third round of National Family Health Survey data and the sample size is 39,879 comprising women of age (15-49) years having their last child with age (0-59) months. Women's autonomy has been assessed through the four aspects of decision making, namely on own health care, large household purchase, mobility to relatives' house or other family members' house and ability to spend husband's money. Children's nutritional health status has been assessed through 'z' score value of weight for age and height for age. Immunization status has been assessed through the criteria of one dose of BCG, 3 doses of DPT and Polio and one dose of measles taken within the 12-23 months. Socio-economic variables are type of residence, women's educational and occupational status, type of ethnic group and wealth index of the family. The study reveals that the welfare of children depends on the consciousness and awareness of the mother. Awareness is directly related with the mothers white colored job and this job is dependent on women's higher education. We can take welfare of children as an indicator of autonomy of mothers because autonomy of mothers has the highest effect on nutritional and immunization status of children.

Keywords: Women autonomy; Socioeconomic condition; Child health and nutritional status; Wealth index; India

Introduction

Researchers have different opinions on women autonomy. Caldwell [1] defines autonomy as the opportunities for women to receive education and to work outside the home. According to Miles-Doan and Bishrat [2], autonomy is a woman's position within household power relations i.e. her bargaining power. Mason [3] defines autonomy as control over household and societal resources while Jeejeeboy and Sathar [4] state that autonomy consists of five interrelated components like knowledge or experience acquired; decision-making power; physical autonomy which includes freedom of movement; emotional autonomy and economic and social autonomy which includes access to and control over resources. But very often, different concepts of status of autonomy overlap from one definition to the other. For instance, Cain [5] defines status that includes participation in domestic decision-making and freedom of movement. The word, autonomy and status of women are very often interchangeable. However to be more precise, autonomy may be defined as the ability to control by one's self, whereas status may mean the access to different type of, resources [3]. Broadly speaking, women with low status also implies women with weaker control over household resources, higher time constraints, less access to information about health services, poor mental health and lower self esteem. These factors are thought to be closely tied to women's own nutritional status which may cause low birth weight of children, and low quality of care received by the children. Early research on this topic focused on the fertility or fertility transition. But now recently, researchers have begun to investigate the role of women autonomy on the status of their own health as well as the health of their children.

From the comparison between two developing countries -- one from South Asia and the other from Sub-Saharan Africa, it is seen that child malnutrition in South Asia (49.3%) is much higher than that of Sub-Saharan Africa (31.1%), but in terms of poverty index, condition of Sub-Saharan Africa (39.1%) is worse than that of South Asia (43.1%). It is because of the existence of higher proportion of low status of

women in South Asia. Increase in the status of women has a strong influence on both the long and short term nutritional status of children leading to reduction in both stunting and wasting. This phenomenon is conspicuously observed in South Asia. The study estimates that if men and women have equal status, the percentage of underweight under-three children would drop by approx. 13 percent in South Asia whereas in Sub-Saharan Africa it would drop only by 3% [6]. Thus it seems that only higher status women enjoy better child nutrition and immunization. It is also found that women with greater control of decision-making power in their households have better health of their own and of their children than women having lower decision making power in the family [1,7-11].

Gujarat, one of the states in India, exemplified a remarkable feeling of constraints regarding cash expenditures among the women [12]. According to Visaria [12], about 50% women do not feel free to take sick child to doctor without the approval of their husband or in-laws and 70% women do not have any liberty to purchase their own or children's clothing. Uttar Pradesh, women with greater autonomy, antenatal care and safe delivery is better than women having lesser decision making power [13]. Similar findings have been found in many parts of the world [14,15].

To study the women autonomy, household level data on the human

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behavior on the autonomy which reflects the women status that affect child nutrition have been used. Besides Demographic and Health Survey data, no empirical research has yet linked the status of women's autonomy with their child nutritional status. Using national level data of India, this paper examines the impact of women autonomy to their children's nutritional and immunization status. The main objectives of the paper are to see (i) the women's decision making power in different socio-economic conditions; and (ii) how far different levels of decision making power influence their children's nutritional health and immunization status.

Methodology

For this study we have used the National Family Health Survey (NFHS-III) data conducted by the International Institute for Population Sciences (IIPS) Mumbai in 2005-06 [16]. Here the study is based on 39,879 sampled women, aged (15-49) years and their last children aged 0-59 months taken from all the major Indian states at the time of the survey.

The variables through which women's autonomy has been assessed are the decision making power of women in four aspects on namely, 'own health care', 'large household purchase', 'mobility to relative's house or other family members' and 'spending husband's money'. The health care autonomy addresses the issue whether women can take decision about her own health care. Large household purchase means whether women can take decision on buying large or costly household things in their family. The freedom of movement means the freedom to move to relative's house or market and lastly, economic autonomy are assessed through whether women can spend their husband's earnings for the family members or for herself without her husband's consent.

The background variables of assessing autonomy of women are type of place, educational attainment of women, ethnic composition, occupational categories of women and wealth index of the family. Z-score is defined as the deviation of the value observed for an individual from the median of the reference population, divided by the standard deviation (SD) of the reference population (followed WHO, 2006), i.e.,

$$Z\text{-score} = \frac{(\text{observed value}) - (\text{median of the reference population})}{(\text{SD of the reference population})}$$

Following WHO, 2006, the Z-score is classified into three groups-below normal (≤ -2), normal ($-2 < \geq < 2$) and above average ($\geq +2$). We have taken combination of four immunizations. Complete immunization means one dose of BCG, 3 doses of DPT and Polio and one dose of measles taken within the 12-23 months of birth children received before the survey (NFHS-3, 2005-06). Independent variables are socio-economic variables like places of residence are taken as "rural" and "urban". Educational status are grouped into four categories such as illiterate (those who can neither read nor write), primary (literate but less than or equal to class IV standard), secondary (class V to class X standard) and the fourth group is class XI and onwards (i.e. Higher Secondary, Graduate or Post graduate etc). Four types of castes and tribes are considered. These are Scheduled Tribe (ST), Scheduled Caste (SC), Other Backward Classes (OBC) and 'Others' which includes all groups other than OBC, SC and ST. Occupations of the women are clubbed into four major groups namely 'not working', engaged in 'professionals, services or sales', 'agriculture related work 'mainly engaged as agriculture labours, and skilled, unskilled or manual labourers'. Wealth index is a measure of the economic status of the household [17]. Though it is an indicator of the level of the wealth in the household, it is consistent with expenditure and income measure. It is

based on 33 household assets and housing characteristics like household electrification, type of windows, sources of drinking water, types of toilet facility, flooring, roofing, cooking fuel and house ownership, material of exterior walls, number of household members per sleeping room, ownership of a bank or post-office account, ownership of a mattress, a pressure cooker, a chair, a cot/bed, a table, an electric fan, a radio/ transistor, a black & white television, a colour television, a sewing machine, a mobile telephone, and any other telephone, a computer, a refrigerator, a watch or clock, a bicycle, a motorcycle or scooter, an animal-drawn cart, a car, a water pump, a thresher, and a tractor. Here each household asset was assigned a weight generated through principal component analysis and the resulting score was standardized in relation to a normal distribution and each household was assigned a score for each asset and the scores were summed for each household and individuals were ranked according to the score of the household and the scores were divided into five quintile groups starting from lower strata to higher strata namely the poorest, poorer, medium, richer and richest.

With four types of autonomy, it is possible to make 16 combinations. To see the differentials of women's autonomy in relation to socio-economic background, combinations of women's autonomy and their children's nutritional and immunization status and the percentage distribution of the respective characteristics have been considered. Logistic regression of women's autonomy has also been taken with socio-economic variables and nutritional status as well as immunization status as independent variables. All the independent variables for the logistic regression are taken as categorical. An estimated odd ratio of '1' indicates that the nature of dependent variable is not different from the reference category. If the estimated odd ratio is >1 , the probability of becoming malnourished is more in this category compared to the reference category and if it is <1 , then it is just opposite to that of ' >1 ' case. The calculation has been done using the twelfth version of SPSS (Statistical Package for Social Science). Significance levels of $p < 0.01$ and 0.05 have been used.

Results

Here women's decision making power has been measured through four spheres of day to day decision making namely own health care, large household purchase, going to relatives or friend's house and spending husband's earning. These four decision making powers are directly or indirectly related to the socio-economic characteristics of the household and cultural conditions of the society. Table 1 describes the relationship between different women's decision making power with their socio-economic conditions. The basic scenario is that the percentage of self-decision making of women is very meager compared to the joint decision making with their husband. Percentage of 'no decision making power' is also very high among the Indian women. Urban women have been seen to have a bit more decision making power than rural women except on husband's money where it is more or less equal for both the types of residents. Illiterate women have less autonomy than higher educated women though the difference is not so marked. But one exceptional feature on the use of husband's money is that the percentage of women having autonomy on this issue among illiterate women is nearly double than that of higher educated women. Not so marked differences have been noticed in case of caste differentiation. Among different categories of occupational activities of women, professional or service holder women have the highest percentage of autonomy followed by skilled or unskilled workers. The lowest positions are taken by the agro-employees and the non-working women. Women of richer families in terms of wealth index have higher

decision making power than other families. Surprisingly, it was found that the poorest class of women has the highest autonomy and the women in the household with the highest wealth index have the lowest autonomy.

Table 2 describes the relationship between socio-economic variables with their children's nutritional and immunization status. It is seen that socio-economic conditions have great influence on the children's nutritional and immunization status. Nutritional and immunization status of women in rural areas, belonging to Scheduled Castes/Scheduled Tribe families, with the poorest health index families or women who are illiterate, are comparatively in worst condition than those belonging to the extreme opposite groups namely in urban residence, with the highest education background of general castes and with the highest wealth index families. The health condition of professional or service -holder women have better health and immunized children and comparative to others and especially to the agro-employed women.

Table 3 shows the relationship between combinations of women's decision making power with the socio-economic conditions. It shows the distribution of families over categories of socio-economic variables for each of the sixteen combinations of the four decision making powers of women. It is seen that in India, 68.5% women have no decision making power at all. Approximately 21.4% women have the decision making power only in one of the four types whereas only 1.14% have power to take decision in all the four categories. It is also seen that for each of sixteen combinations of decision making, the differences are not so marked among the different categories of each of

the socio-economic variables. In other words, almost same percentages are observed over different combinations for each category of each of the socio-economic variable. Only one exception is that professional or service holder women have highest autonomy than all other categories of socio-economic variables. For most of the cases, women with no decision making power or the decision making power only on health issues constitute the highest percentage (85.2%).

Table 4 presents the relationship of combinations of decision making power with their children's nutritional and immunization status. It is seen that the health condition and immunization status of children are not much associated with the existence of four autonomy or no autonomy at all as the differences between them are very small. It is difficult to find the effect of each of decision making power on the immunization status without further analysis. Table 5 establishes the relationship between different types of women's decision making power with different socio-economic conditions through logistic regression. It is seen that in urban areas, different aspects of women's decision making power is more than in rural areas. Secondary and higher educated women are more prone to take decision in buying large household necessities and are more mobile. These results are statistically significant at 1% level of significance. But it is interesting to note that higher educated women have less decision making power on controlling husband's money than illiterate and primary educated women and the result is also statistically significant at 1 % level of significance. Scheduled Tribe women have more decision making power in mobility and buying large household things than other castes and communities and the result is statistically significant at 1 % level

	N	Women's Decision making power (%)											
		Own health care			Buying large household purchase			Mobility to relatives house or other family members			On husbands earned money		
		self	With husband	No	self	With husband	No	self	With husband	No	self	With husband	No
Place													
Rural	14781	23.9	37.0	39.1	5.5	44.5	50.1	8.8	49.3	41.9	5.0	62.6	32.5
Urban	25098	26.4	43.0	30.6	7.2	52.7	40.1	10.2	58.0	31.8	5.5	66.7	27.7
Highest education													
No education	15922	24.2	35.0	40.9	5.4	44.2	50.4	7.9	48.9	43.2	6.0	61.1	32.9
Primary	5789	23.2	39.3	37.6	6.5	46.7	46.8	9.0	51.5	39.5	4.8	62.8	32.4
Secondary	15089	25.1	42.2	32.7	6.5	48.8	44.7	10.3	54.7	35.0	4.8	65.8	29.4
Higher	3079	30.2	46.9	22.8	6.9	60.3	32.9	12.4	62.7	24.9	3.5	73.8	22.7
Caste/Tribe													
SC	7124	26.2	36.4	37.5	6.5	45.0	48.5	9.7	49.7	40.6	5.8	63.8	30.4
ST	6136	25.0	47.8	27.3	7.9	58.8	33.3	11.0	64.3	24.7	4.8	74.5	20.7
OBC	13280	22.6	36.5	40.8	5.7	44.0	50.3	7.7	49.4	42.9	5.4	61.1	33.4
General castes	11571	27.0	39.5	33.4	5.7	47.2	47.1	9.9	52.1	38.0	4.8	63.2	32.1
Women's occupation													
Not working	25866	25.0	39.1	35.9	5.9	46.4	47.7	9.1	51.5	39.4	5.3	62.1	32.6
Prof/sales/serv.	2505	32.1	47.1	20.9	10.5	62.4	27.1	13.6	64.9	21.5	6.3	76.2	17.6
Agro-employee	8675	21.6	37.4	41.0	5.2	45.5	49.4	8.3	51.2	40.4	4.4	64.7	30.9
Skilled/unskilled/man.	2807	26.4	39.6	34.0	6.7	50.8	42.5	10.6	54.9	34.5	5.3	69.9	24.8
Wealth index													
Poorest	6984	23.8	35.6	40.6	6.1	45.8	48.1	7.8	49.4	42.8	5.7	64.5	29.8
Poorer	7254	23.5	37.4	39.1	5.5	45.6	48.9	8.3	50.8	40.9	5.6	62.4	32.0
Middle	8294	22.4	40.1	37.5	6.0	46.6	47.4	9.0	51.6	39.4	5.6	62.9	31.5
Higher	8924	25.6	40.3	34.0	7.1	47.4	45.5	10.5	52.7	36.8	5.5	63.4	31.1
Highest	843	28.3	42.0	29.7	5.6	51.8	42.6	10.5	57.4	32.1	3.7	67.1	29.2

Table 1: Relationship between women's different decision making power with their socio-economic conditions

Variables	N	Children's health status		Immunization status				
		Underweight	Stunted	BCG	DPT	Polio	Measles	Complete
Place								
immunization								
Urban	14781	29.6	36.9	84.7	66.4	78.6	63.4	51.7
Rural								
	25098	41.6	47.6	73.2	50.6	71.4	49.7	37.1
Women Highest education								
No education	15922	48.9	54.7	62.4	38.0	68.8	38.4	26.7
Primary	5789	39.9	47.3	77.6	54.7	72.3	53.5	41.1
Secondary	15089	28.4	35.7	89.2	70.8	78.0	67.6	54.5
Higher								
	3079	14.3	18.1	97.4	85.3	85.6	79.2	68.6
Caste/Tribe								
SC	7124	44.3	50.4	77.3	54.7	74.2	54.7	41.5
ST	6136	39.7	46.9	67.3	44.8	62.8	42.8	30.8
OBC	13280	40.0	45.9	75.6	53.5	77.3	52.5	40.4
General castes								
	11571	29.3	35.9	84.6	66.0	77.2	63.6	51.4
Women's occupation								
Not working	25866	33.9	40.7	79.8	59.8	74.8	57.0	45.3
Prof/sales/serv.	2505	27.5	34.9	86.9	69.3	77.8	67.8	54.2
Agro-employee	8675	47.3	52.8	68.2	43.9	70.6	45.6	31.9
Skilled/unskilled/ Manual	2807	44.5	50.4	76.1	53.1	75.1	51.7	39.7
Wealth index								
Poorest	6984	55.8	58.6	59.0	33.1	65.2	34.3	22.3
Poorer	7254	46.8	53.2	65.9	42.0	68.3	41.7	29.5
Middle	8294	38.4	47.0	76.6	54.8	73.3	53.7	40.6
Higher	8924	31.0	39.1	85.9	65.9	77.4	62.6	49.7
Highest	8423	18.7	24.4	94.6	80.0	83.7	76.0	64.5

Table 2: Relationship between socio-economic variables and children's undernutrition and immunization status in India

of significance. Regarding different categories of women's occupation, professional or service holder women have the highest decision making power and agro-employed women have the lowest power. The result is statistically significant at 1% level of significance. Regarding wealth index, women belonging to the highest wealth index have high decision making power on own health care and mobility and the lowest power is seen in buying large household necessities and spending husband's money and the result is also statistically significant.

Table 6 confirms the relationship between different combinations of women autonomy with different socio-economic variables through logistic regression. It is seen that women autonomy is more among the women of urban areas, secondary and higher educated and professional or service holder women than its reference categories and the result is statistically significant at 1 % level. It is also very interesting to note that among the women who belong to the highest wealth index family have the lowest decision making power on controlling their husband's money than all other categories of wealth index. Relationship between combinations of women autonomy with the nutritional and immunization status has been further confirmed in the Table 7 through logistic regression. It is seen that those mothers with well nourished and immunized children have more decision making power.

Discussion

From the above result, it is seen that among Indian women, 68.5%

women have no autonomy in any of the four kinds of decision making powers considered in this paper. Women autonomy is found to be more among women of urban areas with secondary and higher levels of education and professionals or service holders than other categories of women. It is also seen that nutritional and immunization status is positively related with the mother's decision making power. These findings coincide with the findings of Koenen et al. [10] and Hossain et al. [11], who also found that women's autonomy was correlated with the measures of children's health. We have also found that mothers of underweight or stunted children have less decision making power. The causality seems to be both ways. One exception is noticed in case of autonomy on husband's earned money. Women of the poorest class have the highest autonomy and the women with the highest wealth index have the lowest autonomy.

Women's autonomy is only one aspect of status of women. Women autonomy is judged through the access to material resources like food, income, land while status of women is judged through the knowledge, power and prestige within the family, in the community or in the society. Thus women's status is not expected to be fully reflected by women autonomy. For example, One may observe that in India, 65.46% women are literate [18] but only 31.5% women have autonomy on the basis of the four indicators taken in our study.

Strictly speaking the welfare of children depends on the

Combinations of decision making among women (1=Yes, 0=No)				Socio-economic conditions of women																	
				N(%)	Place			Education		Caste/Religion				Occupation				Wealth Index			
0	0	0	0	68.50	66.31	69.79	69.95	66.77	66.90	66.62	71.35	66.66	68.29	60.12	72.14	66.94	70.50	70.18	69.96	67.22	65.33
0	0	1	0	2.85	3.00	2.76	2.40	3.39	2.82	3.68	2.33	1.15	2.80	3.07	2.80	3.27	2.12	2.60	3.05	3.11	3.22
0	1	0	0	1.37	1.57	1.25	1.21	1.57	1.43	2.08	1.25	1.18	1.36	1.99	1.25	1.28	1.26	1.09	1.53	1.60	1.30
0	1	1	0	0.46	0.59	0.38	0.36	0.57	0.46	0.72	0.34	1.16	0.44	0.72	0.40	0.53	0.30	0.44	0.53	0.51	0.47
1	0	0	0	16.71	17.56	16.20	16.23	17.28	17.43	15.99	15.35	18.74	17.16	18.52	14.69	17.06	15.89	16.07	14.96	16.62	19.75
1	0	1	0	2.64	2.84	2.52	2.15	3.22	2.96	3.05	1.96	1.16	2.47	4.47	2.56	2.78	2.10	2.15	2.36	2.71	3.69
1	1	0	0	0.98	1.19	0.86	0.82	1.17	1.01	1.49	0.85	0.90	0.89	2.23	0.82	1.10	1.04	0.65	0.87	1.12	1.18
1	1	1	0	1.29	1.38	1.24	1.16	1.46	1.21	1.59	1.12	1.44	1.24	2.59	0.91	1.71	1.12	1.24	1.11	1.58	1.37
0	0	0	1	1.36	1.38	1.35	1.61	1.06	1.29	1.30	1.51	1.18	1.43	1.32	1.25	1.06	1.44	1.67	1.67	1.12	0.97
0	0	1	1	0.19	0.21	0.18	0.14	0.25	0.34	0.16	0.12	0.19	0.18	0.21	0.22	0.18	0.13	0.16	0.22	0.25	0.19
0	1	0	1	0.25	0.35	0.19	0.23	0.28	0.43	0.21	0.23	0.19	0.26	0.39	0.16	0.25	0.20	0.27	0.29	0.33	0.14
0	1	1	1	0.18	0.20	0.17	0.20	0.16	0.14	0.24	0.23	1.13	0.20	0.12	0.17	0.07	0.23	0.09	0.30	0.19	0.09
1	0	0	1	1.08	1.00	1.12	1.22	0.91	1.28	0.85	1.21	0.98	1.10	1.19	0.95	1.14	1.23	1.23	1.18	1.08	0.71
1	0	1	1	0.54	0.53	0.55	0.55	0.54	0.51	0.42	0.47	0.66	0.62	0.56	0.22	0.85	0.48	0.43	0.54	0.73	0.51
1	1	0	1	0.42	0.43	0.42	0.51	0.32	0.53	0.45	0.53	0.22	0.40	0.59	0.39	0.57	0.61	0.51	0.52	0.39	0.13
1	1	1	1	1.14	1.41	0.98	1.24	1.02	1.25	1.11	1.11	1.18	1.09	1.87	1.03	1.17	1.32	1.19	0.89	1.41	0.90
All combinations (N)				39879	14781	25098	21711	18168	7124	6136	13280	11571	25866	2505	8675	2807	6984	7254	8294	8924	8423
All combinations (%)				100.0	37.06	62.93	54.44	45.55	17.86	15.38	33.30	29.01	64.86	6.28	21.75	7.04	17.51	18.19	20.79	20.79	21.12

Table 3: Relationship between combination of women's decision making power with their socio-economic conditions

Combination of own decision making power of Women (1=Yes, 0=No)				Children's health status			Children's immunization status				
Hlth care	Buying large hh.	Mobility	Hus. Mon	N	Underweight	Stunted	BCG	DPT	Polio	Measles	Complete immunization
0	0	0	0	68.50	37.5	76.8	76.8	55.2	74.1	53.4	41.3
0	0	1	0	2.85	33.6	81.1	81.1	61.3	73.9	59.1	47.8
0	1	0	0	1.37	36.2	81.5	81.5	61.1	72.7	58.1	44.8
0	1	1	0	0.46	33.3	79.8	79.8	63.9	76.0	60.1	51.4
1	0	0	0	16.71	37.2	79.1	79.1	59.4	73.5	58.4	45.4
1	0	1	0	2.64	33.8	81.1	81.1	62.2	75.1	63.4	48.4
1	1	0	0	0.98	31.9	78.3	78.3	60.2	73.0	57.9	45.9
1	1	1	0	1.29	32.3	79.8	79.8	60.9	76.0	59.9	47.8
0	0	0	1	1.36	38.5	74.6	74.6	52.7	72.3	52.7	38.1
0	0	1	1	0.19	19.5	74.0	74.0	68.8	79.2	54.5	46.8
0	1	0	1	0.25	44.4	80.0	80.0	60.0	70.0	56.0	45.0
0	1	1	1	0.18	37.0	82.2	82.2	68.5	79.5	69.4	57.5
1	0	0	1	1.08	45.6	70.5	70.5	46.4	79.5	44.5	32.8
1	0	1	1	0.54	35.8	76.1	76.1	57.8	79.8	50.9	43.6
1	1	0	1	0.42	41.4	73.4	73.4	42.0	66.1	48.2	34.9
1	1	1	1	1.14	36.5	77.1	77.1	59.6	73.6	56.7	43.5
All combinations				39879	14818	17402	30885	22486	29489	21796	16959

Table 4: Relationship between combination of women's decision making power with their children's under nutrition and immunization status in India

Place	Health care	Buying large household	Mobility	Husband's money
Rural®	1.00	1.00	1.00	1.00
Urban				
	1.053	1.269**	1.047	1.130**
Women Highest education				
Illiterate & Primary®	1.00	1.00	1.00	1.00
Secondary & Higher	1.042	1.100**	1.246**	0.756**
Caste/Tribe				
ST®	1.00	1.00	1.00	1.00
SC	1.040	0.779**	0.870*	1.148
OBC	0.861**	0.685**	0.665**	1.112
General castes	1.048	0.643**	0.820**	0.982
Women's occupation				

Not working®	1.00	1.00	1.00	1.00
Prof/sales/serv.	1.356**	1.697**	1.430**	1.230**
Agro-employee	0.877**	0.881**	1.019	0.742**
Skilled/unskilled/ Manual	1.114*	1.178**	1.296**	0.912
Wealth index				
Poorest®	1.00	1.00	1.00	1.00
Others	1.005	0.897*	1.185**	0.878**

® Reference category, ** = p>0.001 and * = p> 0.005

Table 5: Logistic regression of different types of women's decision making power with their children's nutritional and Immunization status in India

Independent variables	Combination of Women autonomy	Odd ratios
Place	N	
Rural ®	23863	1.00
Urban	14226	1.133**
Women Highest education		
Illiterate & Primary®	20776	1.00
Secondary & Higher	17313	1.138**
Caste/Tribe		
ST®	6132	1.00
SC	7124	0.964
OBC	13272	0.773**
General castes	11561	0.853**
Women's occupation		
Not working®	24646	1.00
Prof/sales/serv.	2402	1.698**
Agro-employee	8440	0.909
Skilled/unskilled/ Manual	2601	1.201**
Wealth index		
Poorest®	66743	1.00
Poorer	6919	0.964
Middle	7860	0.955
Higher	8526	1.055
Highest	8041	0.830**

Note: Out of total 16 combinations of women autonomy, (0,0,0,0) as 0, (1,0,0,0) as 0, (0,1,0,0) as 0, (0,0,1,0) as 0 and (0,0,0,1) as 0 and all others as 1.

® Reference category, ** = p>0.001 and * = p> 0.005

Table 6: Logistic regression of combinations of women's autonomy with different socio-economic variables

Independent Variables	Combinations of women autonomy	Odd ratios
Nutritional status of children		
Underweight®	1.00	
Others	1.048*	
Stunted ®	1.00	
Others	1.026	
Immunization status of children		
BCG not taken®	1.00	
Taken	1.127**	
DPT (3 doses) not taken®	1.00	
Taken	1.175**	
Polio not taken®	1.00	
Taken	0.993	
Measles not taken®	1.00	
Taken	1.200**	
Complete immunization not done ®	1.00	
Done	1.167**	

Note: Out of total 16 combinations of women autonomy, (0,0,0,0) as 0 and all others as 1

® Reference category, ** = p>0.001 and * = p> 0.005

Table 7: Logistic regression of combinations of women's autonomy with their children's nutritional and Immunization status in India

consciousness and awareness of the parents, which are supposed to have positive relations with the autonomy of women. Thus the causality is the other way of the than those considered in the paper. If we take the welfare of children as a function of autonomy of mothers then it is possible to find with appropriate model, the differential effect of each of the autonomy along with the combinations of the different kinds of autonomies. In that case we can point out which autonomy has the highest effect on nutritional and immunization status of children. This paper does not address this issue.

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