Women's Empowerment and Child Health outcomes: A Comparative Study between India and Nigeria.

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Abstract

The indicators of women's empowerment and its relationship to child health practices were investigated in a sample of 22,462 children in Nigeria and 45,516 in India. We examined the indicators of empowerment in two areas such as women's decision-making autonomy and their attitude towards wife beating. Similarly, we also considered the determinants of child health in three areas: Child's immunisation status, mortality (child is alive or not), and nutritional status (stunted or not). The influence of women's decision-making autonomy on the child health practices appears to be paramount for a child's well-being. The study revealed that in both populations, older women with parity 0-2 have greater decision-making autonomy more than women in the lower age categories with higher parity. In both populations, the less proportion of middle age women justified wife beating. The study also revealed that most of the children in Nigeria and India were not fully immunized. However, it has been observed from the results obtained in the study that parent's education, wealth status and place of residents have a direct impact on child health. In conclusion, the study provides evidence for the relationship between the indicators of women's empowerment and child health outcomes

Keywords: Women's autonomy, child health, stunting, immunization, mortality, wife beating.

Introduction

The "Millennium Development Goals" (MDGs) are the eight developmental goals that were set for the year 2015. They include child health related goals in which all the member States have agreed to meet the Goals by the year 2015. These Goals were adopted on 8 September 2000 by the United Nations General Assembly in its fifty-fifth session with a resolution 55/2 "United Nations Millennium Declaration". The leaders recognized that they "have a duty to the entire people in the world, especially the most vulnerable and, in particular, the children of the world, to whom the future belongs". The MDG 4 which state

"Reduce child mortality" is the goal that is directly related to child health. The target set for it is to "reduce by two-thirds, between 1990 and 2015, the under-five mortality rate."

Women empowerment

We know that in general terms, the position of women in the society is still low compared to their men counterparts particularly in developing countries. The primary reason being the discrimination between man and woman on the basis of sex has created various types of gender biases both in the household, community and the society as a whole. The concept of women's empowerment is instrumentally valuable for achieving positive developmental outcomes and for the well-being of men, women and children. Women's empowerment can be accessed/measured using some direct indicators such as the decision making ability of women in their individual households, as this affect their personal circumstances and is an essential aspect of their empowerment; as well as through examining women's attitudes to domestic based violence (such as wife beating) which is one the common types of domestic violence perpetrated on women that has a direct effect on the child health in almost all developing countries of which Nigeria and India are inclusive. Women's Attitudes towards wife beating provide an insight into women's views on women's status in the household, whether or not wife beating is considered acceptable is an indicator of women's empowerment. What matters in terms of perceived autonomy of women is that it is fairly accepted by the women themselves and this acceptance in itself is a reflection of low sense of autonomy shaped by adaptive preference or woman giving herself to the norms of society and family.

Literature Review

Several studies have been carried out on different aspects of women's empowerment in relation to reproductive and child health status. But so far, there are only few studies conducted on women's empowerment and child health outcomes. This study, therefore, seeks to compare two developing nations (Nigeria and India) in the area of women's empowerment in relation to child health practices.

Cunningham, K. (2014) studied the relationship between maternal empowerment, childcare practices and child nutrition in rural Nepal. They used a cross-sectional dataset to construct the Women's Empowerment in Agriculture Index's (WEAI) 5 Domains of

Empowerment (5DE) sub-index to investigate the association between maternal empowerment and child LAZ(length-for-age z-score), WAZ (weight-for-age z-score), and WLZ (weight-for-length z-score) in rural Nepal. Their Findings suggested that particular dimensions of empowerment may influence child nutrition more than others in particular contexts.

Kar et al. in a paper titled "Empower Women for Health Promotion" identified some conditions, factors, and methods, which empower women and mothers (WAM) for social action and health promotion movements. Women and mothers are the primary caregivers in almost all cultures; they have demonstrated bold leadership under extreme adversity. Consequently, when empowered and involved, WAM can be effective partners in health promotion programs. The methodology includes a meta-analysis of 40 exemplary case studies from across the world, which meets predetermined criteria, to draw implications for social action and health promotion.

Parashar (2004) in a study examined how mother's empowerment in India is linked to child nutrition and immunization and suggested women to be empowered simultaneously along several different dimensions if they and their children were to benefit across the whole spectrum of their health and survival needs.

Mary M. et al (1999) uses data from a 1991 survey of some ethnic groups in Nigeria, looked at the determinants of women's decision-making authority and their findings shows that ethnicity plays a very important role in shaping women's decision-making authority and is even more important than women's individual-level characteristics as a determinant of authority. The ethnic effect occurs both by shaping the levels of resources that women achieve and by shaping the relationships between women's achieved characteristics to family decision-making.

A study from Nepal suggests that women's empowerment and spousal violence appear to have significant implications for the health of women and their children (Tuladhar et al. 2013).

Data and Methods

This study was based on a secondary data that was obtained from two countries national surveys. These are; i). The 2008 Nigeria Demographic and Health Survey (NDHS) with reference to women of reproductive age 15-49 years having sampled of 22,462 children 12 – 59 months, and

ii). The India 2005/2006 National Family and Health Survey (NFHS-3) also making reference to women of reproductive age 15 – 49 years having 45,516 number of children 12 – 59 months.

Bivariate and multivariate analyses were employed in the study to examine the determinants of women's empowerment and child health. The analyses in the study focused on only two indicators of women empowerment (i.e. women's decision-making autonomy and their attitudes towards wife beating) and three determinants of child health. Since the interest here is in examining whether women's empowerment indicators used have any effect on child health outcomes (i.e. child's immunization status, mortality and stunting status). The dependent variable used is the child health outcomes which are measured for the purpose of this study by immunization status, child mortality and stunting status. These variables were each in turn coded one if the child is fully immunized, alive and stunted while 0 otherwise.

Furthermore, the independent variable used in the study is the women's empowerment which was measured by two indicators, viz, women's decision-making autonomy and their attitude towards wife beating. The decision making variables were given code 1 for women who have decision-making autonomy and 0 otherwise. Similarly, the wife beating variables were given code 1 if women justified wife beating and 0 if they do not justify wife beating.

In the analyses, the chi-square test was carried out to examine the association between each of the independent variables and each of the dependent variables. The odds ratio, which was determined from the logistic regression coefficients. It reveals the increase or decrease chance of a child being fully immunized, alive, and/or stunted under the given set level of the independent variables. The estimates of odds greater than 1.0 indicate that the chance of a child being either fully immunized or alive or stunted is higher than that of the reference category. Estimates of odds less than 1.0 indicate that the chance of the child being fully immunized or alive or stunted is less than that of the reference category of each variable. Similar interpretation of the odds ratios is applied to each measure of the independent variable.

Objective of the study

The general objective of this study is to examine the impact of women's empowerment on child health outcomes in two countries. The study also examined the effect of some socio-economic and demographic factors on women's empowerment and child health status, using some descriptive analysis.

Limitations of the study

This study is limited in some areas especially when considering the immunization status of a child, we used recodes of only children who were fully immunized and not partially immunized based on the mother's verbal report even without health cards.

Results and discussion

Background Characteristics

Table 1 shows the background characteristics of the mother, father and child. From the table, most of the women are between the age 25-34 years (Nigeria-49.3%, India-49.4%), out of which 50% of the women have no education and only 26.8% and 35.9% of them have secondary/higher education respectively. Most of the women have parity between 0 and 2 in both countries. More than half (68.3%) of the women in Nigeria are working while only 37.3% in India reported working. Almost 51% children in both countries are between the age 36-59 months and 70.1% of the men in Nigeria are of age 35 and above while it is only 33.2% for India are in this age category. The result shows that more than half (56.6%) of men in India are within the age group 25-34 years. More than half of the men (62.8%) in Nigeria have either no or primary education and only 44.6% of men in India have no or primary education. Table 1 also reveals that almost three-fourth of the households in both population lives in the rural areas, and half of them have poor wealth status.

Dependent and Independent variables with background characteristics.

Table 2 is the results of the distribution of the dependent variables considered in the study with the background characteristics. On an average, it can be observed from the result that most of the children in both countries are not fully immunized. Immunization in both countries is higher among children of the middle age (25-34 years) mothers, and slightly higher among women with parity 0-2. Parental education also affects the immunization status of children in the sense that the percentage immunization is greater among parents having secondary/higher education in both populations considered. Greater proportion of children living in urban areas received full immunization than their rural counterparts in Nigeria

(27.7%) and India (50.1%). Similarly, children from the richer background are of more advantage to be fully immunized than children from the poor background as can be seen from the results in Table2. In Nigeria, children from working mothers have a higher percentage of immunization than children of non-working mothers however reverse is the case in India. Table 3 present the distribution of independent variables considered in this study and the background characteristics. The results from the table show that older women of age category 35-49 years have decision-making autonomy more than women in the lower age groups in both populations. In Nigeria, younger women of age group 15-24 years justified wife beating by husbands (54.8%) more than women in the older age group, while in the case of India, women of older age group 35-49 years justified wife beating (52.2%) more than those in the lower age group. In both countries, the less proportion of middle age women (25-34 years) justified wife beating. It can be observed also from the table that in Nigeria and India, women who have children in the age group 36-59 months participate more (Nigeria - 46.4%; India - 70.4%) in household decision making than those with children 35 months and below. Similarly, in both populations, women having parity range 0 – 2 have greater decision-making autonomy than those with higher parity. Reverse is the case seen in the result of justification to wife beating were higher parity women justify wife beating more than the lower parity women in the two countries. Parents level of education increases decision-making autonomy of women in the sense that the decision-making autonomy of women is observed to increase as their level of education (and that of their partner) increases in the two populations. Looking at justification to wife beating column, it can be observed that in Nigeria and India, more than half of the population of parents with no education justified wife beating than the educated ones, that is to say that high percentage of the educated parents does not justify wife beating in both countries. From Table 3, it can be observed that parent's place of residence and wealth status contributes to women's decision-making autonomy, in the sense that the percentage of decision-making autonomy is higher among women living in the urban region (Nigeria – 54.3%; India - 74.9%) and also in the rich wealth status (Nigeria – 62.2%; India – 70.1%) in both countries. More than half of the women living in rural areas (Nigeria – 54.7%; India – 51.4%) justified wife beating by husbands than their urban counterparts in both population. Results from the table also reveal that in Nigeria and India, working women have more percentage (Nigeria - 52.2%; India – 68.1%) decision-making autonomy than women who are not working, and justify wife beating more than those in the not working category Nigeria – 51.0%; India – 52.9%.

Crosstabs of dependent and independent with chi square values

Table 4 shows that the proportion of fully immunized children (12-59 months age) was higher among women who have autonomy in decision making compared to the children of women who have no decision-making autonomy in both countries. 24.6% children of autonomous women in Nigeria are fully immunized; similarly 38.5% of Indian children, whose mother have autonomy in decision making, are fully immunized. Table 4 also depicts those children of women having autonomy in various household decision-making survive more than the children whose mothers have no autonomy in decision-making in Nigeria (90.2%) and India (87.7%). From the table, it can also be observed that women's autonomy in household decision-making have a statistically significant impact on child stunting status in Nigeria since children of autonomous women have less percentage of stunting. However, there were no statistically significant differences seen in children survival and stunting status by women's autonomy in India. The chi-square value shows the significance of these relationships. The results have also shown that the proportion of child immunization, survival and stunting status in children aged (12-59 months) was slightly higher among women who believed that wife beating is justified, more than among women who do not justified wife beating in both countries, as 20.9 percent of the children of mothers do not justified wife beating are fully immunized, while only 13.6 percent of children of mothers who justified wife beating are fully immunized in Nigeria, and 40.6% of children whose mothers do not justified wife beating are fully immunized, 33.4% children of mothers who justified wife beating are fully immunized. However,, no significant statistical difference was observed in the immunization among children by women's justification of wife beating in India. Significant marginal difference was found in the risk of mortality among the children whose mother justified wife beating or not in both Nigeria and India. At the national level, 45.9 percent of the children whose mothers justified wife beating are stunted, while 38.8 percent of the children of mothers who do not justify wife beating are stunted in Nigeria, Similarly, in India it is 50.4 percent and 45.8 percent respectively. In both cases, the difference was significant, and a positive relationship between women who believed that wife beating is justified and children stunting status was observed.

Logistic regression results

Three logistic regression models was performed separately, i.e. for full immunization, mortality and stunting among children from both Nigeria and India. As can be

observed from Table 5, the multivariate logistic regression analysis identified place of residence, maternal age, education, parity and occupation, economic status of the household, and age of the child as determinants of immunization, mortality pattern and stunting among children. The Nigerian sample shows that, the likelihood of being fully immunized is 1.57 and 1.61 times higher among children of mothers in the age group 25-34 years and 35-49 years respectively; however the older women's children in India are less likely to be fully immunized with odds-0.78. Table 5 also shows that in Nigeria, children whose mothers are in the age group 25-34 and 35-49 years were found to be 0.89 and 0.78 times less likely to be stunted compared to children whose mothers are in the age group 15-24 years. Similar scenario was observed in India, where the children of the older mother (25-34 years) were less likely (0.90 times) to be stunted compared to the younger mother (15-24 years) counterparts. The risk of mortality (18 percent) and stunting (21 percent) were less for children in the age group 36 – 59 months compared to the reference category, in Nigeria, while in India, the risk of mortality and stunting is about 17 percent and 8 percent respectively lesser for children in age groups 36 – 59 months. The likelihood of child mortality in Nigeria is 2.28 times higher for children whose mothers have parity 3 and above compared to the children of lower parity women. In India, children whose mothers have higher parity (3 and above) are 2.74 times more likely to the risk of mortality compared to the children of low parity (0-2) women. It was also observed that the children of higher parity (3 and above) women were less likely to be fully immunized in both countries. However, the result revealed that in both populations, children whose mothers have primary education were 0.78 times less likely to be stunted compared to children of illiterate parents. Similarly, children whose mothers have secondary or higher education were three times more likely to be fully immunized than their counterparts from non-educated mothers in both countries. The result also revealed that, children from middle and Rich wealth status households were 1.95 and 2.43 times more likely to be fully immunized respectively in Nigeria, while it 1.50 and 1.93 for India.

Table 6 present the results of the logistic regression of the independent variables with the background characteristics. The odds ratio values reveals that in Nigeria, a unit significant increase in the age of women likely decreases the odds of women's decision-making autonomy, while in India, a unit significant increase in women's age increases the odds of their decision-making autonomy. However, Nigerian women in the middle age group (25-34 years) were 30% more likely not to justify wife beating than women in the lower age group

15-24 years [odds - 1.30***] and women in the older age group 35-49 years [odds – 1.07], in India, women in the older age were less likely to have decision making autonomy compared to the younger women [odds - 0.92***(25-34yrs), 0.96 (35-49years)], though re result is not significant for women of older age group. Age of a child seems not to have any significant relationship with any of the indicators of empowerment in Nigeria, but for Indian population, women having children above 34 months were likely to participate in household decision making significantly more than those with children below 35 months. It can be also be observed from the Table 6 that women with partner's age between 25-34 years have more decision making autonomy than those with younger or older partners in Nigeria, but in India, women with partners age 35 and above have more decision making autonomy. This can be seen from the odds values [Nigeria-1.54***; India-1.74***]. In Nigeria, women with parity 3 and above were 40% much likely to have decision-making autonomy in their households but less likely to justify wife beating than the lower parity (below 3) women, while in India, women with parity 3 and above were 17% less likely to have decision-making autonomy but more likely to justify wife beating than those having lower parity (below 3). Parents age have a significant but less effect on decision-making autonomy of women in Nigeria but have a more significant relationship to their justification to wife beating. In contrast to these results, women's decision-making autonomy in India significantly increases with an increase in their level of education but has a decrease in their justification to wife beating. The results in table 6 revealed that in both populations, women living in the rural areas were less likely to have decision-making autonomy and less likely to justify wife beating in Nigeria but more likely for India than their urban counterparts. Working Women in Nigeria were less likely to have decision-making autonomy and less likely to justify wife beating than those not working, while in the case of India, working women were more likely to have decision-making autonomy as well as more likely to justify wife beating than the non-working women.

Table 7 gives the results of logistic regression of the dependent and independent variables used in the study. From the table, it can be observed that children of women who have decision making autonomy were 2 times more likely to be fully immunized, are alive but are less likely to be stunted than those of women who have no autonomy in Nigeria. The results of the odds ratio for Nigeria also reveal that justification to wife beating has a significant relationship with child's immunization, mortality and child's stunting status. Comparing these results with that of India gives us quite similar scenario except that children of women

who have no decision-making autonomy were found to be more likely stunted than the children whose mothers have decision-making autonomy.

Conclusion

This study made an attempt to examine the relationship between women's empowerment (women's decision-making autonomy and their attitudes towards wife beating) and child health status (full immunization, mortality and stunting status) in two populations (Nigeria and India) using data from the Nigeria Demographic and Health Survey conducted in 2008 (NDHS) and the third round of National Family and Health Survey, carried out during 2005-06. The study revealed that in both populations, older women in the age category 35-49 years with parity 0-2 have greater decision-making autonomy more than women in the lower age groups with higher parity. In both populations, the less proportion of middle age women (25-34 years) justified wife beating. The study also revealed that most of the children in Nigeria and India were not fully immunized. However, it has been observed from the results obtained in the study that parent's education, wealth status and place of residents have a direct impact on child health. In conclusion, the study provides evidence for the relationship between the indicators of women's empowerment and child health outcomes.

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TABLES

Background Characteristics	Nigeria		India	
Table 1 Distribution of women and child's background characteristics.				
	Frequency	Percentage	Frequency	Percentage
Mother's Age				
15 - 24 years	7249	25.3	23723	42.0
25 - 34 years	14111	49.3	27864	49.4
35 - 49 years	7287	25.4	4850	8.6
Age of child				
12 - 35 months	11030	49.1	22193	48.8
36 - 59 months	11432	50.9	23323	51.2
Father's' Age				
Below 24 years	543	2.0	4723	8.7
25 - 34 years	7652	27.9	31962	56.6
35 and above	19183	70.1	18729	33.2
Parity				
0 - 2 children	19495	68.1	45249	80.2
Above 2 children	9152	31.9	11188	19.8
Mother's education				
No education	14418	50.3	28237	50.0
Primary	6552	22.9	7920	14.0
Secondary/Higher	7677	26.8	20280	35.9
Father's education				
No education	11477	41.4	16412	29.4
Primary	5934	21.4	8480	15.2
Secondary/Higher	10291	37.1	30892	55.4
Place of residence				
Urban	7613	26.6	42135	74.7
Rural	21034	73.4	14303	25.3
Wealth status				
Poor	14475	50.5	27031	47.9
Middle	5609	19.6	11181	19.8
Rich	8563	29.9	18226	32.3
Respondent Work status				
Not working	9035	31.7	35383	62.7
Working	19455	68.3	21042	37.3

Background Characteristics	Nigeria						India					
	Fully Immunized		Child is Alive		Stunted		Fully Immunized		Child is Alive		Stunted	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mother's Age												
15 - 24 years	89.2	10.8	11.9	88.1	54.8	45.2	63.5	36.5	6.9	93.1	55.5	44.5
25 - 34 years	80.0	20.0	10.1	89.9	58.7	41.3	54.3	45.7	5.7	94.3	57.6	42.4
35 - 49 years	81.8	18.2	12.5	87.5	58.4	41.6	65.5	34.5	6.9	93.1	52.4	47.6
Age of child												
12 - 35 months	78.4	21.6	11.6	88.4	50.6	49.4	55.3	44.7	6.3	93.7	45.9	54.1
36 - 59 months	80.2	19.8	13.6	86.4	55.6	44.4	56.2	43.8	7.1	92.9	47.5	52.5
Father's Age												
Below 24 years	89.4	10.6	10.5	89.5	56.5	43.5	74.9	25.1	8.4	91.6	53.3	46.7
25 - 34 years	83.7	16.3	10.3	89.7	58.3	41.7	60.4	39.6	6.0	94.0	53.4	46.6
35 and above	82.5	17.5	11.4	88.6	57.2	42.8	64.0	36.0	6.2	93.8	49.4	50.6
Parity												
0 - 2 children	80.4	19.6	13.3	86.7	58.6	41.4	57.1	42.9	7.2	92.8	57.3	42.7
Above 2 children	87.6	12.4	6.6	93.4	56.0	44.0	66.2	33.8	2.9	97.1	51.9	48.1
Mother's education												
No education	94.1	5.9	12.9	87.1	48.5	51.5	74.3	25.7	8.1	91.9	45.3	54.7
Primary	79.8	20.2	11.0	89.0	58.9	41.1	60.6	39.4	6.6	93.4	52.7	47.3
Secondary/Higher	65.3	34.7	8.0	92.0	71.5	28.5	44.7	55.3	3.8	96.2	67.2	32.8
Father's education												
No education	94.9	5.1	13.1	86.9	48.8	51.2	76.8	23.2	7.8	92.2	41.9	58.1
Primary	80.1	19.9	11.3	88.7	58.1	41.9	65.2	34.8	7.9	92.1	46.8	43.2
Secondary/Higher	71.6	28.4	9.1	90.9	65.7	34.3	54.9	45.1	5.1	94.9	58.5	41.5
Place of residence												
Urban	72.3	27.7	8.3	91.7	66.8	33.2	64.3	35.7	7.0	93.0	52.4	47.6
Rural	86.8	13.2	12.2	87.8	54.1	45.9	49.9	50.1	4.5	95.5	63.1	36.9
Wealth status												
Poor	92.8	7.2	13.0	87.0	49.1	50.9	75.2	24.8	8.0	92.0	44.3	55.7
Middle	81.7	18.3	11.3	88.7	57.6	42.4	60.7	39.3	6.2	93.8	52.8	47.2
Rich	67.5	32.5	8.0	92.0	70.3	29.7	44.6	55.4	4.0	96.0	68.0	32.0
Mother's Work status												
Not working	88.7	11.3	11.3	88.7	54.3	45.7	56.3	43.7	5.7	94.3	51.2	48.8
Working	80.1	19.9	11.1	88.9	59.2	40.8	63.6	36.4	7.4	92.6	45.5	54.5

Table 2 Distribution of the child health outcomes (Immunization status, child mortality and stunting status) with their background characteristics

Background Characteristics	Nigeria				India			
	Decision making autonomy		Justification to wife beating		Decision making autonomy		Justification to wife beating	
Mother's Age	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**
15 - 24 years	63.0	37.0	45.2	54.8	40.9	59.1	50.6	49.4
25 - 34 years	51.2	48.8	50.9	49.1	27.8	72.2	53.0	47.0
35 - 49 years	50.5	49.5	50.3	49.7	21.9	78.1	47.8	52.2
Age of child								
12 - 35 months	54.1	45.9	48.5	51.5	33.5	66.5	51.8	48.2
36 - 59 months	53.9	46.1	49.5	50.5	29.6	70.4	51.5	48.5
Father's' Age								
Below 24 years	52.5	47.5	48.3	51.7	47.5	52.5	47.9	52.1
25 - 34 years	49.3	50.7	48.8	51.2	34.5	65.5	52.8	47.2
35 and above	52.9	47.1	49.3	50.7	23.2	76.8	50.3	49.7
Parity								
0 - 2 children	50.6	49.4	51.5	48.5	31.4	68.6	51.9	48.1
Above 2 children	61.2	38.8	44.5	55.5	38.7	61.3	50.1	49.9
Mother's education								
No education	69.6	30.4	42.8	57.2	34.2	65.8	46.0	54.0
Primary	43.4	56.6	47.0	53.0	34.6	65.4	49.0	51.0
Secondary/Higher	33.7	66.3	63.5	36.5	30.2	69.8	60.2	39.8
Father's education								
No education	70.3	29.7	43.4	56.6	32.1	67.9	45.1	54.9
Primary	45.0	55.0	46.1	53.9	31.5	68.5	47.6	52.4
Secondary/Higher	38.3	61.7	57.9	42.1	33.3	66.7	56.0	44.0
Place of residence								
Urban	45.7	54.3	60.2	39.8	25.1	74.9	60.2	39.8
Rural	57.0	43.0	45.3	54.7	35.4	64.6	48.6	51.4
Wealth status								
Poor	65.0	35.0	42.6	57.4	33.1	66.9	46.9	53.1
Middle	50.3	49.7	46.9	53.1	36.8	63.2	47.3	52.7
Rich	37.8	62.2	62.2	37.8	29.9	70.1	61.1	38.9
Mother's Work status								
Not working	67.3	32.7	50.0	50.0	33.3	66.7	54.2	45.8
Working	47.8	52.2	49.0	51.0	31.9	68.1	47.1	52.9

Table 3 Distribution of the indicator's of women empowerment and background characteristics

Indicators	Nigeria						India					
Table 4 Cross tabulation of child health outcomes by indicator's of women empowerment with chi square values												
	Fully immunized child		Child mortality (Alive)		Stunted		Fully immunized child		Child mortality (Alive)		Stunted	
	No of children	%	No of children	%	No of children	%	No of children	%	No of children	%	No of children	%
Decision making autonomy												
No	1418	10.7	13564	87.7	4655	47.3	5888	34.3	17246	93.2	6997	47.4
Yes	2865	24.6	11882	90.2	3383	36.9	13614	38.5	35622	93.9	14801	48.3
Chi square values	841.72***		44.55***		210.08***		86.96***		12.24		3.18	
Justification towards wife beating												
No	2584	20.9	12646	89.6	3729	38.8	11037	40.6	27361	94.1	10745	45.8
Yes	1699	13.6	12800	88.1	4309	45.9	8465	33.4	25507	93.3	11053	50.4
Chi square values	233.55***		15.41***		97.49***		293.08***		86.96***		93.94***	

Note: *** = significant at 0.001, ** = significant at 0.05,   = not significant

	Nigeria			India		
	Table 5 Odds of child health outcomes by selected background characteristics					
Characteristics	Fully Immunized	Child mortality	Stunted	Fully Immunized	Child mortality	Stunted
	Odds Ratio [CI]			Odds Ratio [CI]		
Mother's Age						
15 - 24 years (REF)						
25 - 34 years	1.573***[1.390, 1.780]	1.327***[1.181, 1.491]	0.896**[0.811, 0.989]	1.075 [1.022,1.131]***	1.271 [1.157,1.396]	0.905[0.858,0.953]***
35 - 49 years	1.618***[1.397,1.874]	1.197**[1.045, 1.371]	0.787***[0.699, 0.886]	0.78 [0.713,0.862]***	[1.112,1.540]***	0.980 [0.892,1.077]
Age of child						
12 - 35 months (REF)						
36 - 59 months	0.873**[0.805, 0.947]	0.822***[0.756, 0.894]	0.794***[0.741, 0.851]	1.007 [0.964,1.051]	0.838 [0.775,0.905]***	0.926 [0.886,0.967]***
Father's' Age						
Below 24 years (REF)						
25 - 34 years	0.951[0.661, 1.369]	0.933[0.699, 1.301]	0.988[0.735,1.328]	1.330 [1.212,1.458]***	1.282 [1.114]***	0.863 [0.784,0.949]***
35 and above	0.960[0.664, 1.389]	0.711**[0.507, 0.997]	1.021[0.756, 1.378]	1.257 [1.133,1.394]***	1.380 [1.169,1.629]	0.838 [0.753,0.932]***
Parity						
0 - 2 children (REF)						
Above 2 children	0.782***[0.713, 0.857]	2.28***[2.055, 2.530]	1.033[0.959, 1.112]	0.765 [0.725,0.808]***	2.740 [2.403,3.124]***	1.216 [1.151,1.284]***
Mother's education						
No education (REF)						
Primary	2.093***[1.846, 2.373]	1.147**[1.017, 1.294]	0.784***[0.710, 0.865]	1.930 [1.811,2.056]***	1.296 [1.156,1.452]***	0.787 [0.737,0.841]***
Secondary/Higher	3.462***[3.037, 3.947]	1.569***[1.348, 1.825]	0.510***[0.454, 0.573]	3.022 [2.853,3.200]***	2.007 [1.785,2.255]***	0.617 [0.582,0.655]***
Father's education						
No education (REF)						
Primary	2.063***[1.790, 2.377]	1.017[0.901, 1.149]	0.949[0.856, 1.052]	1.334 [1.255,1.440]***	0.869 [0.780,0.968]**	0.953 [0.889,1.022]
Secondary/Higher	2.058***[1.786, 2.371]	1.059[0.930, 1.205]	0.969[0.871, 1.079]	1.284 [1.211,1.361]***	1.070 [0.970,1.180]	0.831 [0.783,0.882]***
Place of residence						
Urban (REF)						
Rural	0.877**[0.739, 0.964]	0.820**[0.726, 0.927]	1.123**[1.024, 1.231]	1.073 [1.016,1.133]	1.128 [1.010,1.261]**	1.017 [0.961,1.076]
Wealth status						
Poor (REF)						
Middle	1.958***[1.739, 2.206]	1.040[0.928, 1.166]	0.783***[0.712, 0.861]	1.505 [1.420,1.594]	1.133 [1.022,1.256]**	0.783 [0.738,0.831]***
Rich	2.438***[2.156, 2.757]	1.356***[1.173, 1.567]	0.536***[0.480, 0.598]	1.937 [1.818,2.064]	1.414 [1.242,1.610]***	0.501 [0.469,0.535]***
Mother's Work status						
Not working (REF)						
Working	1.448***[1.313, 1.597]	0.978[0.892, 1.072]	0.876**[0.810, 0.947]	1.046 [0.998,1.095]	1.039 [0.959,1.126]	1.020 [0.973,1.068]

Note: *** = significant at 0.001,   ** = significant at 0.05,   = Not significant, CI = 95% confidence interval, REF = Reference category

	Nigeria		India	
Characteristics	Decision making autonomy	Justification towards wife beating	Decision making autonomy	Justification towards wife beating
	Odds ratio(CI)		Odds ratio(CI)	
Mother's Age				
15 - 24 years (REF)				
25 - 34 years	0.551***[0.507, 0.621]	1.301***[1.184, 1.428]	1.410*** [1.342,1.481]	0.919*** [0.877,0.962]
35 - 49 years	0.786**[0.730, 0.845]	1.070[0.999, 1.146]	1.738 *** [1.577,1.915]	0.955 [0.880,1.037]
Age of child				
12 - 35 months				
36 - 59 months	0.983[0.926, 1.043]	1.053[0.996, 1.146]	1.102*** [1.057,1.150]	0.994 [0.956,1.033]
Father's' Age				
Below 24 years (REF)				
25 - 34 years	1.535**[1.200, 1.964]	0.757**[0.602, 0.953]	1.287*** [1.185,1.397]	0.913** [0.841,0.990]
35 and above	1.275**[1.178, 1.380]	1.027[0.954, 1.106]	1.742*** [1.584,1.916]	0.950 [0.867,1.041]
Parity				
0 - 2 children (REF)				
Above 2 children	1.405***[1.316, 1.500]	0.803***[0.756, 0.854]	0.731*** [0.694,0.769]	1.066** [1.015,1.119]
Mother's education				
No education (REF)				
Primary	0.292***[0.265, 0.323]	1.1772***[1.612, 1.948]	1.153*** [1.081,1.229]	0.969 [0.913,1.028]
Secondary/Higher	0.664***[0.605, 0.730]	1.678***[1.537, 1.831]	1.384*** [1.306,1.468]	0.719*** [0.682,0.759]
Father's education				
No education (REF)				
Primary	0.688***[0.628, 0.753]	1.048[0.961, 1.143]	1.053 [0.984,1.126]	0.976 [0.919,1.037]
Secondary/Higher	1.090**[1.000, 1.187]	1.134**[1.046, 1.229]	0.885*** [0.837,0.936]	0.861*** [0.817,0.906]
Place of residence				
Urban (REF)				
Rural	0.792***[0.730, 0.859]	0.797***[0.739, 0.859]	0.613*** [0.587,0.639]	1..600*** [1.540,1.663]
Wealth status				
Poor (REF)				
Middle	0.657***[0.596, 0.724]	1.419***[1.296, 1.554]	0.789*** [0.746,0.883]	1.2*** [1.138,1.266]
Rich	0.899**[0.816, 0.990]	1.340***[1.225, 1.466]	0.828*** [0.776,0.883]	0.881*** [0.830,0.935]
Mother's Work status				
Not working (REF)				
Working	0.543***[0.508, 0.581]	0.850***[0.799, 0.904]	1.164*** [1.113,1.218]	1.161*** [1.114,1.209]

Table 6 Odds of women empowerment indicator by selected background characteristics

Note: *** = significant at 0.001, ** = significant at 0.05,   = Not significant, CI = 95% confidence interval, REF = Reference category

Variables	Nigeria			India		
	Immunization	Child is alive	Stunted	Immunization	Child is alive	Stunted
Decision making autonomy						
No (REF)						
Yes	2.637***[2.460, 2.828]	1.276***[1.183, 1.375]	0.666***[0.629, 0.70]	1.181***[1.138, 1.228]	1.127***[1.050, 1.210]	1.045** [1.005, 1.087]
Justification towards wife beating						
No (REF)						
Yes	0.637***[0.595, 0.682]	0.88**[0.818, 0.948]	1.292***[1.219, 1.369]	0.738***[0.712, 0.765]	0.880***[0.823, 0.942]	1.202*** [1.158, 1.247]

Table 7 Odds of child health outcomes by women empowerment indicator

Note: *** = significant at 0.001, ** = significant at 0.05, = Not significant, CI = 95% confidence interval