

Orphans and their living arrangement in Indian households: Understanding their educational and nutritional status

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ABSTRACT

Absence of biological parents affects a child's growth and well-being. This study examines the status of children living in the households, whose parents or either of the parents was not alive by considering their living arrangement, educational performance, and nutritional status. Orphans are mainly of three types classified by UNICEF as paternal orphans (absence of the father), maternal orphans (absence of mother), and double orphans (absence of both the parents). This study has done the comparative analysis between the orphans and non-orphans by considering their educational performances and nutritional status. The study used the data provided by the National Family Health Survey, India, 2015–16. This survey is a large scale sample survey conducted in households throughout the nation. Based on the data provided by the survey, in the age group 0 to 18 years there were 5 percent orphans (including all three types of orphans) living in the households. Living arrangement of orphans indicated that paternal and maternal orphans were found to be living with either of their alive parents, followed by grandparents, whereas double orphans were living with their extended family members or grandparents. Educational performances were compared for both the types of children and it was found that children who never attended school and the school dropout rates, both were higher among the orphans compared to non-orphans. In terms of nutritional status orphans were lagging behind the non-orphans, in all three indicators, i.e. stunting, wasting and underweight. Thus focused interventions are required for the betterment and welfare of orphans living within the households as the demise of either of the parent creates a void in the early years of life which ultimately affects the child's overall development.

1. Introduction:

UNICEF defines an orphan, a child under 18 years of age who has lost one or both parents to any cause of death, and there were 140 million orphans globally in 2015 (UNICEF, 2017). UNICEF classified orphans into three: Paternal orphans are those children who have lost their fathers. Maternal orphans are those children who have lost their mothers. Double orphans are those children who have lost their both the parents (UNICEF; UNAIDS; USAID, 2004). As data provided by the fourth round of National Family Health Survey (NFHS-4), India, 2015–16, out of total children living in the households, 5 percent were orphans (including all three types of orphans). Living arrangements of orphans is a matter of concern that defines their overall growth and development. Living arrangements can be characterized by the presence or absence of extended family members, including grandparents, other relatives, or non-relatives in the households (Landale, Thomas, & Van Hook, 2011).

Death of parents introduces a major change in the child's life. With the death of one or both the parents, the child's living arrangement will change. This depends upon the local culture or tradition, the decision of guardian or immediate caregiver, and the plan and practice on raising the children after one or both parents die (Kelly, 2007). Presence of orphans is indirectly proportional to the household's wealth index as it was found out in a study based on the Demographic and Health Survey of Nepal that orphans were more likely to live in the households having poor wealth index (Guragain, Paudel, Lim, & Choonpradub, 2015).

The development of an individual and the progress of a nation majorly depends upon education. It is also the principal instrument in awakening the child to cultural values. Thus, it is the strongest force in the development and growth of a child in terms of being a responsible, intelligent, and capable citizen. Loss of parent reduces child's school enrollment and this affects more the child in transitions between primary to secondary, as the expenditure on education reduces largely for

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consumption (Gertler, Levine, & Ames, 2004). The analysis was done by Martha and Dean over 100 datasets has shown how the orphans were concentrated in poor households and its effect on their educational outcome. A general conclusion was that poor orphans were the most disadvantaged as there was a huge difference between poor and non-poor orphans based on educational outcome. (Martha & Deon, 2006).

The educational outcome generally depends upon the factors such as poverty level, the distance of the school from home, transport facilities, quality of teachers, social environment and many others (Patel & Gandhi, 2016; Basumatary, 2012). Apart from these, it is also related to prevailing caste, class, and gender divide (Kaul, 2001). Children living with the parents are more likely to achieve better results academically, including good literacy skills, as parents help the children and encourage study habits which contribute to their success in studies and future careers (Lippman & H., Wilcox, W., B., & Ryberg, R., 2013).

People without education often struggle with poverty, abuse or neglect in their homes. School dropouts create barriers for the economic growth of individuals (Latif, Choudhary, & Hammayun, 2015). Despite the obvious benefits of education to national development, significant gender disparity is prevailing as the girl's school enrollment rate was lower whereas the school dropout rate was higher than that of boys. Also, their school completion rate was far behind than that of boys (Gouda and Sekher, 2014; Rani, 2011). It is believed that women's education leads to more equitable development, stronger families, better child health and effective participation in governance (UNICEF, 2004).

Nutritional status of children is influenced by three broad factors: food, health and care. Optimal nutritional status is possible when children have access to affordable, diverse, nutrient-rich food; appropriate maternal and child-care practices; adequate health services; and a healthy environment including safe water, sanitation and good hygiene practices (UNICEF, 2013). As we know food, health and care are governed by socio-economic and household factors. Due to the stigmatization of orphans in most cultural settings, these children don't have access to basic needs. All over the world, it was evident that children living without permanent parental care are at a heightened risk for under-nutrition, putting their health and development in great jeopardy (Kamath et al., 2017).

A study in Bangladesh found that the prevalence of underweight, stunting and wasting was higher in orphans compared to non-orphans, and among orphan morbidity rates was higher in girls (Ferdoushi, Rana, Mahmud, Datta, & Akter, 2014). A study in Orissa examined two orphanages and found that maternal deprivation among orphans leads to developmental delay despite good nutrition, regular immunization, and health care. Delay in language, deprivation in personal and social domain leads to cognitive delay, which later may lead to school failure (Routray et al., 2015).

Hence, there is a need to examine the status of orphans and their living arrangements along with school dropouts and nutritional status compared to non-orphans. Orphans are counted as dependent children, so when it comes to the allocation of resources, such as paying for education, giving proper care or nutrition, they have to rely on someone who may be a guardian or caregiver. It is very important to understand the characteristics of households in which orphans live because these households and socioeconomic factors influence their thought process and also responsible for shaping their life. The research questions that the present study explores are: With whom do the orphans live in the household? Who is responsible for their growth and well-being in the particular household? How far they are lagging in comparison to non-orphans? What is the educational performance of orphans compared to non-orphans? Are school dropouts high among orphans compared to non-orphans? What are the reasons for school dropouts? What is the nutritional status of orphans? Are orphans more deprived off compared to non-orphans in Indian households? The objectives of the study are: To study the status of orphans and their living arrangements in comparison to non-orphans in Indian households. To examine the extent of school dropout among orphans and the reasons for dropout. To study the

nutritional status of orphans.

2. Materials and methods

This study used information from the fourth round of the National Family Health Survey, India, 2015–16 (NFHS-4) (International Institute for Population Sciences and ICF, 2017). National Family Health Survey provides nationally representative data on fertility, mortality, family planning, health care, nutrition, maternal and child health, education, and other important aspects related to Indian households. This survey was conducted by the International Institute for Population Sciences, Mumbai. This paper only used data related to children below 18 years (0–17) of age. This study has done comparative analysis between the orphans and non-orphans based on three variables which are: living arrangement, educational outcome, and nutritional status. Since the data is from a household survey, institutionalized orphans or children not living in households cannot be included in the analysis.

Questions used for the analysis from the National family Health Survey, India, 2015–16 questionnaires:

The *Orphan variable* we analyze is based on the two questions of a household questionnaire:

- Is (Name)'s natural mother alive?
- Is (Name)'s natural father alive?

These questions are used to construct an Orphan variable for children aged 0 to 17 years.

The *Living arrangement variable* we analyze for orphans is based on the one question of a household questionnaire:

- What is the relationship of (Name) to the head of the household?

This question is used to construct a Living arrangements variable for orphans aged 0 to 17 years.

The *Educational outcome variable* we analyze for orphans and non-orphans is based on the four questions of a household questionnaire:

- Has (Name) ever attended school?
- Did (Name) attend school or college at any time during the 2015–16 (previous year) school year?
- During (this/that) school year, what standard/year (is/was) (Name) attending?
- What is the main reason (Name) is not attending school?

These questions are used to construct an Educational outcome variable for orphans and non-orphans aged 5–17 years.

The *Nutritional status variable* we analyze for orphans is based on the three questions of the biomarker questionnaire:

- Child born in January 2011 (in last 5 years) or later?
- Weight in kilograms?
- Height in kilograms?

These questions are used to construct Nutritional status variables for orphans and non-orphans aged 0–4 years (under 5 years).

Seven background characteristics were included in the study for the analysis which are: Household wealth index, Religion, Caste, Place of residence, Region in India, Sex of child, and Age of child. 'Household wealth index' simply places children relative to a given wealth within a country and it does not have any relation with the absolute poverty line of country. 'Religion' shows the distribution of children into four major religions which are Hindu, Muslim, Christian, and Others (it includes all other religions except these three). 'Caste' shows the distribution of children into four castes which are: Scheduled caste, Scheduled tribes, and Other Backward Caste (OBC), and others (it includes all other castes except these three). Bivariate analysis and Binary logistic regression are

used to see the effect of seven background characteristics on the variables employed in each objective.

3. Results

3.1. Orphan children and their living arrangement

This section mainly focuses on the orphans under 18 years (0 to 17 years) of age group living in the households, and their living arrangements. Based on data available from the fourth round of the National Family Health Survey 2015–16, it was found that around 5 percent (4.92 percent, to be precise) children out of the total were orphans constitute sample size (N) of 49958. The sample size considers children from 0 to 17 years of age living in households. Fig. 1 shows the percentage of paternal, maternal, and double orphans. Paternal orphans were two-third of the total orphans, i.e. 65 percent, whereas maternal orphans were 28 percent, and double orphans were 7 percent (Fig. 1).

To know with whom the orphans were living, we considered the orphan’s relationship with the head of the household. Orphan’s relationship with the head of the households have been classified into 5 categories: Either parent (includes father or mother, whosoever is alive), grandparents (includes grandmother or grandfather whosoever is alive), other relatives (includes brother, sister, uncle, aunt, and other extended family members.), adopted/foster home, other households (includes working as a domestic servant, do not share blood relation with the member of the household). It was found that paternal and maternal orphans were mostly living with their mothers and fathers respectively, followed by their grandparents. Double orphans were mostly living with other relatives followed by their grandparents. The significant number of double orphans were also living in a foster home or as an adopted child and also in other households (Table 1).

To know the proportion of orphans in the society, various background characteristics were used. It was found that orphans were more among the households belonging to lower economic strata, scheduled castes and scheduled tribes. And spatially, more orphans were found in the North-Eastern region of India. Orphans were more among Christians, followed by other religions and Hindus (Table 2).

Odds ratio Odds of having orphan children decreases as wealth index of the household increases. Odds of the presence of orphans was 1.17 times higher in North-East region than the Northern region. Muslim households were likely to have 9% less orphan children compared to Hindus. Odds of having orphans were high among the socio-economically marginalized sections (scheduled castes and scheduled tribes) of India (Table 3).

3.2. Educational outcome

An attempt has been done to compare the orphans and non-orphans on basis of their educational outcomes. For comparison, three indicators were used which are: Never attended school, School dropouts, and Currently in school. This section mainly focuses on the children (orphans and non-orphans) from the 5 to 17 years age group having sample size (N) of 745,738 and the orphans were around 6.2 percent (Sample size is of 46,513) out of total children in this age group, as data available from the fourth round of the National Family Health Survey 2015–16.

Educational outcome were comparatively analyzed based on three indicators. First, the percentage of children who never attended the school which shows that around 8.5 percent of orphans were never attended school whereas non-orphans were around 4.8 percent. Second, the percentage of school dropouts and here 11.6 percent of orphans were dropped out of school whereas 4.6 percent non-orphans were dropped out of school. Third, children who are currently going school and among orphans, 76.9 percent were going school and out of non-orphans, 90.6 percent were going. This shows how the absence of parent hampered the child educations as almost twice the orphans were not attending school and thrice the orphans were dropped out from school when compared to non-orphans [Fig. 2].

These indicators show the actual status of education while associating with other background variables. This association of indicators with different variables is showing that orphans were lagging behind the non-orphans in almost every empirical relationship. Children who never attended school and school dropouts were mostly the orphans compared to non-orphans and both were decreasing as the household wealth index was increasing. Children belong to rural areas and female children were showing low educational status, especially among orphans. Orphans educational status was low among Muslims and in marginal section (scheduled caste and scheduled tribes) of society compared to non-orphans, also children belong to these sections of society were more educationally deprived compared to other section or religion [Table 4].

Odds of children who never attended school was 1.74 times higher among orphans than non-orphans. Odds of children who never attended school increases as household wealth index increases. Odds of children who never attended school were 1.53 times higher in rural areas. Region-wise odds of children who never attended school were highest in the north-east region than the north region of India. Odds of school dropouts was found to be more among the poorest households than richest households. Odd of school dropouts was 0.97 times among females than males. Odds of having school dropouts was 1.15 times higher in the north-east region than the north region of India. Odds of having school dropouts among Christian was 1.05 times higher than Hindu [Table 5].

Table 6 shows the main reason for not attending school as stated by

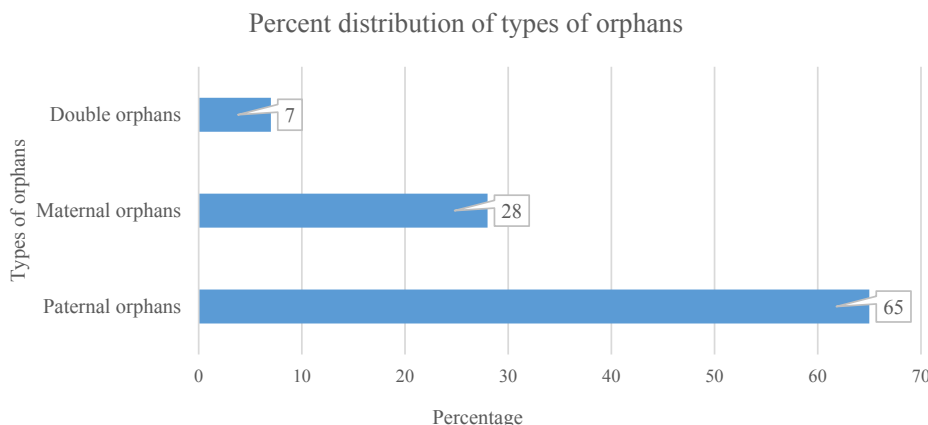


Fig. 1. Percent distribution of types of orphans (aged 0–17), NFHS-4 [2015–16]. N = 49958.

Table 1
Percent distribution of orphans (aged 0–17) and their living arrangement in Indian Households, NFHS-4 [2015–16].

Type of Orphans	Living with (%)		Grandparents	Other relatives	Adopted/Foster home	Other Households
	Either Parent					
	Father	Mother				
Paternal orphan	–	63.5	22.0	13.0	1.0	0.5
Maternal orphan	63.2	–	23.6	10.8	1.9	0.5
Double orphan	–	–	31.3	55.6	9.5	3.6

N = 49958.

Table 2
Percent distribution of orphans (aged 0–17) by background characteristics, NFHS-4 [2015–16].

Background Characteristics	Orphans (%)
Household Wealth index	
Poorest	5.8
Poorer	5.1
Middle	4.6
Richer	3.8
Richest	2.7
Religion	
Hindu	4.6
Muslim	4.1
Christian	5.3
Others	5.0
Caste	
Scheduled castes	5.0
Scheduled tribes	5.8
Other backward classes	4.3
Others	4.0
Place of residence	
Urban	4.4
Rural	4.6
Region in India	
North	4.8
East	4.3
West	4.2
South	4.4
Central	4.7
North-east	6.2
Sex of child	
Male	4.5
Female	4.6
Age of child	
0 – 4	1.1
5 – 8	3.0
9 – 12	5.7
13 – 17	9.0

N = 49958.

household members at national level. The reasons were categorized into four heads which are: School-related reasons, Household-related reasons, Child-related reasons, and Other reasons. The most imported reason cited was “Child not interested in studies”, as it was highest among both orphans and non-orphans. The reasons under School-related reasons were stated largely by non-orphans compared to orphans. The reasons under Household-related reasons and Child-related reasons were stated largely by orphans compared to non-orphans [Table 6].

3.3. Nutritional status

To examine the nutritional status for doing a comparative analysis between orphans and non-orphans, three indicators have been used which are: Stunting, Wasting, and Underweight. These indicators were analyzed for children belongs to the age group 0 to 59 months having sample size (N) of 268,873 and out of these many, 1.34 percent were orphans constitutes sample size (N) of 3610. As per WHO standard was also considered by the National Family Health Survey 2015–16, a child is defined as stunted if his height-for-age is more than two standard

Table 3
Odds ratio of orphans (0–17 years) with background characteristics, NFHS-4 [2015–16].

Background Characteristics	Odds ratio	[Confidence Interval]
Household Wealth index		
Poorest®	1.00	
Poorer	0.80***	[0.77, 0.82]
Middle	0.66***	[0.63, 0.68]
Richer	0.50***	[0.47, 0.52]
Richest	0.31***	[0.29, 0.33]
Religion		
Hindu®	1.00	
Muslim	0.91***	[0.87, 0.95]
Christian	1.08	[0.98, 1.18]
Others	1.26***	[1.17, 1.36]
Caste		
Scheduled castes®	1.00	
Scheduled tribes	1.14***	[1.09, 1.19]
Other backward classes	0.93***	[0.90, 0.96]
Others	0.96	[0.92, 1.01]
Place of residence		
Urban®	1.00	
Rural	0.72***	[0.69, 0.75]
Region in India		
North®	1.00	
East	0.76***	[0.74, 0.79]
West	0.88***	[0.84, 0.92]
South	1.02	[0.98, 1.07]
Central	0.85***	[0.82, 0.89]
North east	1.17***	[1.12, 1.23]
Sex of child		
Male®	1.00	
Female	0.99	[0.97, 1.02]
Age of child		
0 – 4®	1.00	
5 – 8	2.84***	[2.66, 3.03]
9 – 12	5.49***	[5.16, 5.85]
13 – 17	9.16***	[8.62, 9.74]

N = 49958, ®reference category, ***p < 0.001; **p < 0.005; *p < 0.010.

deviations below the WHO Child Growth Standards. Similarly, a child is defined as wasted if his weight-for-height is more than two standard deviations below the WHO Child Growth Standards. And, a child is defined as underweight if his weight-for-age is more than two standard deviations below the WHO Child Growth Standards (Fig. 3).

After doing a comparative analysis between orphans and non-orphans based on the three indicators, it was found that undernourishment was more among orphans. Stunting and underweight were found to be higher among orphans, whereas wasting was almost the same for both of them [Fig. 2].

The comparative analysis between orphans and non-orphans results in the undernourishment among orphans in almost every indicator while associating with available background characteristics. Stunting was higher among orphans in each category of wealth index except the richest, whereas wasting was either similar or lower among the orphans and same was the case for the underweight indicator. Undernourishment was found to be higher in male child and especially among orphans in all three indicators, same was the case for the children belongs to rural areas. Stunting and underweight increases as the age of children

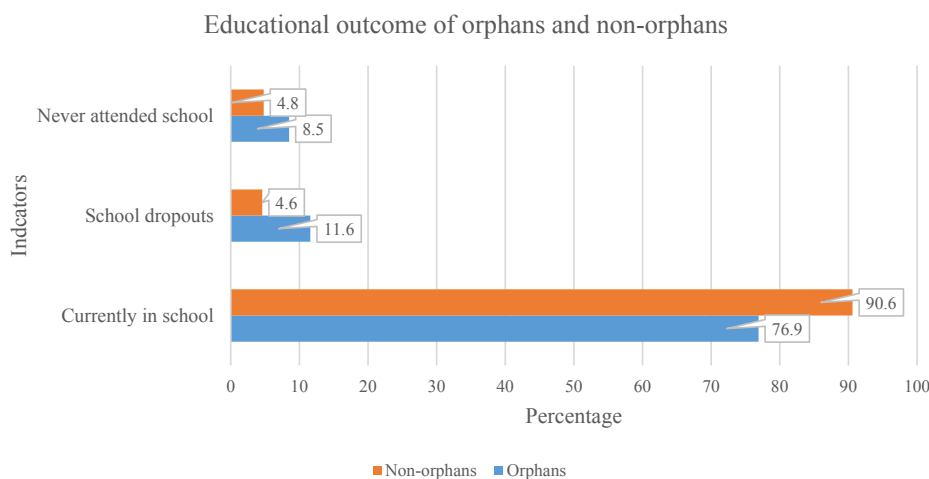


Fig. 2. Educational Status of Orphans and Non-orphans (aged 5–17 years) based on the three indicators, NFHS-4 [2015–16]. N = 745738.

Table 4

Percent distribution of Orphans and Non-orphans (aged 5–17 years) who never attended school, school dropouts, and currently in school by background characteristics, NFHS-4 [2015–16].

Background characteristics	Never attended school (%)		School dropouts (%)		Currently in school (%)	
	Orphans	Non-orphans	Orphans	Non-orphans	Orphans	Non-orphans
Household Wealth Index						
Poorest	15.0	10.7	11.8	10.3	73.2	79.0
Poorer	7.4	4.5	11.5	10.3	81.1	85.1
Middle	4.9	2.8	11.7	10.4	83.4	86.8
Richer	3.7	2.0	11.0	10.7	85.3	87.3
Richest	3.6	1.2	12.2	11.0	84.2	87.7
Religion						
Hindu	7.9	4.4	11.8	10.7	80.3	85.0
Muslim	15.0	8.6	12.2	10.2	72.8	81.3
Christian	4.6	3.1	10.6	9.3	84.8	87.7
Others	7.2	3.3	10.2	10.6	82.6	86.1
Caste						
Scheduled castes	9.3	5.4	11.9	10.7	78.8	83.9
Scheduled tribes	9.4	6.4	11.3	9.9	79.3	83.7
OBC's	8.4	4.7	11.8	10.8	79.8	84.5
Others	6.4	3.5	11.6	10.4	82.0	86.1
Place of residence						
Urban	7.8	3.5	11.5	10.7	80.7	85.8
Rural	8.7	5.4	11.7	10.4	79.6	84.2
Regions of India						
North	6.8	3.9	11.8	10.8	81.4	85.3
East	11.5	6.6	11.0	9.9	77.5	83.4
West	4.8	3.2	9.9	10.4	85.3	86.3
South	3.8	1.8	11.8	11.3	84.4	86.8
Central	11.2	6.6	12.9	10.9	75.9	82.5
North-east	5.9	3.3	10.6	9.3	83.5	87.4
Sex of child						
Male	8.3	4.4	11.5	10.3	80.2	85.2
Female	8.7	5.4	11.8	10.6	79.5	83.9
Age of child						
5 – 9	10.5	7.0	1.0	0.9	88.5	92.0
10 – 13	7.3	3.1	20.6	21.8	72.1	75.0
14 – 17	8.6	4.5	9.4	8.2	82.0	87.3

N = 745738.

increases, however, wasting decreases with age. Stunting was more prevalent among Hindus and Muslims, compared to remaining religion, however wasting and underweight was higher in Hindus. Children belong to Scheduled castes were more undernourished, compared to other sections of society, and the same was the cases for orphans [Table 7].

Odds of stunting and underweight in richest wealth index were found to be 71 percent less than poorest wealth index, in both the indicators, whereas wasting among the richest wealth index was found to be 37 percent less than poorest wealth index. Odds of stunting among the

females was found to be 9 percent less than males. Odds of stunting in the central region was 1.19 times higher and in the western region, it was 1.12 times higher compared to the north region of India. Odds of wasting was 1.35 times higher in the west region compared to the north region. Odds of underweight was 1.4 times higher in the western region and in the central it was 1.23 times higher than the north region. Here, odds of stunting, wasting, and underweight in Muslims was 1.22 times, 0.94 times, and 1.06 times respectively higher than Hindus. Odds of stunting was 11 percent less in Other Backward Classes than Scheduled castes. Odds of wasting was 1.27 times higher in Scheduled tribes than

Table 5
Odds ratio of Never attended school, School dropouts, and Currently in school (aged 5–17 years) by background characteristics, NFHS-4 [2015–16].

Background characteristics	Never Attended School		School dropouts		Currently in school	
	Odds ratio	Confidence Interval	Odds ratio	Confidence Interval	Odds ratio	Confidence Interval
Type of children						
Non-orphans®	1.00		1.00		1.00	
Orphans	1.74***	[1.67, 1.80]	1.02	[0.99, 1.05]	0.78***	[0.76, 0.80]
Household Wealth Index						
Poorest®	1.00		1.00		1.00	
Poorer	2.44***	[2.37, 2.51]	1.00	[0.97, 1.02]	0.65***	[0.63, 0.66]
Middle	4.11***	[3.96, 4.27]	0.98	[0.96, 1.01]	0.56***	[0.55, 0.57]
Richer	6.46***	[6.15, 6.78]	0.97*	[0.94, 1.00]	0.51***	[0.49, 0.52]
Richest	10.76***	[10.1, 11.49]	0.93***	[0.90, 0.96]	0.48***	[0.47, 0.50]
Religion						
Hindu®	1.00		1.00		1.00	
Muslim	0.32***	[0.31, 0.33]	1.02**	[1.00, 1.05]	1.56***	[1.53, 1.59]
Christian	1.05	[0.98, 1.12]	1.05**	[1.00, 1.09]	0.94***	[0.91, 0.98]
Others	0.95	[0.89, 1.01]	1.00	[0.96, 1.04]	1.02	[0.98, 1.05]
Caste						
Scheduled castes®	1.00		1.00		1.00	
Scheduled tribes	0.84***	[0.81, 0.87]	1.00	[0.97, 1.03]	1.08***	[1.06, 1.11]
Other backward classes	1.26***	[1.22, 1.30]	1.00	[0.98, 1.02]	0.92***	[0.90, 0.94]
Others	1.49***	[1.43, 1.56]	1.03**	[1.00, 1.06]	0.87***	[0.85, 0.89]
Place of residence						
Urban®	1.00		1.00		1.00	
Rural	1.53***	[1.48, 1.58]	0.99	[0.96, 1.00]	0.89***	[0.87, 0.91]
Region in India						
North®	1.00		1.00		1.00	
East	1.13***	[1.09, 1.18]	1.09***	[1.06, 1.13]	0.88***	[0.85, 0.90]
West	1.28***	[1.21, 1.36]	1.05***	[1.01, 1.09]	0.87***	[0.84, 0.90]
South	1.89***	[1.77, 2.01]	0.94***	[0.91, 0.97]	0.89***	[0.86, 0.91]
Central	0.89***	[0.86, 0.93]	1.00	[0.97, 1.02]	1.02**	[1.00, 1.04]
North east	1.65***	[1.56, 1.74]	1.15***	[1.11, 1.19]	0.74***	[0.71, 0.76]
Sex of child						
Male®	1.00		1.00		1.00	
Female	0.82***	[0.80, 0.84]	0.97***	[0.95, 0.98]	1.09***	[1.08, 1.10]
Age of child						
5 – 9®	1.00		1.00		1.00	
10 – 13	2.23***	[2.17, 2.29]	0.03***	[0.33, 0.36]	3.87***	[3.81, 3.95]
14 – 17	1.43***	[1.39, 1.46]	0.10***	[0.10, 0.11]	1.78***	[1.74, 1.82]

N = 745738, ®reference category; ***p < 0.001; **p < 0.005; *p < 0.010.

Table 6
Percent distribution of main reasons for not attending school by Orphans and Non-orphans (aged 5–17 years), NFHS-4 [2015–16].

Main reasons for not attending school	Orphans (%)	Non-orphans (%)
School-related reasons		
School too far away	3.59	6.14
Transport not available	1.08	1.68
No proper school facilities for girls	0.59	1.06
Not safe to send girls	1.05	1.46
No female teacher	0.28	0.23
Household-related reasons		
Costs too much	22.09	17.43
Required for outside work	4.47	2.89
Required for work in family business/farm	3.64	2.89
Further education not considered necessary	2.41	3.42
Child got married	3.00	3.53
Required for care of siblings	0.75	0.61
Child-related reasons		
Not interested in studies	29.08	34.29
Repeated failures in school	3.34	4.32
Did not get admission	2.91	3.81
Other reasons	3.55	4.13

N = 46009.

Scheduled castes. Odds of underweight was 1.04 times higher in Scheduled tribes than Scheduled castes (Table 8).

4. Discussion

This paper reviews the data on orphan’s living arrangement and their

educational and nutritional status based on the fourth round of the National Family Health Survey, India, 2015–16 and presents the comparative analysis between the orphans and non-orphans living in the households. The present study also sought to highlight the relationship between orphan’s living arrangements, educational status, and nutritional status with various indicators such as household wealth index, religion, caste, place of residence, region, sex, and age. Children without parental care are the most vulnerable ones, as they have to be dependent (especially economic dependency) on someone for their care and protection. Whether living in households or orphanages, orphans become the prisoners of their dependency (Ennew, 2005). Absence of parent puts the child’s life in jeopardy, but the evidence from various research has shown that living arrangement of orphans is way more important than presence/absence of parents for child’s overall development (UNICEF, 2014). Orphans living in the family environments, households with guardian/caregiver performs well in terms of development compared to institutionalized children as they learn various social skills which help them in while interacting as family and community members later in life (Smyke, Koga, Johnson, Fox, Marshall, Nelson, Zeanah, & Group, 2007; Groark & McCall, 2011). In most of the cases, orphans live with their relatives or extended family members, usually, it is informal in nature but for the parentless children, it is an acceptable mode of care for children. But orphans living with relatives or extended family have high chances of facing biases and discrimination within the households. As several studies stated that these discriminations and biases increase the risk of exclusion, neglect, abuse, or exploitation (Roby, 2011; Abebe & Aase, 2007; Roby, Shaw, & George, 2013). Thus, the current study tries to illustrate the discrimination or biases between the orphans and non-orphans living in the households. A study was done in Africa and found

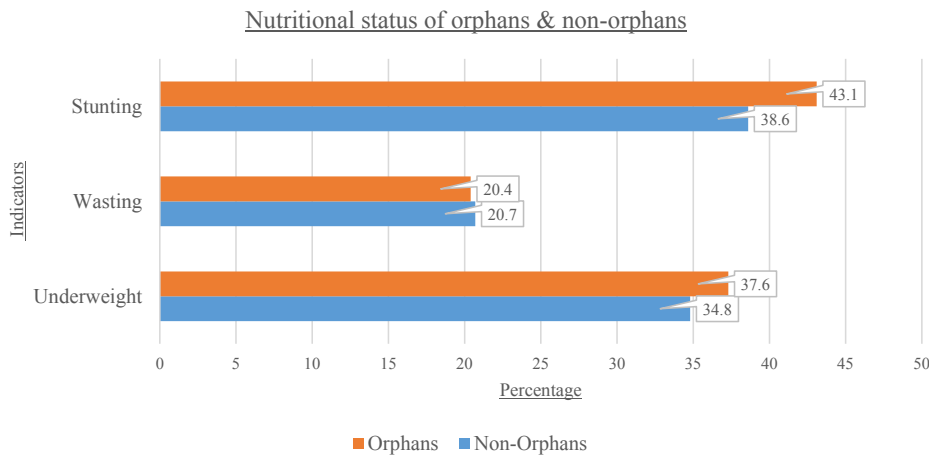


Fig. 3. Percent distribution of Nutritional status of Orphans and Non-orphans (aged 0–59 months) by Stunting, Wasting and Underweight, India, 2015–16. N = 268873.

Table 7
Percent distribution of Stunting, Wasting, and Underweight Orphans and Non-orphans (aged 0–59 months) by background characteristics, NFHS-4 [2015–16].

Background Characteristics	Stunting (%)		Wasting (%)		Underweight (%)	
	Orphans	Non-orphans	Orphans	Non-orphans	Orphans	Non-orphans
Household Wealth Index						
Poorest	52.1	50.8	24.0	24.9	47.9	48.0
Poorer	47.2	42.9	21.4	20.9	40.7	38.1
Middle	38.2	36.0	19.1	19.4	30.7	31.2
Richer	37.3	29.3	15.3	18.1	28.8	26.0
Richest	20.4	22.7	15.6	16.9	18.7	19.8
Religion						
Hindu	44.1	39.2	22.3	22.0	40.3	37.0
Muslim	43.1	39.6	17.2	18.4	36.3	33.5
Christian	36.7	33.4	13.5	13.4	21.0	20.8
Others	43.9	30.8	19.1	18.8	34.7	25.9
Caste						
Scheduled castes	46.5	43.5	22.5	21.9	41.8	39.7
Scheduled tribes	43.6	39.7	21.2	21.9	35.4	35.2
OBC's	45.5	39.5	20.8	21.0	40.6	36.5
Others	34.8	31.1	17.2	18.1	28.9	27.5
Place of residence						
Urban	38.3	31.6	17.7	19.1	31.9	28.7
Rural	44.5	40.7	21.2	21.1	38.9	36.6
Region in India						
North	34.9	33.2	15.6	19.5	26.8	28.5
East	49.4	43.4	22.9	23.5	48.0	42.7
West	40.9	37.5	30.8	26.4	44.1	38.7
South	35.8	30.3	22.1	20.6	36.2	28.4
Central	48.2	43.9	23.8	21.6	43.8	40.7
North-east	39.7	33.0	12.4	13.2	23.3	21.3
Sex of child						
Male	44.6	39.3	22.2	21.6	39.0	35.3
Female	41.5	37.6	18.5	19.6	35.4	34.4
Child's age in months						
0–11 months	29.8	22.3	26.7	27.9	32.4	27.4
12–23 months	45.0	42.4	25.1	21.4	37.9	33.4
24–35 months	44.5	42.2	21.7	19.5	36.4	36.6
36–47 months	45.3	43.8	17.3	17.7	36.7	37.3
48–59 months	43.2	40.1	18.5	17.4	39.3	37.8

N = 268873.

that orphans living in households headed by the extended family have lower educational outcomes compared to children of household head (Case, Paxson, & Ableidinger, 2004). In most of the cases, low educational outcome among orphans was consistent despite their difference in wealth indexes. However, there was no significant difference in educational outcome between boys and girls (Martha & Deon, 2006). Educational outcomes or cognitive ability heavily depends on the nutritional level and food intake of children, as proper nutrition is important for the proper functioning of the brain. This was highlighted

in a pilot study in which they had shown a direct correlation between undernourishment and cognitive delay. This pilot study found that orphanage's children have a high rate of malnourishment and cognitive delay (Kamath et al., 2017). However, a study was done in Ghana has shown that prevalence of stunting, wasting, and underweight was almost the same among orphans and non-orphans. Even, orphans living in the institutions have a more diversified diet pattern than non-orphans living in the households (Ali et al., 2018). Another study was done in Kenya, it compared household children, institutional children, and

Table 8

Odds ratio of Stunting, Wasting, and Underweight of Orphans and Non-orphans by background characteristics (aged 0–59 months), NFHS-4 [2015–16].

Background characteristics	Stunting		Wasting		Underweight	
	Odds ratio	Confidence Interval	Odds ratio	Confidence Interval	Odds ratio	Confidence Interval
Type of children						
Non-orphans ®	1.00		1.00		1.00	
Orphans	1.05	[0.98, 1.14]	1.06	[0.97, 1.16]	1.00	[0.92, 1.08]
Household Wealth Index						
Poorest ®	1.00		1.00		1.00	
Poorer	0.77***	[0.75, 0.79]	0.85***	[0.83, 0.88]	0.76***	[0.74, 0.77]
Middle	0.58***	[0.57, 0.60]	0.77***	[0.74, 0.79]	0.56***	[0.55, 0.58]
Richer	0.42***	[0.41, 0.44]	0.69***	[0.66, 0.71]	0.42***	[0.41, 0.44]
Richest	0.29***	[0.28, 0.31]	0.61***	[0.58, 0.63]	0.29***	[0.28, 0.30]
Religion						
Hindu ®	1.00		1.00		1.00	
Muslim	1.22***	[1.19, 1.26]	0.94***	[0.91, 0.97]	1.06***	[1.03, 1.09]
Christian	1.08***	[1.03, 1.13]	0.76***	[0.72, 0.81]	0.77***	[0.74, 0.81]
Others	0.92***	[0.88, 0.97]	0.95*	[0.90, 1.01]	0.86***	[0.82, 0.91]
Caste						
Scheduled castes ®	1.00		1.00		1.00	
Scheduled tribes	0.85***	[0.83, 0.88]	1.27***	[1.23, 1.32]	1.04**	[1.01, 1.07]
Other backward classes	0.89***	[0.86, 0.91]	0.99	[0.97, 1.02]	0.92***	[0.9, 0.94]
Others	0.71***	[0.69, 0.73]	0.91***	[0.87, 0.94]	0.75***	[0.72, 0.77]
Place of residence						
Urban ®	1.00		1.00		1.00	
Rural	0.97***	[0.94, 0.99]	0.92***	[0.89, 0.95]	0.90***	[0.88, 0.93]
Region in India						
North ®	1.00		1.00		1.00	
East	0.99	[0.96, 1.02]	1.01	[0.98, 1.05]	1.17***	[1.13, 1.20]
West	1.12***	[1.08, 1.16]	1.35***	[1.29, 1.41]	1.40***	[1.35, 1.46]
South	0.81***	[0.78, 0.84]	1.03	[0.98, 1.07]	0.92***	[0.88, 0.95]
Central	1.19***	[1.15, 1.22]	0.95***	[0.92, 0.98]	1.23***	[1.20, 1.27]
North east	0.73***	[0.70, 0.76]	0.53***	[0.51, 0.56]	0.50***	[0.48, 0.52]
Sex of child						
Male ®	1.00		1.00		1.00	
Female	0.91***	[0.90, 0.93]	0.88***	[0.86, 0.89]	0.93***	[0.92, 0.95]
Child's age in months						
0–11 months ®	1.00		1.00		1.00	
12–23 months	2.72***	[2.63, 2.80]	0.71***	[0.69, 0.73]	1.42***	[1.38, 1.46]
24–35 months	2.70***	[2.62, 2.78]	0.63***	[0.61, 0.65]	1.61***	[1.56, 1.65]
36–47 months	2.84***	[2.75, 2.92]	0.55***	[0.54, 0.57]	1.63***	[1.58, 1.68]
48–59 months	2.39***	[2.32, 2.47]	0.54***	[0.52, 0.56]	1.65***	[1.60, 1.70]

N = 268873, ®reference category; ***p < 0.001; **p < 0.005; *p < 0.010.

street children and has shown that there was no significant difference between these three but children living on the street were slightly undernourished (Braitstein & Ayaya, 2013).

5. Conclusion

Absence of parental care affects child's development multi-dimensionally, this present study tried to depict the situation of parentless children living in the Indian households. There are three overall conclusions that emerges from these results. First, the living arrangements of orphans shows that in household orphans were mainly living with grandparents or extended family members after the death of biological parent. Second, the educational outcomes of orphans were found to be lagging behind non-orphans. It was found that school dropouts and the percentage of children who never attended school were higher among orphans compared to non-orphans. There were various reasons mentioned by children regarding not going to school but the reasons related to household was one of the main reasons in case of orphans. Third, in terms of nutritional status there was no significant difference between orphans and non-orphans, that is, absence of parents didn't affect majorly the child nutritional level. Undernourishment mostly varies with household wealth index and caste of children.

In limitation, this study only covered the orphans who were living in households. The significant share of orphans in India lives in orphanages, shelter homes, and streets. As the National Family Health Survey doesn't capture population living other than the households, therefore these orphans are not analyzed in this study. Another limitation of this

study is that it does not cover those children who dropped out from schools for few years and then again got enrolled in schools because this survey only asked questions regarding school attendance for the previous year.

CRedit authorship contribution statement

Abhinesh Singh: Conceptualization, Methodology, Software, Formal analysis, Writing - original draft, Supervision. **T.V. Sekher:** Conceptualization, Writing - review & editing.

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