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# **AN ASSESSMENT OF EARLY CHILDHOOD DEVELOPMENT STATUS AND PRE- DOMINANT CARE-GIVING PRACTICES IN BAKHEL – RAJASTHAN, INDIA**

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# An assessment of Early Childhood Development status and pre-dominant care-giving practices in Bakhel – Rajasthan, India

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## Abstract

Early childhood development plays a crucial role in the overall development of children, their future growth potential and their abilities to come out of vicious cycles of poverty in low and middle income country settings.

This study aims to understand the status of early childhood development in the village of Bakhel, an indigenous Adivasi community in Southern Rajasthan with extreme levels of deprivation. It employs a tool designed to comprehensively measure a child's developmental status, assess caregiving practices and the caregivers' capacity to care.

The study found that while motor and social and emotional development of children in the area are largely normal, >50% of children have some form of language delay and similar proportions of children show signs of growth failure (stunting and underweight). Low vaccination rates, sub-optimal feeding practices and a lack of caring practices which encourage language development contribute to patterns of delay observed and are compounded by underlying poverty and illiteracy which limit caring capacity of guardians.

Language interventions and improved vaccination and nutrition are priority areas in Bakhel to enable children in the area to achieve their developmental potential.

## Introduction

Bakhel is a village located in the Kotra administrative division of Udaipur district in Rajasthan with a total of 369 households and a population of 2088 individuals. The population of children with age 0-6 years is 689 which makes up to 25.90 % of total population of village.<sup>1</sup>

This study aimed to assess the early childhood development (ECD) status of children living in Bakhel. The study was preceded by development of a tool that comprehensively measures a child's developmental status, assesses caregiving practices and the caregivers' capacity to care and is customised for low and middle income country settings.<sup>2</sup>

This study took a representative sample of 60 children living in Bakhel aged between 1 and 4 years old. It aimed to comprehensively assess the ECD status in order to guide future interventions in the region. The assessment was done by investigating three key dimensions of ECD elaborated in the table below:

Dimension of ECD	Components
Developmental status of a child	Motor development
	Language and Cognitive development
	Social and Emotional development
	Physical Growth
Predominant caring practices in the community	Care to prevent illness e.g. nutrition, vaccination & hygiene
	Care during ill health
	Language and cognitive and social/emotional stimulation
	Predominant disciplining practices
Capacity of households to provide developmentally friendly care	Contribution of under-5s to the household economy
	Availability of appropriate resources to promote language, cognitive and social and emotional growth
	Awareness of caregivers of developmentally friendly practices and ability to provide these

Table 1: Dimensions of Early Childhood Development

## Methods

A representative sample of 60 children from Bakhel was selected using stratified random sampling, with stratification by age and hamlet.

Assessment of various dimension of ECD were assessed using a standardised, age specific questionnaire, with children's carers as the main respondents. Where appropriate, responses from the questionnaire were correlated against findings from direct observation and interaction with the children.

Results from the questionnaire were analysed in Microsoft Excel and Stata 13.0.

## Developmental status of children in Bakhel

The main findings from the study with respect to gross and fine motor development, language and cognitive development, social and emotional development and physical growth of children are set out below.

### Motor Development

In a setting with poor antenatal and emergency obstetric care and a high birth rate, it was felt that children may be at significant risk of gross motor delay due to cerebral palsy and delivery complications. To understand if this was the case, gross motor (ability to sit up, walk etc.) and fine motor (hand-eye coordination etc.) were

assessed. It was done both by interviewing parents and interacting with the children. In reality, there was very little evidence of significant motor delay among children in Bakhel. A one-year old child was unable to finger feed, suggestive of fine motor delay, but had no significant gross motor concerns. A handful of other children had soft signs for motor delay.

Age group	Gross motor development		
	No delay	Possible/ mild delay	Delay
1 year olds	15	-	-
2 year olds	12	-	-
3 year olds	18	-	-
4 year olds	14	1	-
<b>Total</b>	59 (98.3%)	1 (1.7%)	0
Age group	Fine motor development		
	No delay	Possible/ mild delay	Delay
1 year olds	14	-	1
2 year olds	10	2	-
3 year olds	15	2	-
4 year olds	15	-	-
<b>Total</b>	54 (91.5%)	4 (6.8%)	1 (1.7%)

Table 2: Motor Development

### Language & Cognitive development

In contrast to motor development, there was evidence of significant language and cognitive delay in children in Bakhel and this became more apparent with increasing age. Over 50% of children aged 3 or 4 had evidence of language delay and 87% of children in the same age group had showed evidence of mild-moderate cognitive delay. Manifestations of delay in these age groups included not being able to state their name and sex, identify basic colours and having a limited vocabulary.

As signs of delay were more apparent in children from the ages of 3 and 4, it is likely that both the language and cognitive delay are acquired, rather than a result of congenital problems, in most instances. The levels and appropriateness of stimulation received by children at these ages (as discussed in the below section) might explain the delays observed.

Age group	Language development		
	No delay	Mild delay	Delay
1 year olds	14	1	-
2 year olds	8	-	4
3 year olds	8	9	1
4 year olds	8	5	2
<b>Total</b>	38 (63.3%)	15 (25%)	7 (11.7%)
Age group	Cognitive development		
	No delay	Mild delay	Delay
1 year olds	13	2	-
2 year olds	12	-	-
3 year olds	3	15	-
4 year olds	1	14	-
<b>Total</b>	29 (48.3%)	31 (51.7%)	0 (%)

Table 3: Language and Cognitive Development

### Social & emotional development

Similar to motor delay, there was no evidence of significant social and emotional delay among children in Bakhel. Most of the children engaged in age-appropriate play and social interactions. They were able

to feed, dress and toilet themselves as appropriate for their age.

Age group	Social & emotional development		
	No delay	Possible/ mild delay	Delay
1 year olds	13	2	-
2 year olds	11	1	-
3 year olds	18	-	-
4 year olds	13	2	-
<b>Total</b>	55 (91.7%)	5 (8.3%)	0 (%)

Table 4: Social and Emotional Development

### Physical growth

Stunting (short stature for age) is an indicator of chronic malnutrition. This can be a consequence of poor nutritional intake or chronic or repeat infections which prevent children from achieving their full growth potential. Children stunted at the age of 2, rarely make this growth up, in turn putting their children at risk of sub-optimal growth. In Bakhel, a vast majority of children (90%) are stunted. This figure appears high when compared to published figures- approximately 50% of children across India are stunted and studies in similar rural settings suggest stunting rates of approximately 60-65%.<sup>3</sup> It is unclear if the findings from Bakhel are truly representative of the growth status of children in the area. Further measurements as part of the Safe Motherhood and Childhood health programme run by Educate for Life will be useful in clarifying whether the rates of stunting are consistently higher than published figures or not.

Age group	Stunting status (low height-for-age)		
	Normal	Stunted	Severely stunted
1 year olds	3	2	10
2 year olds	0	2	10
3 year olds	2	1	15
4 year olds	1	0	14
<b>Total</b>	6 (10%)	5 (8.3%)	49 (81.7%)

Table 5a: Low height for age status

Underweight, is an indicator of a combination of acute and chronic factors which result in poor weight gain for age. Children have the capacity to develop to a healthy weight, even if they do not grow to their full potential height if factors contributing to their low weight are addressed. In Bakhel, 54.3% of 1-4 year olds are underweight or severely underweight.

Age group	Underweight status (low weight-for-age)		
	Normal	Underweight	Severely underweight
1 year olds	5	1	9
2 year olds	7	1	4
3 year olds	11	1	6
4 year olds	4	3	7
<b>Total</b>	27 (45.8%)	6 (10.2%)	26 (44.1%)

Table 5b: Low weight for age status

Wasting is an indication of acute malnutrition (due to recent illnesses or recent drops in calorific intake) and

is strongly associated with under-5 mortality in this age group. In Bakhel, at the time of survey, approximately 30% of children had evidence of wasting. This was in keeping with findings from other surveys from rural India.

Age group	Wasting status (low weight-for height)		
	Normal	Wasted	Severely wasted
1 year olds	11	1	3
2 year olds	9	1	2
3 year olds	14	1	2
4 year olds	7	2	6
<b>Total</b>	41 (69.5%)	5 (8.5%)	13 (22.0%)

Table 5c: Low weight for height status

### Summary of Findings on developmental status of children in Bakhel:

#### Motor development:

- 98.3% 1-4 year olds showed no delay in gross motor (ability to sit up, walk etc.) development
- 91.5% of the children in the study showed no delay in fine motor (hand-eye coordination etc.) development

#### Language and Cognitive development:

- Over 50% of children aged 3 or 4 had evidence of language delay
- 87% of children in the age group of 3 or 4 had features suggestive of mild-moderate cognitive delay
- signs of delay were more apparent in children from the ages of 3 and 4, indicating delay in development of acquired skills rather than congenital problems

#### Social and Emotional development:

- no evidence of significant social and emotional delay among children

#### Physical growth:

- 90% of the children showed stunted growth
- 54.3% of 1-4 year olds were underweight or severely underweight
- 30% of the children showed evidence of wasting

## Predominant caring practices in Bakhel

### Care to prevent ill health

#### Appropriate nutrition

WHO recommends that children are exclusively breastfed to the age of 6 months and from 6 months onward they should receive complementary foods along with breastfeeding to the age of 2 years. A detailed dietary questionnaire was beyond the scope of the survey, but it was found that 10 of 15 (67%) under-2s in the survey were breastfed the previous day. One 1 year old continued to be breastfed without complementary

foods and 9 other over-1 children received 2 or less solid meals in the previous 24 hours.

### Vaccination

Caregivers reported very low vaccination rates for children in the community. Of the 60 children surveyed, 6 (10%) parents reported ever having owned a vaccination record card and only 2 (3%) possessed a vaccination record at the time of survey. 51 of the 60 children (85%) had never received any vaccinations and no children were fully up to date with primary immunisation.

	Never immunised	Partially immunised	Fully immunised	Unkn own
BCG	52	-	7	1
Polio	51	7	1	1
DTP	52	7	0	1
Hep B	52	5	2	1
Measles	54	-	5	1
Vitamin A	54	4	1	1
<b>Up to date</b>	51 (85%)	9 (15%)	-	-

Table 6: Immunisation status

### Hygiene

Number of children who had washed in the last 24 hours and handwashing following use of toilet were recorded as indicators of predominant hygiene practices in Bakhel. 52 of 60 parents (87%) reported that their child had washed with soap in the past 24 hours. All parents said that their children had washed their hands following their most recent use of the toilet. 53 of 60 (88%) children had used soap at this time. These figures seem surprisingly high and may be biased by 'social desirability' in reporting from parents. Nevertheless, they indicate a high level of awareness of the importance of washing and hand washing with soap for hygiene purposes.

### Care during ill health

41 (68%) children had either a febrile illness associated with a diarrhoeal illness or cough with rapid breathing in past 3 months. Of these 24 (40%) had sought advice from the primary health centre, government hospitals or the mobile health clinic, each of which provide reliable care from qualified individuals. 3 (5%) individuals had sought advice from a private pharmacy or hospital, a less reliable source of care, while 9 (15%) had sought care from a traditional healer and 5 (8%) sets of parents had sought no advice at all.

### Care to promote language and cognitive development

Children in Bakhel generally receive limited stimulation to promote language and cognitive development. When asked what stimulation children had received in the 3 days preceding the survey, no children had had stories told to them, 3 (5%) had songs or lullabies sang to or with them and 10 (17%) children had engaged with a

naming, counting or drawing activity with an adult from home.

52 (87%) of the children attended no formal learning space, while the remaining 8 (13%) either came to Hunar Ghar or the anganwadi centre. Of the 60 children 37 (62%) had not gone outside of the house and its compound in the past 3 days and 13 (22%) had not had play or stimulation at all in the preceding 3 days.

### Care without neglect, conflict or abuse to enable appropriate social and emotional development

Caregivers were asked about children's experiences in the week preceding the survey to 1) understand if children were being left in the care of appropriate individuals 2) children were being exposed to conflict or abuse and 3) the extent to which under-5s were being asked to contribute to the household economy and chores.

### Summary of Findings on predominant caring practices in Bakhel:

#### Care to prevent ill health:

- 67% under-2s in the survey were breastfed the previous day
- 10% parents reported ever having owned a vaccination record card
- 85% children had never received any vaccinations
- No children were fully up to date with primary immunisation
- 87% parents reported that their child had washed with soap in the past 24 hours

#### Care during ill health:

- 40% parents had sought advice for their child's illness from the primary health centre, government hospitals or the mobile health clinic
- 8% sets of parents had sought no advice at all

#### Care to promote language and cognitive development:

- Only 5% children had songs or lullabies sang to or with them
- 87% of the children attended no formal learning space
- 62% had not gone outside of the house and its compound in the past 3 days

#### Care to enable appropriate social and emotional development:

- 52% children had been hit by a caregiver to discipline them
- 27% children helped with care for another sibling and sweeping the house

1 parent reported their child had been left in the care of an under-10 year old for 1 day that week while 33 (55%) reported that they did not know how many days in the week this had happened. This suggests parents are often not fully aware of who is looking after their children.

35 (58%) caregivers reported that their children had either been spoken to with a raised voice in anger or witnessed adults speaking in anger in the past week. Furthermore, 31 (52%) children had been hit by a caregiver to discipline them in the previous week and 36 (60%) children had witnessed another family member being hit in the previous week.

11 (18%) children had helped care for another sibling and 5 (8%) had swept the house in the past week. However, none of the children had been involved in any other labour (paid or unpaid) or housework (fetching water, helping in the farm, tending animals, cooking, fetching firewood).

### Caregivers' capacity to provide developmentally friendly care

Parents and caregivers in Bakhel face many challenges that limit the quality of care they are able to provide their children. These include poverty and socio-economic stressors, which result in children helping around the house from an early age and make it difficult for parents to purchase learning and play resources or send their children to crèches/nurseries for stimulation.

Compounding these challenges are the low levels of education & literacy among adults in the area. Parents are poorly equipped to support their children's cognitive and language development. Both socio-economic status and educational status of adults in Bakhel are well documented in the village survey.<sup>4</sup> To understand how these indicators impact the caregivers' capacity to provide developmentally friendly care, they were asked about their knowledge of age appropriate songs, stories and poems, as well as the availability of learning and play resources in the household.

51 (85%) sets of caregivers knew no age appropriate songs, stories or poems to be able to tell their children and the same number possessed no age appropriate books or had pens, pencils or crayons for children to draw with.

In terms of play objects in the household, of 60 children, only 18 (30%) had homemade toys and dolls to play with and 20 (67%) had toys bought from outside to use.

56 (93%) households reported that the main objects used for play were household objects such as pots and utensils and pebbles, sticks etc. which could be found around the home.

### Summary of Findings on caregivers' capacity to provide developmentally friendly care:

- 85% caregivers knew no age appropriate songs, stories or poems to be able to tell their children
- 30% of the children had homemade toys and dolls to play with
- 67% had toys bought from outside to use
- 93% households reported that the main objects used for play were household objects such as pots and utensils and pebbles, sticks etc.

### Conclusions and suggestions for intervention

This study demonstrates the efficacy of a comprehensive tool to assess ECD status that takes into account cultural and socio-economic variables of a region, particularly in low and middle income settings. It not only enables a more nuanced understanding of the developmental status of children in the region but also provides crucial information to design specific

interventions to address the challenges of childhood development in the region.

While the study found no evidence of motor delay, it revealed significant delay in language and cognitive development in most children in Bakhel. The study also revealed limited capacity of households to provide developmentally friendly stimulation to promote language development. This was a result of limited time, resources and knowledge of developmentally appropriate practices. The fact that language and cognitive delays in Bakhel are acquired over the life-course and not linked to congenital conditions indicates that interventions can be designed to support caregivers and equip them with skills and resources which promote cognitive development of children.

Growing up in a resource-poor setting also entails chronic malnutrition resulting in stunted physical growth, underweight and wasting, as shown in the study results. This reinforces the need to make appropriate nutrition available to children during critical developmental phases of early childhood, along with an emphasis on vaccination and hygiene.

Overall, this study demonstrates the importance of considering early childhood development as a complex process, which is determined by socio-economic processes, patterns of health and child-rearing behaviours. In Bakhel, supporting language development, promoting vaccination and optimising nutrition are priority areas to enable children to achieve their developmental potential.

1. India RG. Census of India, 2011. *India, Provisional Population Totals, Paper 2011*; **1**.
2. Goodman E, Forrest E, Patel A. Developing a community-based tool to assess the status of early childhood development in low- and middle-income settings. *Educate for Life*; 2016.
3. Shahnawaz M, Singh JB. Nutritional status among the children living in predominantly tribal block of Jhadol in district Udaipur, Rajasthan, India: A cross sectional study. *Epidemiology, Biostatistics and Public Health* 2013; **11**(2).
4. Forrest E, Silvera K, Goodman E, Harris I, Patel A. Bakhel Village Survey 2015. 2015.

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