

# NUTRITION

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## 3.2 Nutritional status along with morbidity and mortality of under five children in Jodhpur District of Rajasthan - A follow up study of earlier registered Neonates and Infants up to 5 years.

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**Commencement:** Sept, 2010      **Duration:** Five Years      **Status:** Ongoing

### OBJECTIVES

1. To study profile of Health and Nutritional Status of earlier registered neonates & infants followed up to 5 years of age group by means of anthropometry, and clinical examination for nutritional deficiency signs along with feeding practices and their follow up to 5 years of age group at the interval of 6 months.
2. To study the types of morbidity, mortality and their causes of earlier registered neonates & infants followed up to 5 years of age group.
3. To study the time trend analysis of growth and nutrition of earlier registered neonates & infants followed up to 5 years of age group.

### PROGRESS

This is in continuation of an earlier project study entitled 'Nutritional status along with morbidity and mortality of Neonates and Infants in Jodhpur district'. It is a follow up study and will be continued on earlier registered 300 neonates & infants from 28 villages (Table 1) from Luni Panchayat Samiti of Jodhpur district which has been followed up to 5 year of age group at an interval of 6 months in the above mentioned project. The study has been continued on same 300 subjects as mentioned above.

**Table 1: List of Villages from Salawas CHC from where the earlier registered neonates and infants were covered**

S. No.	Villages	S. No.	Villages
1	Tanavda	15	Shikarpura
2	Sangaria	16	Jhalamand
3	Salawas	17	Nimbla
4	Nandvan	18	Guda Bishnoi
5	Sarecha	19	Sangasani
6	Sar	20	Bacharna
7	Mogarkalla	21	Chainpura Bhatan
8	Feach	22	Karnayali
9	Dhundhara	23	Modi
10	Hanwant Nagar	24	Golia Magra
11	Piparli	25	Madopur
12	Dedas	26	Dudia
13	Luni	27	Nai Basti
14	Vishnu Nagar	28	Krishna Kheda

Under five children which have been earlier registered as Neonates & Infants were distributed according to different Months / Years as given in Table 2.

During the period under report, we covered 250 under five children. Now 50 under five children are remaining to be covered. Each registered child / infants are followed up every six month for clinical examination of nutritional deficiencies, morbidities, mortality, anthropometry, immunization, mile stones, feeding practices and socio-cultural causes for mortality. Their mothers were also interviewed.

**Table 3. Distribution of children of 24 months age group according to WHO classification for Weight for age**

Sex	No.	Normal		Moderate <-2SD		Severe <-3SD	
		No.	Percent	No.	Percent	No.	Percent
Boys	112	61	54.5%	41	36.6%	10	8.9%
Girls	161	109	67.7%	38	23.6%	14	8.7%
<b>Total</b>	273	170	62.3%	79	28.9%	24	8.8%

**Table 4. Distribution of children of 24 months age group according to WHO classification for Height for age**

Sex	No.	Normal		Moderate <-2SD		Severe <-3SD	
		No.	Percent	No.	Percent	No.	Percent
Boys	112	10	8.9%	27	24.1%	75	67.0%
Girls	161	24	14.9%	33	20.5%	104	64.6%
<b>Total</b>	273	34	12.5%	60	22.0%	179	65.6%

**Table No. 2. Distribution of under Five Children according to different Months / Years**

S. No.	Months / Years (Neonates)	Neonates (0-7 days)	Infants (1 year)		1½ year		2 years		2½ years		3 years		3½ years		4 years		4½ years		5 years	
I	Sept 2007 to Dec 2007 (1 to 58)	58	Sept 2008 to Dec 2008 (58 - 8)	50	Mar 2009 to June 2009 (50 - 1)	50	Sept 2009 to Dec 2009 (50 - 1)	48	Mar 2010 to June 2010	48	Sept 2010 to Dec 2010	48	Mar 2011 to June 2011	48	Sept 2011 to Dec 2011	48	Mar 2012 to June 2012	48	Sept 2012 to Dec 2012	48
II	Jan 2008 to Apr 2008 (59 to 128)	70	Jan 2009 to Apr 2009 (70 - 6)	64	July 2009 to Oct 2009 (64 - 1)	63	Jan 2010 to Apr 2010	63	July 2010 to Oct 2010	63	Jan 2011 to Apr 2011	63	July 2011 to Oct 2011	63	Jan 2012 to Apr 2012	63	July 2012 to Oct 2012	63	Jan 2013 to Apr 2013	60
III	May 2008 to Aug 2008 (129 to 190)	62	May 2009 to Aug 2009 (62 - 6)	56	Nov 2009 to Feb 2010 (56 - 1)	55	May 2010 to Aug 2010	55	Nov 2010 to Feb 2011	55	May 2011 to Aug 2011	55	Nov 2011 to Feb 2012	55	May 2012 to Aug 2012	55	Nov 2012 to Feb 2013	55	May 2013 to Aug 2013	53
IV	Sept 2008 to Dec 2008 (191 to 250)	60	Sept 2009 to Dec 2009 (60 - 3)	57	Mar 2010 to July 2010	57	Sept 2010 to Dec 2010	57	Mar 2011 to July 2011	57	Sept 2011 to Dec 2011	57	Mar 2012 to July 2012	57	Sept 2012 to Dec 2012	57	Mar 2013 to July 2013	57	Sept 2013 to Dec 2013	55
V	Jan 2009 to July 2009 (251 to 300)	50	Jan 2010 to July 2010	50	July 2010 to Jan 2011	50	Jan 2011 to July 2011	50	July 2011 to Jan 2012	50	Jan 2012 to July 2012	50	July 2012 to Jan 2013	50	Jan 2013 to July 2013	50	July 2013 to Jan 2014	50	Jan 2014 to July 2014	50
	<b>Sept 2007 to July 2009</b>	<b>300</b>	<b>Sept 2008 to July 2010</b>	<b>277</b>	<b>Mar 2009 to Jan 2011</b>	<b>275</b>	<b>Sept 2009 to July 2011</b>	<b>273</b>	<b>Mar 2010 to Jan 2012</b>	<b>273</b>	<b>Sept 2010 to July 2012</b>	<b>273</b>	<b>Mar 2012 to Jan 2013</b>	<b>273</b>	<b>Sept 2011 to July 2013</b>	<b>273</b>	<b>Mar 2013 to Jan 2014</b>	<b>273</b>	<b>Sept 2012 to July 2014</b>	<b>266</b>

Among the under five children belonging to 2 years age group (N= 273) revealed that that 41.0 percent were males and 59.0 percent were females (Table 3).

The extent of different types of malnutrition viz stunting (Height for age), under weight (Weight for age) and wasting (Weight for Height) were computed by adopting standard anthropometric measurement less than Median-2SD of WHO values were considered as undernourished.

Under weight (Weight for age): Table 3 shows the distribution of children of 24 months age group according to under weight i.e. Weight for age using WHO standards. It was observed that 54.5% boys were normal whereas 45.5% were under weight. In case of girls, 32.3% were under weight. Overall 37.7% children were under weight and 8.8% belong to severe category.

Stunting (Height for age) was 87.5 % among children of 24 months age group with the prevalence of severe stunting 65.6%, which needs attention. Stunting was 91.1% in boys and 85.1% in girls (Table 4). Wasting (Weight for Height) computed by adopting standard severe wasting 0.0% (Table 5).

**Table 5. Distribution of children of 24 months age group according to WHO classification for Weight for Height**

Sex	No.	Normal		Moderate <-2SD		Severe <-3SD	
		No.	Percent	No.	Percent	No.	Percent
Boys	112	111	99.1%	1	0.9%	0	0.0%
Girls	161	160	99.4%	1	0.6%	0	0.0%
Total	273	271	99.3%	2	0.7%	0	0.0%

Main morbidities observed among children of 24 months age group were, fever (23.1%), GIT (23.1%), acute respiratory infection (20.5%), Ear disease (7.7%), Eye disease (2.6%) and skin infection (1.5%). ARI observed higher in males (29.5%) in comparison to females (14.3%) whereas Fever & GIT was higher in females (25.5% & 24.2%) than males (19.6% & 21.4%), Epilepsy (one female baby) and Polio (one male baby) (Table 6).

**Table 6. Distribution of children of 24 months age group according to Morbidity**

Morbidity	Males N=112		Females N=161		Total N=273	
	No.	Percent	No.	Percent	No.	Percent
N.A.D.	58	51.8%	83	51.6%	141	51.6%
Fever	22	19.6%	41	25.5%	63	23.1%
GIT	24	21.4%	39	24.2%	63	23.1%
ARI	33	29.5%	23	14.3%	56	20.5%
Eye Disease	3	2.7%	4	2.5%	7	2.6%
Ear Disease	11	9.8%	10	6.2%	21	7.7%
Skin Infection	2	1.8%	2	1.2%	4	1.5%

Regarding nutritional deficiency signs, it was observed that discoloration of hair, a sign of protein calorie malnutrition was observed to be high i.e. 62.3%, Angular stomatitis was observed to be 12.5%, Teeth Problem was 0.4% (Table 7). It was observed that 99.6% of children belong to category of 'Breast feeding & Top Milk consumption' and same 99.6% of children belong to category of 'Cereal Supplementation' up to the age of 24 months.

**Table 7. Distribution of population according to nutritional deficiency signs**

Nutritional deficiency Signs	Males		Females		Total	
	N=112	%	N=161	%	N=273	%
N.A.D.	40	35.7%	54	33.5%	94	34.4%
Hair Discoloured	71	63.4%	99	61.5%	170	62.3%
Angular stomatitis	14	12.5%	20	12.4%	34	12.5%
Teeth Problem	0	0.0%	1	0.6%	1	0.4%

Out of 300 neonates & infants registered earlier, 13 died up to the age of one year and 10 were not available/ not co-operated. The children followed up to the age of 24 months were 273, out of which 1 died between 1-1/2 year and 2 years age. Thus, mortality between one & half year – two years age group was 03.3/1000, whereas Mortality up to two years age (0-24 months) was 56.7/1000.

### **Expected Outcome**

Results of the study will be helpful in formulation of simple interventional plan for under five children for reduction of under nutrition, morbidity and mortality among under five children. The Research output of this project will also help in developing package for under 5 children, which will be useful to State Health Department Functionaries.