

3.3 Nutritional status along with morbidity and mortality of under five children - a follow up study of earlier registered Neonates and Infants up to 5 years-

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Duration: 5 years

Status: Ongoing

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OBJECTIVES

1. To study profile of Health and Nutritional Status of earlier registered 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 infants followed up to 5 years of age group
3. To study the time trend analysis of growth and nutrition of earlier registered infants followed up to 5 years of age group

RATIONALE

The childhood period, especially the second year of life, is notoriously fraught with risk. The young child is "transitional" as regards to diet, immunity to infections and psychological dependence. This is a period of rapid growth with high nutrient needs, particularly of protein for swiftly increasing muscle tissue. It is the time several meals a day are required and when foods should be easily masticable and digestible. It is at this time also that the non-immune child comes in contact with a succession, or more often accumulation, of bacterial, viral and parasitic infections. Lastly, it is often the occasion for the psychological trauma that occurs as a result of the sudden separation from the mother after a prolonged period of continuous intimate contact and permissive breast - feeding frequently caused by a further pregnancy.

Certain vitamin and mineral deficiency disease occur with varying frequency in under 5 children in different parts of the world, including, for example avitaminosis A, rickets and iron-deficiency anemia. The incidence varies greatly from place to place, depending upon the local dietary and social factors. Thus, rickets in sunnier parts of the world may be related to lack of exposure to available ultraviolet light due to overcrowding in urban dwellings, as in old style walled cities or in slums, or to a deliberate sheltering of young children from the sun for various cultural reasons, e.g. to prevent their acquiring a darker complexion or to escape the "evil eye". However, the principal forms of malnutrition

seen during this transitional period are those now termed “protein calorie malnutrition of early childhood” including kwashiorkor. However, time trend analysis of growth and nutrition is still lacking from desert part of Rajasthan where conditions are very harsh, demanding a great amount of work to be done. So are no data / information is available from this part of the country.

PROGRESS

This is continuation of the 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 study will be continued on earlier registered 300 neonates & infants from 28 villages (Fig. 1 and Table 1) from Luni Panchayat Samiti of Jodhpur District which will be followed up to 5 year of age group at an interval of 6 months in the above mentioned project. The study will be continued on same 300 subjects as mentioned above.

In the last SAC meeting held on 20-22nd May 2010, SAC Chairman suggested to continue of earlier registered 300 neonates & infants in Jodhpur district.

Thus regular survey was initiated from September, 2010. The survey is going on. So far 300 infants have been completed at the interval of 6 months up to the age of 3 years. They were examined clinically for morbidity, mortality and nutritional deficiency signs, anthropometry (height, weight, arm circumference, chest circumference, head circumference and fat fold triceps following standard techniques of WHO) and feeding practices.

Fig. 1. Map of study villages

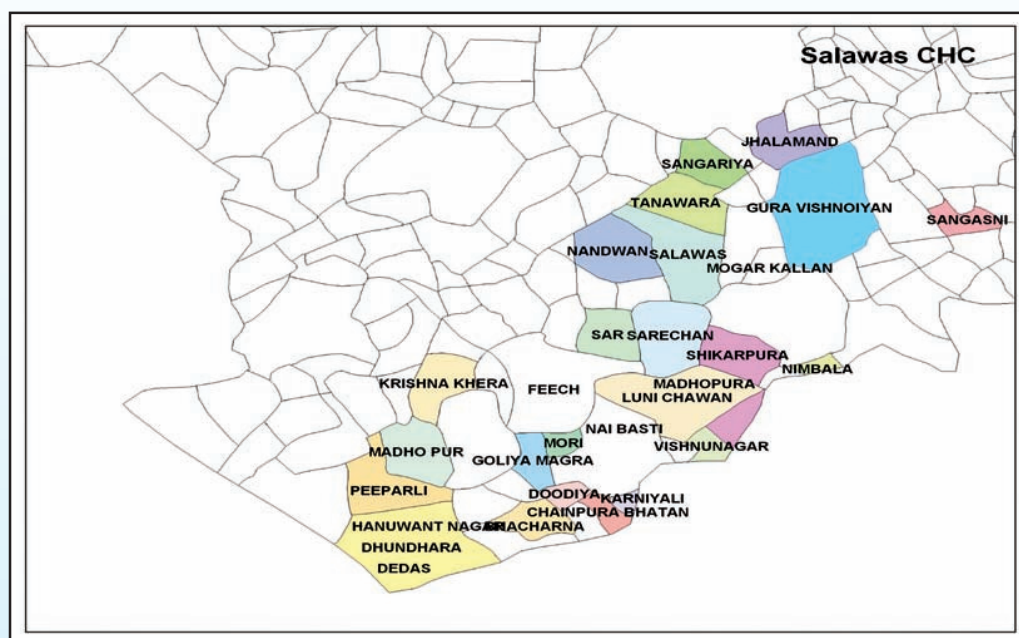


Table 1. List of Villages from Salawas CHC from where the earlier registered neonates and infants were covered

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

The analysis of the children belonging to one & half years age group (N= 275) revealed that that 40.7 percent were males and 59.3 percent were females (Table 2).

Table 2. Sex wise distribution of children of 18 months age group covered

Males		Females		Total
No.	Percent	No.	Percent	No.
112	40.7	163	59.3	275

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 deviation classification using WHO standards. All the children with any of the above 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 18 months age group according to under weight i.e. Weight for age using WHO standards. It was observed that 68.8% boys were normal whereas 31.2 percent were under weight. In case of girls, 36.8% were under weight. Overall 34.6% children were under weight and 6.5% belong to severe category.

Stunting (Height for age) was 63.6 % among children of 18 months age group with the prevalence of severe stunting 26.9%, which needs attention. Stunting was 67.1% in boys and 61.3% in girls (Table 4). Wasting (Weight for Height) computed by adopting standard deviation classification using WHO standards was 6.9 percent with the prevalence of severe wasting 1.4% (Table 5).

Table 3. Distribution of children of 18 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	77	68.8	28	25.0	7	6.2
Girls	163	103	63.2	49	30.1	11	6.7
Total	275	180	65.4	77	28.0	18	6.5

Table 4. Distribution of children of 18 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	37	33.0	46	41.1	29	25.9
Girls	163	63	38.7	55	33.7	45	27.6
Total	275	100	36.4	101	36.7	74	26.9

Table 5. Distribution of children of 18 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	103	92.0	7	6.3	2	1.7
Girls	163	153	93.9	8	4.9	2	1.2
Total	275	256	93.1	15	5.5	4	1.4

Main morbidities observed among children of 18 months age group were, acute respiratory infection (21.5%), fever (16.4%), GIT (15.3 %) and Ear disease 4.4 percent. Fever and ARI observed higher in males (20.5% & 22.3%) in comparison to females (13.5% & 20.9%) whereas GIT was higher in females (17.2%) than males (12.5%) (Table 6).

Table 6. Distribution of children of 18 months age group according to Morbidity

Morbidity	Males N=112		Females N=163		Total N=275	
	No	Percent	No	Percent	No	Percent
N.A.D.	61	54.5	90	55.2	124	45.1
Fever	23	20.5	22	13.5	45	16.4
GIT	14	12.5	28	17.2	42	15.3
ARI	25	22.3	34	20.9	59	21.5
Eye Disease	3	2.7	2	1.2	5	1.8
Ear Disease	3	2.7	9	5.5	12	4.4
Skin Infection	0	0.0	1	0.6	1	0.4

Regarding nutritional deficiency signs, it was observed that discoloration of hair, a sign of protein calorie malnutrition was observed to be high i.e. 57.1% and Marasmus was observed to be 0.4%. Dental caries was 1.5%. It was observed that 96.7% of children belong to category of 'Breast feeding & Top Milk consumption' up to the age of 18 months.

Out of 300 neonates 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 18 months were 278, out of which 3 died (Table 7). Mortality between one year - one & half year age group was 10.8/1000 whereas Mortality up to one & half year age (0-18 months) was 53.3/1000 (Table 8).

Table 7. Distribution of neonates registered earlier & their follow up at the age of 18 months

No. of neonates followed up to age of one year in earlier completed project				
No. of neonates registered	Followed up Up to one year age group	Died up to one year	Non cooperation	Out of Station
300	277	13	4	6
No. of earlier registered neonates followed up to age of one & half year				
No. of neonates registered	Followed up to one & half year age group	Died up to one & half year age group	Non cooperation	Out of Station
300	278*	3	0	0

*One neonate registered came back to village

Table 8. Distribution of neonates according to mortalities rate (N=300)

Types	Age	No.	Per 1000's
Perinatal*	0-7 days	3	10.0/1000
Neonatal*	0-28 days	4	13.3/1000
Post-neonatal* (Infant)	29 days-12 months (1 year)	6	20.0/1000
Mortality between one year-one & half year age group	1 year- 1& half year	3	10.8/1000
Total Mortality up to one & half year age group	0-18 months	16	53.3/1000

*Earlier completed project on Neonate

WORK TO BE CARRIED OUT DURUNG 2013-14

The project is on going and the survey would be carried out to cover remaining earlier registered infants followed up to 5 years of age group children belonging to 28 villages of Salawas CHC of Jodhpur District. Each earlier registered child/ infant will be followed up every six month for clinical examination of nutritional deficiencies, morbidities, mortality, anthropometry, feeding practices and socio-cultural causes for mortality. Analysis and Data entry is under process.

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 reduce the health problems. The Research output of this project will also help in developing package for under 5 children, which will be useful to functionaries of state health department.