Prevalence of 'At-Risk' under five children in field practice area of Rural Health Training Centre (RHTC) Nayla: A Cross-sectional study

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Abstract— Under five mortality if found more in children having any of risk factor. So this community based cross sectional prevalence study was conducted on 400 under vive children to find out the prevalence of 'At Risk' under five children in field practice area of Rural Health Training Centre Nayla (Rajasthan) India. It was observed from this present study that 61.25% under five children were found 'At Risk' in study children of filed practice area of Rural Health Training Centre (RHTC) Nayla, district Jaipur (Rajasthan) India. Among total 'At Risk' under-five children, maximum number of 'At Risk' children were from Rahori village i.e. 22.86%, followed by from Papad (21.63%), Nayla village (19.59%), Dodya Dungar (18.76%) and Raniyawas (17.14%). It shows that there is not much area wise difference in proportion of 'At Risk' under five children.

Keywords: 'At Risk' under-five children, Prevalence.

I. INTRODUCTION

The health of children is of fundamental importance. Without ensuring optimal child growth and development efforts to accelerate economic development significantly will be unsuccessful.[1] Early childhood, that is the first six years constitutes the most crucial period in life, when the foundations are laid for cognitive, social & emotional language, physical & motor development and cumulative lifelong learning.[2]

Under-five children constitute approximately 15% of the country's total population and are the most vulnerable group. These children represent a transition from infancy when the child is protected physically & physiologically by the mother. In these initial years of life, the child need proper health care and any adverse influences during this period may result in severe confines in their development.[3] During this period about 40% of physical growth and 80% of mental development occurs in children.[4]

Currently, 79 countries have an under-five mortality rate above 25.[5] If current trends continue with more than 50 countries falling short of the Sustainable Development Goal (SDG) target on child survival, some 60 million children under five years will die between 2017 and 2030.[6]

Considering the NFHS survey-3 (2005-2006)[7], India has 7.4 million low birth weight babies per year. India is listed in the countries where malnutrition and child mortality is alarmingly high. According to the data released by the Office of the Registrar General of India, indicate that although the mortality rate especially infant and under-five mortality rate is declining over the years, yet there are some states

where these rates are very high. This shows that instead of the progress in health care sector in India, young population especially in the age group 0-6 years continuously lost their lives due to inadequate nutrition and proper care.[7]

This has been done in the field of maternal and child health, from the very beginning but it was the mother who got the main attention. The 'at risk' pregnancy was the chief concern with final aim of a healthy mother. The sub-area of MCH, 'a healthy baby' was neglected. As major causes of deaths in the age group 0-5 years are preventable, so it is therefore necessary to assess the burden of 'at risk' babies.

So this community based cross sectional prevalence study was carried out to find out the prevalence of 'At Risk' under five children of field practice area of RHTC Nayla.

II.   METHODOLOGY

This community based cross sectional prevalence study was conducted in year 2017 under the Department of Community Medicine, SMS Medical College, Jaipur. Study area for this study was selected from the field practice area of RHTC Nayla. Field practice area of RHTC Nayla have 21 villages namly Nayla, Harkishanpura, Meenokabarh, Ramjipura, Bhavpura, Manota, Papad, Aaadigali, Kanariyawala, Aarwari, Dyoda Doongar, Jhol, Raniyawas, Paleda, Balkishanpura, Rahori, Nondpura, Langariyawas, Mathuradaspura, Batwari and Dangarwara Khurd. Out of these 21 villages, 5 villages were selected randomly. These selected villages are Nayla, Manota, Dyoda Doongar, Raniyawas and Rahori.

Sample size was calculated 319 subjects at 95% confidence limit and 5% absolute allowable error assuming prevalence of "At Risk" under-fives 54.7%[8] So for this study 400 under five children were surveyed. Out of 21 villages of RHTC field practice area, 5 villages were selected which is more than 10% representation of whole area. From each of the selected village, 80 under five children were selected for this study.

Formulae for sample size calculation-[9]

$N = Z^2 P (1-P)/D^2$

N= sample size

Z= 1.96 (at 95% confidence level)

P= Prevalence (65.7%)

D= Allowable error (10%)

$$N = (1.96)^2 \times 65.7 \times 35.3/ (5)^2$$

$$N = 346$$

By putting these values the sample size came out to be 319, which was further increased to 400 for this study.

Selection of villages: Out of 21 villages of field practice area of RHTC Nayla, 5 villages namely Nayla, Manota, Dyoda Doongar, Raniyawas and Rahori were selected randomly representing more than 10% of population.

Study population: From each of village 80 eligible under five children were selected randomly, so total study subjects were 400 identified eligible under five children from selected villages of R.H.T.C. field practice area, Jaipur (Rajsthan) India.

For eligibility of under five children, under five year children of either sex with resident of more than one year in that selected area and whose parent/guardian gave written informed consent for the study were included in the study. Among these, the children who could not be contacted despite of two visits were excluded from the study with replacement of another children selected randomly.

After taking approval from Institutional Ethical Committee (EC) survey was carried out. Data regarding desired information for the study were collected with the help of pre-designed semi-structured proforma. 'At Risk' status of child was assessed as per the check list recommended by WHO committee[10] for 'At Risk' underfive children, which is as follows:-

1. Birth wt. <2500Kg
2. Twins,
3. Birth order of five or more,
4. Birth spacing less than two years,
5. Present wt. <70% of standard,
6. Early lactation failure and artificial feeding before six months,
7. Major congenital anomaly,
8. History of death of >two siblings within 12 months of age
9. Death of either or both parents,
10. Children with chronic or recurrent gastroenteritis and/or recurrent respiratory infections (recurrent infections mean >5-6 episodes of infections per year)4 ,
11. Mother working outside for more than eight hours,
12. Delay in giving supplementary feeds i.e. more than 6 months and
13. Mid-arm circumference less than 12.5 cms.

Statistical analysis: Data thus collected were summarized and classified in the form of master chart in MS Excel worksheet. Continuous variables were summarized as mean and standard deviation while Nominal / Categorical variables were summarized as proportion (%).

III. RESULTS

Out of 400 under-five children, majority of under-five children i.e. 134(33.5%) were in the age group of 0-12 months followed by age group of 13-24 months (103 i.e. 25.75 %), 25-36 months (15.75%), 37-48 months (13%) and 49-60 months (12%) aged children. Overall mean age of study population was observed 24.02 months with SD 18.27 months. (Table 1)

It was also observed that out of 400 under-five children, 209(52.25%) were male and 191(47.75%) were female i.e. M: F sex- ratio of study population was 1.09. (Table 1)

This study also observed that out of 400 under-five children, majority were (382 i.e. 95.5%) Hindu followed by Muslim (18 i.e. 4.5%) and regarding caste majority (133 i.e. 33.25%) were SC followed by ST, General and OBC. (Table 1)

This study also shows that out of 400 under-five children, majority belonged to joint family (245 i.e. 61.25%), followed by nuclear (90 i.e. 22.5%), extended (33 i.e. 8.25%) and three generation (32 i.e. 8%). (Table 1)
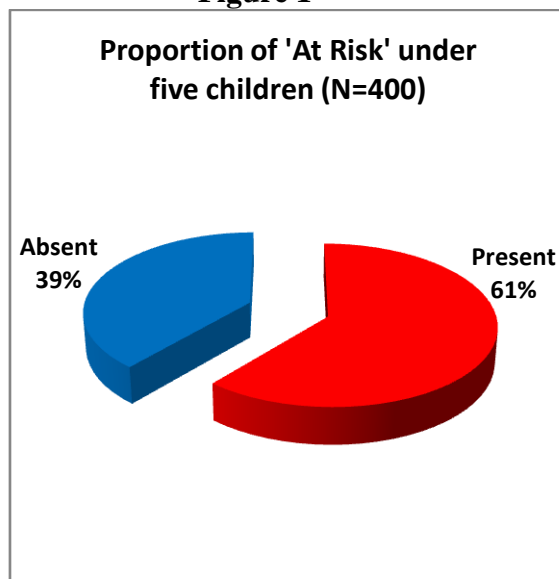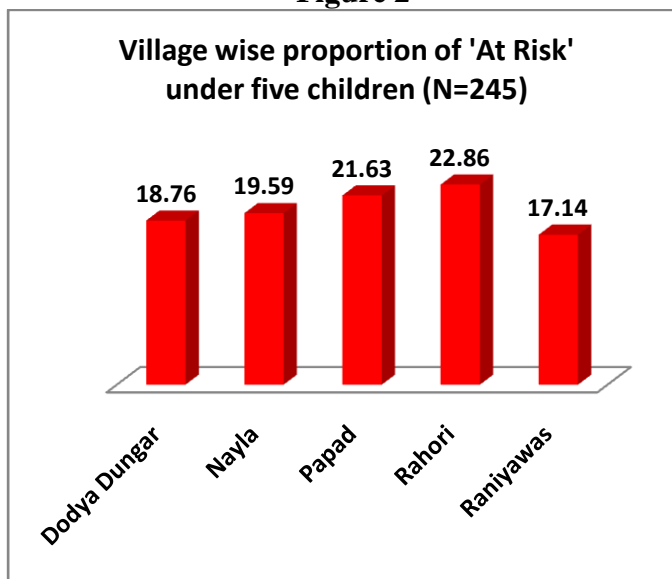
This study also observed that out of 400 under-five children, majority belongs to Class IV (144 i.e. 36%) followed by Class III (125 i.e. 31.25%), Class II (59 i.e. 14.75%), Class V (54 i.e. 13.5%) and Class I (18 i.e. 4.5%). (Table 1)

Table 1
Characteristic of study Population (N=400)

S. No.	Bio-socio-demographic Variables	Frequency	Percentage (%)
1	Age Group (months)		
A	0-12	134	33.5
B	13-24	103	25.75
C	25-36	63	15.75
D	37-48	52	13
E	49-60	48	12
2	Sex	Frequency	Percentage (%)
A	Female	191	47.75
B	Male	209	52.25
3	Religion	Frequency	Percentage (%)
A	Hindu	382	95.5
B	Muslim	18	4.5
4	Caste	Frequency	Percentage (%)
A	GEN	104	26
B	SC	133	33.25
C	ST	111	27.75
D	OBC	52	13
5	Type of family	Frequency	Percentage (%)
A	Nuclear	90	22.5
B	Extended	33	8.25
C	Three generation	32	8
D	Joint	245	61.25
6	Socioeconomic Status	Frequency	Percentage (%)
A	Class I	18	4.5
B	Class II	59	14.75
C	Class III	125	31.25
D	Class IV	144	36
E	Class V	54	13.5

Regarding 'At Risk' under five children, it was observed that out of 400, 245 (61.25%) under-five children were found to have 'At Risk' factor. (Figure 1)

And among total 245 at risk under-five children, maximum number of at risk children were from Rahori village i.e. 22.86%, followed by Papad (21.63%), Nayla (19.59%), Dodya Dungar (18.76%) and Raniyawas (17.14%) respectively. (Figure 2)

Figure 1   Figure 2

Proportion of 'At Risk' under five children (N=400)

Absent 39%

Present 61%

Village wise proportion of 'At Risk' under five children (N=245)

18.76   19.59   21.63   22.86   17.14

Dodya Dungar   Nayla   Papad   Rahori   Raniyawas

IV. DISCUSSION

This present study is aimed to study the 'At Risk' status of "Under Five children" in the field practice area of RHTC Nayla. In the present study 400 under-five children were surveyed from five randomly selected 5 villages of field practice area of RHTC Nayla. Out of these 400 under-five children, 245 i.e. 61.25% were identified as 'at risk' as per the check list adopted for the current study.

Almost similar observations were made by S. Sharma and B.P. Gupta (2005)[8] conducted a study on under-fives in Pachhad Block of Distt. Sirmour, H.P. They found that 'At risk' under five children 65.7% in their study. Swapna Budimelli et al (2015)[11] conducted a cross-sectional study in Guntur and found out 63% of under-five children to be 'at risk'. So all above supra said authors found 'At risk' under five children ranging from 63% to 65.7% in their study, which is well comparable with the observations made by current study.

Similarly Stalin P et al (2013)[12] found out the overall prevalence of 'at risk' under-five children 52.9%. Similar observations were made by Shubhada Sunil Avachat etall (2009),[13] who conducted a cross-sectional study on under-five population in 6 villages of field practice area of RHTC attached to Medical College, Loni Maharashtra, India. They reported prevalence of 'At Risk' 54.7 %of under-five children in their study. Although these studies reported prevalence of 'at risk' under-five children little lower than present study but are comparable.

Furthermore, Mridula d et al (2013)[14] conducted a study to find out the Risk status of 600 children (0-59 months) of ICDS and Non- ICDS urban slums of Varanasi. Out of 600 under-five children of both the study areas, 76.33% children were labeled as 'at risk'.

The reason behind this difference may be due to the difference in study population. In Mridula d et al (2013)[14] study, study population is of urban slums who may have all public health indicators at lower level than that of the population of current study. This explanation was supported with observations made by Naveen Kumar et al (2016)[15] who conducted a study in urban slums of old city Bihar and found high risk under-five children of 76.8%.

V.   CONCLUSION

It can be concluded from this present study that 61% under five children were found 'At Risk' in study children of filed practice area of Rural Health Training Centre (RHTC) Nayla, district Jaipur (Rajasthan) India. Among total 'At Risk' under-five children, maximum number of 'At Risk' children were from Rahori village i.e. 22.86%, followed by from Papad (21.63%), Nayla village (19.59%), Dodya Dungar (18.76%) and Raniya was (17.14%). It shows that there is not much difference of area in proportion of 'At Risk' under five children.

CONFLICT OF INTEREST

None declared till now.

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