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Is Coverage Enough? An Ecological Analysis of Supplementary Nutrition Programme Under ICDS and Child Malnutrition in Wayanad District, Kerala

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Abstract: Kerala's Model of development has always been recognized as one of the global benchmarks in respect to the Human Development indicators. Kerala compared to other states of India has achieved high literacy rates, low infant and mortality rates. Apart from this positive picture there exists intra state disparities within the state which is a matter of great concern. Certain districts in Kerala such as Wayanad, Idukki, Malappuram etc. has larger tribal settlements compared to other districts. It is identified that in such districts the malnutrition indicators such as stunting, wasting and underweight are high. Wayanad is one of the districts which has high percentage of tribal population and the percentage of children stunted, wasted and under weighed are much greater than the state average. The present study is an attempt to assess the supplementary nutrition coverage across all the eight ICDS projects of Wayanad district and to analyze whether the supplementary nutrition coverage has an impact on the stunting, wastage and undernutrition among the child beneficiaries belonging to the age group of three to six years. Severely Acute Malnutrition (SAM), Moderate Acute Malnutrition (MAM) and Moderately Underweight (MUW) are the three indicators used in the study to assess the nutritional status of the children across the eight ICDS projects in Wayanad. Secondary data collected from ICDS District Office, Wayanad was entered and analyzed to see the correlation between the SNP coverage and SAM, MAM and MUW status. The results showed that there exists a correlation between the SNP coverage and the malnutrition indicators which implies that the projects where there is higher percentage of malnutrition indicators such as Sulthan Bathery and Manathavady, there is greater SNP coverage. Even though there is higher SNP coverage in such tribal projects compared to the rural ICDS projects, the prevalence of stunting, wasting and underweight are still high in such projects implying the SNP coverage has definitely contributed in improving the nutritional status of children in Wayanad but in case of tribal children Supplementary Nutrition Coverage alone is not adequate to tackle the chronic nutrition among the children

Keywords: MALNUTRITION, SNP COVERAGE, SAM, MAM, MUW, RURAL, TRIBAL

INTRODUCTION

Despite the rapid progress in the health infrastructure and notable economic growth, prevalence of undernutrition, stunting and wasting remains an alarming issue in India. According to the NFHS 5 data, about 35.5% of children under five are reported to be stunted, about 19.3% remains wasted and about 32% of children are underweight, good proportion of children belong to Severe Acute Malnutrition (SAM) category which poses an increased risk of mortality and morbidity rates. Undernourishment in childhood if not properly tackled will lead to negative impact on the cognitive and motor development of the children. This will in turn lead to

early school dropouts, reduced productivity at their early childhood and more prone to chronic diseases. Three indices namely underweight, stunting and wasting indicates whether the child is nutrient deficient. If the child has low weight for its height the child is said to be wasted. Wasting leads to acute malnutrition which might be due to the recent loss of weight as part of serious illness or reduction in food intake. Stunting refers to when the child has low weight for its height and it will result in the chronic malnutrition which might be due to long term faltering growth even during the birth. Maternal malnutrition and poverty are the major reasons identified for the chronic malnutrition.

Realizing the severity of the situation and the intergenerational threat undernutrition poses, Government of India has initiated certain programs and schemes to eliminate stunting, wasting and underweight among the children. Integrated Child Development Services (ICDS) introduced in 1975 is one of the oldest and long-term programmes with the objective to reduce malnutrition. The core six services provided under the ICDS scheme are Supplementary nutrition, preschool non formal education, nutrition and health education classes, health checkup, immunization and referral services.

SUPPLEMENTARY NUTRITION PROGRAMME UNDER ICDS

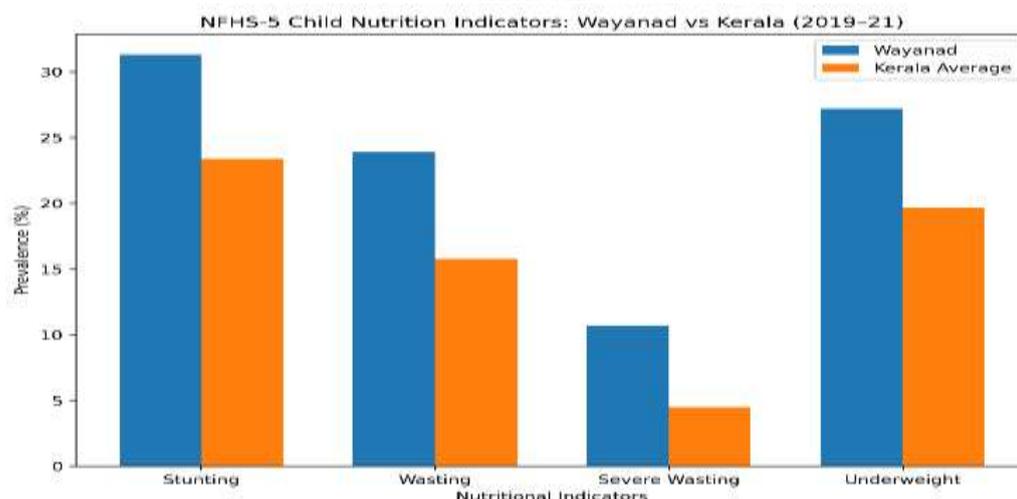
Compared to the other core services provided under ICDS, Supplementary Nutrition Programme (SNP) remains the crucial nutritional component. The main motive of the SNP is to eliminate calorie and protein deficiencies among the children belonging to the age group of 6 months to 6 years. Take Home Ration (THR) with about 500 calories and 12-15gms of protein are provided to children within the age group of 6 months to

3 years. From 3 years the children can register in the Anganwadi's and from Anganwadi's hot cooked meal containing about 500 calories and 12-15 grams of protein is provided to children belonging to the age group of 3 years to 6 years.

ICDS IN WAYANAD, KERALA

The present study has chosen Wayanad district in Kerala as the study area. According to NFHS-4 data, Wayanad, Malappuram, Kannur and Kottayam were recorded with highest percentage of stunted children under the age of five (27.7,26.3,25.3 and 22) percent respectively. Also, the districts such as Idukki (24.2%), Wayanad (23.9%) showed highest percentage of wasted children. More number of underweight children were found in the districts such as Wayanad (27.2%), Thiruvanthapuram (21.6%) and Palakkad (19.1%). Thus, all the three indices namely stunting, wasting and underweight are more prevalent in Wayanad district Kerala. Another major reason is majority of the tribal population of Kerala resides in Wayanad making it only aspirational and high burden district of Kerala

FIGURE 1. COMPARISON OF CHILD NUTRITION INDICATORS BETWEEN KERALA AND WAYANAD



Source: NFHS 5

The above figure shows that the prevalence all four malnutrition indicators namely stunting, wasting, severe wasting and underweight is high in Wayanad district compared to Kerala which shows that even though Kerala is performing better compared to the other states of India, Wayanad a district in Kerala is still lagging behind in terms of child nutrition outcomes

OBJECTIVES OF THE STUDY

The main objective of the study is to examine whether there is any association between the Coverage of SNP among the child beneficiaries belonging to the age group of 3 to 6 years and the persistence of acute and chronic malnutrition across the 8 ICDS projects in Wayanad. There are 4 main ICDS projects in Wayanad namely Kalpetta, Sulthan Bathery, Panmaram and Manathavady in Wayanad district. Apart from this there are 4 additional projects as well. Present study covers the SNP coverage of all the eight ICDS projects and SAM, MAM, MUW status of children for themonth of September 2024 collected from the ICDS office Wayanad. The study also tries to analyze whether there is any interrelationship

exists between various undernutrition forms such as MUW, SAM and MAM.

SIGNIFICANCE AND RESEARCH GAP OF THE STUDY

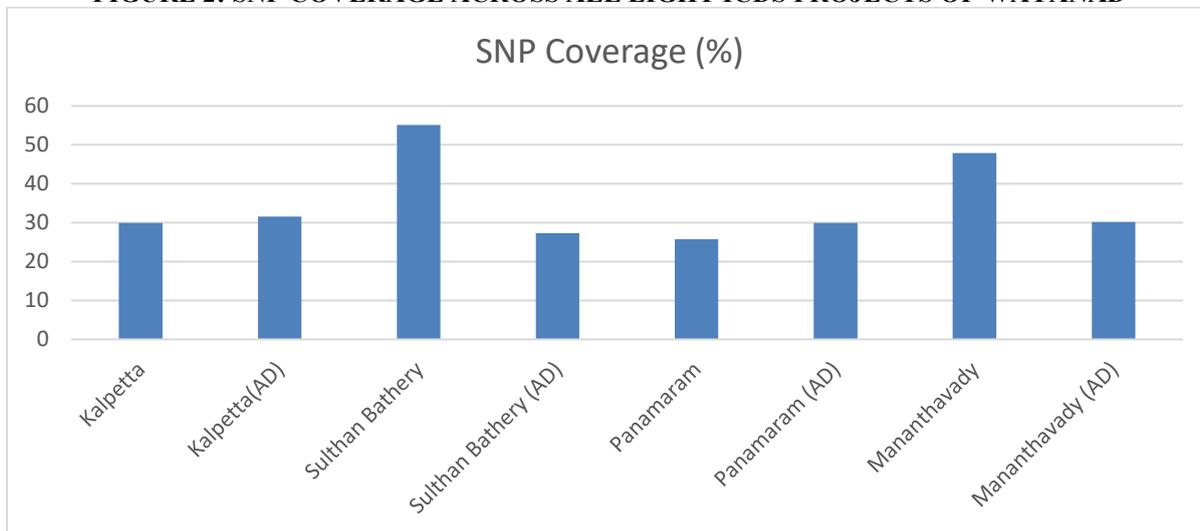
Though there are many existing studies examining the association between the SNP coverage and prevalence of SAM, MUW and MAM, there are only very limited ones in the district setting. The present study tries to understand whether the supplementary nutrition is alone enough to combat the undernutrition in Wayanad district. The study is significant as it studies the child beneficiaries of all the projects both rural and tribal projects of Wayanad district.

METHODOLOGY OF THE STUDY

A cross sectional ecological method was adopted for the study by utilizing the project level data of all eight ICDS projects of Wayanad district. The study uses the secondary data of SNP coverage of the children belonging to 3 to 6 years of age and the SAM, MAM and MUW status of all eight projects for the month of

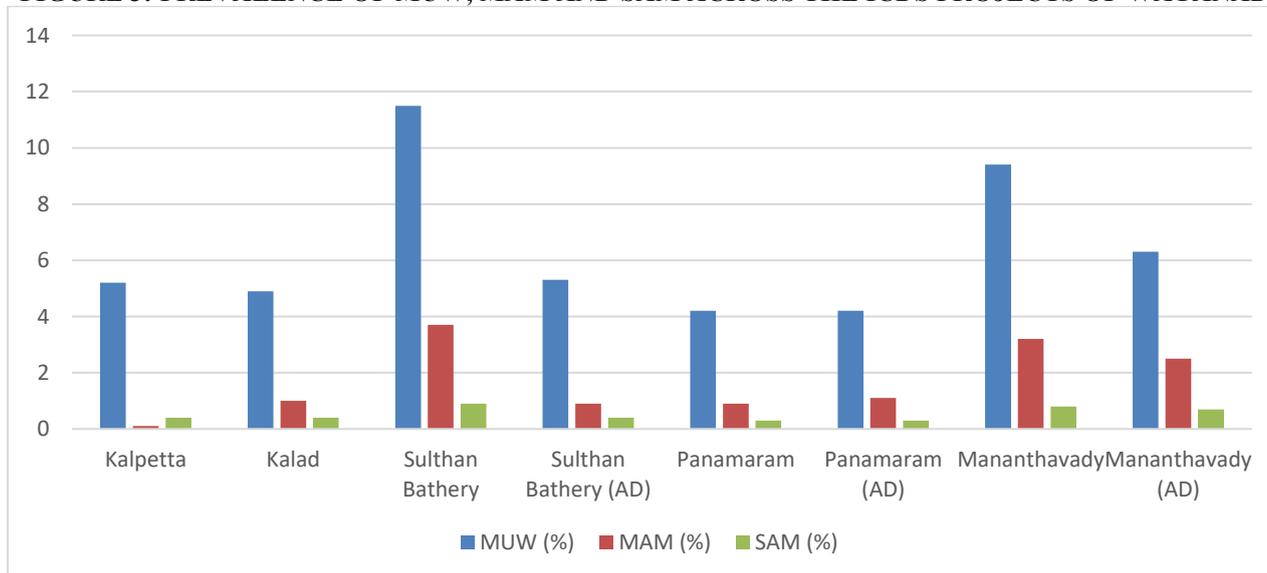
September 2024 obtained from ICDS district office, Wayanad. The SNP coverage is taken as the independent variable and percentages of Moderately Underweight (MUW) prevalence, SAM and MAM are taken as the independent variables

FIGURE 2: SNP COVERAGE ACROSS ALL EIGHT ICDS PROJECTS OF WAYANAD



The above figure depicts the SNP coverage across the eight ICDS projects of Wayanad district. There are four main ICDS projects namely Kalpetta, Sulthan Bathery, Panmaram and Manathavady and there are four additional projects as well. Among the projects, Sulthan Bathery and Manathavady are the projects with higher tribal population and the graph shows that SNP coverage is higher in such areas. ICDS projects such as Kalpetta and Panmaram are tribal projects and as shown in the graph, in such projects SNP coverage is low

FIGURE 3: PREVALENCE OF MUW, MAM AND SAM ACROSS THE ICDS PROJECTS OF WAYANAD



The above graph represents the prevalence of MUW, MAM and SAM across the various ICDS projects. MUW %, MAM% and SAM% indicates the percentage of Moderately Underweight children, Moderately Acute Malnourished and Severely Acute Malnourished children of the Wayanad district. Moderately underweight, Moderate Acute Malnourishment and Severe Acute Malnourishment are the various classifications used to indicate the presence of malnutrition among the children aged 6-59 months by taking the anthropometric measures such as weight and height of the child. In the present study secondary data is obtained for the children aged 3 years to 6 years who are eligible to attend the Anganwadi centers. Among the above three classifications MAM indicates early stage of malnourishment and belong to the lower risk category and such conditions doesn't necessary requires inpatient treatment and can be rectified by giving proper nutrition, improving the quality of living conditions, giving proper education and counselling especially to the mothers of such children regarding the importance of nutrition. Severe Acute Malnutrition can be a life-threatening condition which requires

advanced treatment such as admitting the children in Nutrition Rehabilitation Centers (NRCs). In the above graph, the percentage of MUW is higher than MAM and SAM but still the prevalence of SAM shows there are children under high-risk category especially under the tribal projects of Wayanad

RESULTS

Spearman rank correlation was performed to see if there was any correlation between the SNP coverage of children aged 3 to 6 years across all the eight ICDS projects in Wayanad and the MUW, MAM and SAM status of the children belonging to the same age group.

TABLE 1: SPEARMAN CORRELATION BETWEEN THE SNP COVERAGE AND MUW, MAM AND SAM

VARIABLES	SNP%	MUW%	MAM%	SAM%
SNP COVERAGE%	1.00	0.717	0.807	0.834
MUW%	0.717	1.00	0.645	0.976
MAM%	0.807	0.645	1.00	0.698
SAM%	0.8304	0.976	0.698	1.00

The above results implies that there is strong and statistically significant relationship between the SNP coverage across all the eight ICDS projects with MUW (rs is 0.717 and p value is 0.04),MAM%(rs =0.807,p=0.015) and SAM%(rs=0.834,p=0.010).The positive relation between the SNP and malnutrition indicators should not be interpreted as when SNP coverage increases it will increase malnutrition where as it shows that there is higher SNP coverage in the highly vulnerable tribal projects where MUW%,SAM% and MAM% remains high. This should be treated as a positive outcome where there is targeted increase in the SNP coverage in tribal projects of Wayanad district but still persisting SAM indicates that the other factors such as quality of services delivered, proper utilization of services by the beneficiaries, ensuring food security etc. should also be taken care of.

While we consider the correlation between the malnutrition indicators there is a high positive correlation between the MUW and SAM implies the seriousness of critical comorbidity where there is existence of multiple malnutrition indicators .It highlights that if the child who is moderately underweight remains in an environmental condition where there is poverty,illness,improper intake of diet ,unhygienic sanitation conditions etc. it forces the children in to a more severe undernutrition category such as SAM.This calls for the need of urgent attention towards the children belonging to moderately underweight category so that if these children are availed with proper nutrition and healthier environmental conditions they might not further deteriorate into a severe condition such as SAM.It also implies that a moderate condition in the beginning can gradually lead to a life deteriorating one

FINDINGS AND CONCLUSION

There is higher percentage of SNP coverage in tribal dominated projects such as Sulthan Bathery and Manathavady but malnutrition percentage is still higher in such tribal projects compared to the rural projects.

This implies that SNP coverage is not alone enough to tackle the undernutrition problems such as stunting, wasting and underweight among the child beneficiaries in the Wayanad district. Results of spearman rank correlation highlighted the significant correlation between the SNP coverage and MUW, MAM and SAM across various projects. This is a positive implication that there is targeted increase in the SNP coverage across the socially vulnerable areas but at the same time persisting high rates of SAM, MAM and MUW is a matter of concern. This indicates that apart from SNP, which is the core nutrition component under ICDS there are other socio-economic determinants such as maternal education, maternal literacy which influences the nutrition status of the children. The findings of the study highlight the importance of proper regulation ensuring the quality of the supplied food and to possibly give more attention to outcome-oriented framework rather than coverage centric outcomes.

The study performed an ecological analysis to assess whether there is any association between the SNP coverage and malnutrition indicators across eight ICDS projects of Wayanad district. The results highlighted the moderate significant association between the SNP coverage and SAM implying that the projects with higher malnutrition indicators receives higher SNP coverage compared to the other projects. Also, significant correlation between the malnutrition indicators such as MUW and SAM indicates the child belonging to the MUW category especially in the tribal projects such as Sulthan Bathery and Manathavady has higher risk to fall into a severe life deteriorating category such as SAM.The study concludes that Supplementary Nutrition Programme under ICDS has played a significant role in improving the child nutrition outcomes but SNP alone isn't enough to eliminate more severe forms of malnutrition such as chronic malnutrition. The study highlights the importance of taking other socio-economic factors such as the quality of services delivered, maternal literacy, referral services, immunization services into consideration for better child nutrition indicators

RECOMMENDATIONS

The findings of study emphasized the importance of Supplementary Nutrition Programme (SNP) coverage, one of the core component under Integrated Child Development Services (ICDS) to combat the malnutrition among the child beneficiaries especially under the tribal projects of Wayanad district. Eventhough the SNP coverage was seen higher in such projects, the still persisting levels of SAM, MAM and MUW indicates the prevalence of various categories of malnutrition such as acute and chronic malnutrition. This highlights the importance of enhancing the quality of food delivered, ensuring the timely delivery of services and also suggests the urgent need of taking measures to identify the children belonging to high-risk category such as Severely Acute Malnourished (SAM). The study also recommends the integration of ICDS services with other health initiative programme of the government to bridge the gap in delivering the services. Further research can be done using the individual level data as the present study utilized only secondary data.

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