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A Study of the Impact of COVID-19 on Nutritional Status of 3-5 Year old Children in Dausa District of Rajasthan

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A B S T R A C T

Introduction: The COVID-19 pandemic has caused a global crisis both social and economic. In a country like India where already the nutritional status in young children is poor, Covid-19 can have a more adverse impact on the nutritional status of under 5 children .According The State of Food Security and Nutrition in the World, 2020's report, 14 per cent of India's population is undernourished and 34.7 per cent of the children aged under five in India are stunted. The report also states that 20 per cent of India's children under the age of 5 suffer from wasting (their weight is too low for their height). According to NFHS-4 data children under 5 who are underweight (wt for age):28.1%, children under 5 who are stunted (ht for age):33.8% and children under 5 who are wasted (wt for ht):15.3%.COVID-19 pandemic poses risks on nutritional status of young children and there is concern of increase in child malnutrition, including wasting due to decline in household incomes, lockdown and interruption to health, nutrition services. The present study tried to find out the hidden impact of COVID-19 on children's health and nutrition to find the current status of malnutrition in 3-5 year old children and to compare the current nutritional status of 3-5 year old children with pre- COVID-19 status.***Methodology***: The study was a cross -sectional descriptive study. It was conducted in Dausa district of Rajasthan. From theDistrict Household survey of Dausa, 5 Primary Health Centers were selected randomly and from each of the 5 PHC's, 2Agawadis were randomly selected for the study. In each Aganwadi 10 children between 3-5 years were selected randomly so total of 100 children between the ages of 3- 5 years were chose for the study. The exclusion criteria consisted of those children who had any associated illness and those children whose parents did not give consent for the study were not toincluded in the study.***Findings***: The study found that proportion of underweight children increased from 32% to 41%, the proportion of Stunted increased from 39 to 42 and the proportion of wasted increased from 2% to 7%. ***Conclusion*:** By considering wt for age and ht forage, measurements of malnourished children were found nearly 40% were found below -2 SD. It was also found that, during COVID-19 period the nutritional status of children were deteriorated as compare to the previous year.***Recommendations***: Supply of ration should be increased from higher authority as per the target children. Amount of ration provided should be appropriate as per the age instead of equal quantity ...consider equality. Counsel parents to increase other sources of nutrients by Aaganwadi workers (AWWs.) and AWWs can do house to house check weekly and assess the dietary intake of children.

Keywords: COVID19, Children, Undernutrition, Impact.

INTRODUCTION

Emergence of COVID19 had turned the world upside down and disturbed the determinants of health. The COVID-19 pandemic has caused a global crisis both social and economic. In children, the disease itself was not very dangerus but its collateral damages. In a country like India where already the nutritional status in young children is poor, Covid-19 can have a more adverse impact on the nutritional status of under 5 children. According The State of Food Security and Nutrition in the World, 2020's report, 14 per cent of India's population is undernourished and 34.7 per cent of the children aged under five in India are stunted. The report also states that 20 per cent of India's children under the age of 5 suffer from wasting (their weight is too low for their height) [1]. According to NFHS-4 data children under 5

who are underweight (wt for age):28.1%, children under 5 who are stunted (ht for age):33.8% and children under 5 who are wasted (wt for ht):15.3% [2].

COVID-19 pandemic poses risks on nutritional status of young children and there is concern of increase in child malnutrition, including wasting due to decline in household incomes, lockdown and interruption to health, nutrition services. The present study tried to find out the hidden impact of COVID-19 on children's health and nutrition. General Objectiveof the study is tostudy of the impact of COVID-19 on Nutritional Status of 3-5 year old Children in Dausa District of Rajasthan. Specific Objectiveswere to find the current status of malnutrition in 3-5year old children and to compare the current nutritional status of 3-5year old children with pre- COVID-19 status**.**

Materials and Methods

The study was conducted after institutional ethical committee approval and written informed consent from the parents of the participants and also the ASHA, AWW and the helper at the Anganwadicentres. The study design was cross-sectional study in which both primary data & secondary data were collected. It was conducted in Dausa District of Rajasthan for 3 weeks (28 December 2020 to 16 January 2021). The study setting chosen were 10 Anganwadicentres. The study participants: 3-5 years old children. The Sample size consisted of 100 3-5 year old children who were registered at the Anganwadicentres.

Samplingtechnique

In Dausa district the total number of blocks were 5. The total number of PHCs in Dausa were 49 and the total number of subcenters were 313. Three primary health centers were selected randomly namely, Jopada, Baniyana and Kundal under which six sub-centres were selected and then 10 AWC's were randomly selected. 10 Children of age 3-5 year old were selected randomly from each AWC hence, giving us sample size of 100 children and their anthropometric measurement were taken and plotted on the growth charts.

Data Collection

Both primary and secondary data was collected. For collection of secondary data the list of children with sex & age and records like weight, and height of Januaray 2020 was noted from the official registers maintained at the Anganwadicentres. For the collection of primary data anthropometric data was collected. Children registered at the Anganwadicentres were requested to participate in the anthropometric measurement and after obtaining consent from their parents their height and weight and mid- upper arm circumference was noted. Their height was measured by Stadiometer and weight- was measured by weighing machine. The MUAC was measured by measuring tape and then it was plotted on growth charts.

Data Analysis

The collected data was entered, tabulated and analyzed by using software like Excel and SPSS version 23.

RESULTS

A total of 100 participants aged 3-5 years completed the study. The demographic profile is depicted in Table 1. Out of total 100 participants there were 57 (57%) boys and the remaining 43 (43%) were girls. The total number of participants aged 3 years were 32(32%), participants aged 4 years were 37 (37%) and remaining 31 (31%) participants aged 5 years.

In Table 2 Pre Covid-19 Januaray 2020, 68 participants had normal weight and 32 were underweight. After Covid-19 and lockdown (from March 2020 till June 2020), when weight was measured in Januaray 2021, 59 participants had normal weight and 41 were underweight. Therefore the number of underweight had increased from 32 to 41 and 9 children who were earlier of normal weight had become underweight.

In Table 3, Pre Covid -19 Januaray 2020, 61 participants had normal height for age and 32 were stunted (had low height for age). After Covid-19 and lockdown (from March 2020 till June 2020), when height was measured in Januaray 2021 by stadiometer, it was found that 58 participants had normal height and 42 were stunted. Therefore the number of stunted children had increased from 32 to 41 and many who earlier had normal height for age had become stunted.

In Table 4, Pre Covid -19 Januaray 2020, 98 participants had normal weight for height and only 2 had wastinh (had low weight for h eight). After Covid-19 and lockdown (from March 2020 till June 2020), when weight for height was measured in Januaray 2021, it was found that 93 participants had normal weight for height and 7 had wasting (low weight for height). Therefore the number of children with wasting had increased from 2 to 7 and 5 children who earlier had normal weight for height had become wasted.

Annexure:

Table 1: Socio demographic profile of 3-5 years in Anganwadicentresof Dausa district, Rajasthan

Age	Frequency
3 year	32
4 year	37
5 year	31
Gender	Frequency
Boy	57
Girl	43

Table 2: Weight for age of 3-5 years Pre covid -19 (January 2021) and in January 2021

Weight for age	(Pre –Covid 19) January 2020	January 2021
Normal	68	59
Underweight	32	41

Table 3: Weight for age of 3-5 years Pre covid -19 (January 2021) and in January 2021

Height for age	(Pre –Covid 19) January 2020	January 2021
Normal	62	56
Stunted	38	44

Table 4: Weight for height of 3-5 years Pre covid -19 (January 2021) and in January 2021

Weight for Height	(Pre –Covid 19) January 2020	January 2021
Normal	98	93
Stunted	2	7

DISCUSSION

Investing in Nutrition is the key to secure a country's future. India committed to achieve the Sustainable Development Goal of Zero hunger. Unfotunately COVID19 has increased the risk factor for child malnutrition in India. With the disruption of Anganwadis services and mid-day meal, a large number of children no longer have access to regular, nutrition meals. Rajasthan state had started home delivery of dry ration for children. This study was done to find out the current status of nutrition of children and to compare it with a pre covid year.

The total number of participants aged 3 years were 32(32%), participants aged 4 years were 37 (37%) and remaining 31 (31%) participants aged 5 years. In the present study it was found that the number of underweight had increased from 32 to 41 and 9 children who were earlier of normal weight had become underweight. The number of stunted children had increased from 32 to 41 and many who earlier had normal height for age had become stunted. The number of children with wasting had increased from 2 to 7 and 5 children who earlier had normal weight for height had become wasted. These study findings were similar to the findings of the study done that there is significant differences of nutrition status before and after covid19 [4]. The limitation of study is that it was conducted only in one district of Rajasthan and it can not be universalised, hence scope of future studies. Further studies are required to measure the impact of COVID19 on nutrition and status of children in different contexts. The battle against inequalities and various forms of malnutrition is a public health issue common to all states and countries.

CONCLUSION

By considering wt for age and ht for age, measurements of malnourished children were found nearly 40% were found below -2 SD. It was also found that, during COVID-19 period the nutritional status of children were deteriorated as compare to the previous year. Some Possible reasons could that AWW distributes ration to registered family and the ration is distributed among all the family members instead of registered children only. Supply of food is less than the demand i.e. Number of registered children. Earlier AWW make assure that the registered children consume food but because of the covid-19 this is not possible.

RECOMMENDATIONS

The impact on nutrition of COVID19 is the submerged part of iceberg with potential consequences. Nutrition should be a core component of response policy of a pandemic. Response plan should include public awareness campaigns, education programs. Guidance should be provided to AWW, parents on nutrition and well balanced diets for children, along with poor hygienic practices. Budget should be increased for ingriedients of food.

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