Research Article

Quality assessment of nutritional components of Integrated Child Development Services provided in rural Puducherry

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ABSTRACT

Background: The Integrated Child Development Services (ICDS) is a large program started with the main objective of improving health, nutrition, and development of children. Over a period of 37 years, the system laid foundation for integration of health services to children. The three forms of nutritional benefits are hot cooked meal (HCM), take-home ration (THR), and ready-to-eat food. This made the utilization varies from place to place. To explore more information on the quality of nutrition provided by ICDS program, this community-based study was planned and undertaken in selected rural areas of Puducherry. **Objective:** The objective of this study was to assess the nutritional components of ICDS schemes provided for under-five children in rural Puducherry. **Materials and Methods:** A cross-sectional study was conducted in March, 2015 in 14 villages of Bahour Commune, Puducherry. A total of 27 Anganwadis were selected by simple random method. A checklist was prepared based on the guidelines issued by Government of India. Details regarding child's attendance to the Anganwadi centre during past 2 months, number of days HCM were consumed by the child, THRs issued to the child, quality of food served, and relish of food among children was recorded. Data analysis was done using SPSS version 22.0 computer software. **Results:** The mean days of attendance of the children to the Anganwadi centre during past 1 month were 19 ± 3 days. About 83.7% of children attended more than 15 days in a month. In majority of the Anganwadis (81.5%), food was stored in safe place, free from rodents, and pests. In 77.8% of the Anganwadis, food was served to the children in a clean area, and in 70.4% of Anganwadis, safe drinking water was amenable. Overall, about half of the children (225) relished the food served. **Conclusion:** The quality of supplementary nutrition services in the ICDS centres was good. Attendance proportion of the children to Anganwadi centres was increased when HCM was served.

KEY WORDS: Anganwadi Centres; Supplementary Nutrition; Integrated Child Development Services

INTRODUCTION

In developing countries like India, undernutrition remains an utmost public health distress. The risk of dying from diseases is 8 times more in a moderately malnourished child when compared to a well-nourished child. To prevent or reduce the catastrophe, number of nutrition intervention programs had been introduced, over a period of recent years, in different countries.[1]

India is the second most populous country and the major area of concern is children's health, which needs special attention because of higher vulnerability and special risk they possess. Government of India has implemented several programs along with the WHO and UNICEF to improve the health status of children. The Integrated Child Development Services (ICDS) is a large program started with the main objective of improving health, nutrition, and development of children below 6 years of age.[2]

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Many of the health problems in children can be detected at an early stage by ICDS scheme through regular monitoring. With Anganwadi centre as the focal point for services, Anganwadi worker (AWW) being a part-time worker plays a pivotal role in service deliveries to the beneficiaries. Many studies have shown significant improvement in the nutritional status of children attending ICDS centres when compared to non-ICDS children.[3,4]

Over a period of 37 years, the system laid foundation for integration of health services to children. Supplementary Nutrition Program (SNP) and growth monitoring are the two important high-cost input activities of the ICDS program. The three forms of nutritional benefits are hot cooked meal (HCM), take-home ration (THR), and ready-to-eat food. By facilitating these supplementary feeds, the scheme attempts to bridge the protein-energy deficit between the average dietary intake and recommended dietary allowance. THR is provided for children from the age of 6 months to 3 years, while freshly cooked hot food and a morning snack is provided to children in the age group of 3–6 years who attend the Anganwadi centre daily. Every beneficiary under SNP is to be provided nutritional supplements for 300 days a year. Severely malnourished children are given extra supplements. It is one of the largest outreach child development programs being responsible to alleviate the problems of early childhood, impaired development, and morbidity and mortality in young children which remains a big challenge.[5]

The utilization of ICDS scheme depends on involvement of the community in the program. In the past few years, rural area of Puducherry district witnessed major socioeconomic changes as number of manufacturing industries, educational, and commercial centres have been well established. On the other hand, there is also a change in approach of ICDS activities time-to-time due to the absence of the beneficiaries and due to other works assigned to AWW. This made the utilization vary from place to place. Universalization of ICDS, with quality improvement, can help to break the vicious cycle of malnutrition and poverty. It is an essential step toward the realization of children's fundamental right to nutrition, health, and education.[6]

There were only few studies that highlight the assessment of quality of supplementary nutrition provided for the beneficiaries attending ICDS centres in rural areas of Pondicherry. Due to paucity of such studies and to explore more information on the quality of nutrition provided by ICDS program, this community-based study was planned with the objective to assess the nutritional components of ICDS schemes provided for under-five children in rural Puducherry.

MATERIALS AND METHODS

A cross-sectional study was conducted during March, 2015 in 14 villages of Bahour Commune which is the rural field practice area of Mahatma Gandhi Medical College and Research Institute, Puducherry. Clearance was obtained from the Institutional Human Ethics Committee, The Director Women and Child Health, Directorate of Health and Family Welfare Services, Puducherry, and the Child Development Project Officer of the concerned zone. A total of 27 Anganwadis were selected by simple random method. The Government of India has issued guidelines regarding safety and quality of supplementary nutrition served in the Anganwadis.[7] A checklist was prepared based on the guidelines. The purpose of the study was explained to the AWW in their local language and written consent was obtained before data collection. Details regarding child's attendance to the Anganwadi centre during past 1 month, number of days HCM were served, number of days THRs were issued, quality of food served, and food relish among children was recorded.

Statistical Analysis

Collected data were entered into Microsoft Excel 2007 computer program, and SPSS version 22.0 computer software was used for data analysis. Categorical data were expressed in percentages and numerical data in mean and standard deviation.

RESULTS

A total of 386 children were surveyed. The mean days of attendance of the children to the Anganwadi centre during past 1 month were 19 ± 3 days. Majority of the children (83.7%) attended more than 15 days in a month. Very few (2.8%) attended <5 days during last month. The number of days HCM consumed by the children was 22 days per month and THRs were issued for 5 days.

In majority (81.5%) of the Anganwadis, food was stored in safe place, free from rodents, and pests. In 77.8% of the Anganwadis, food was served to the children in a clean area. In half (55.6%) of the Anganwadis, the foods were subjected to taste by AWW/helpers before serving to children [Figure 1].

Majority of the Anganwadis were provided with safe drinking water (70.4%). More than half of the AWW /helpers had reported that food was touched by hands before serving to children (55.6%). Proper hand washing before serving food was practiced in 44.4% AWCs. Washing fruits which were given to children as morning snack with portable water was practiced only in very few Anganwadi centres [Figure 2].

Among 386 children observed, about half of them (225) had completed their food plate. Only few were reluctant to eat but completed on compulsion and 10 children did not eat. Overall, majority of the children relished the food served [Figure 3].

DISCUSSION

The present study described about the quality of food handling and food serving in the ICDS centres. It was good in majority of the Anganwadi centres with increase in attendance proportion.

Several studies had reported on the utilization of ICDS services among under-five children and their nutritional status. The SNP is one of the key services of the ICDS scheme and is being provided in consonance with the objective of breaking the vicious interaction of undernutrition, impaired development, and morbidity and mortality with a synergetic approach to health and nutritional well-being of the young children which remains a big challenge. Therefore, it is acknowledged as one of the pivotal interventions in addressing child malnutrition in India.

Attendance of the children mainly depends on the functioning of the Anganwadi centres. There was a change in the ICDS program, especially with regard to the SNP before the commencement of the present study. The THRs were discontinued and replaced with a HCM at the centre and rations only for the holidays. This brought an improvement in attendance of the children.

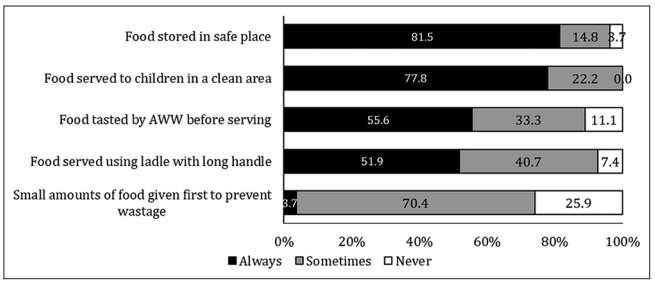

Figure 1: Quality assessment of food served in Anganwadis

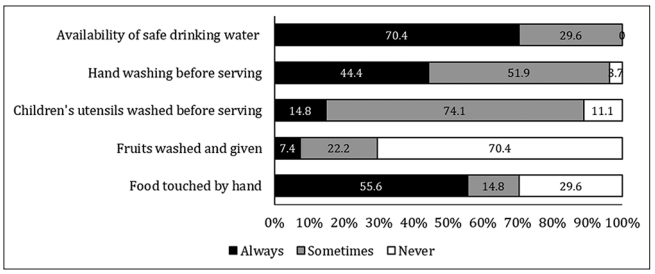

Figure 2: Quality assessment of hygiene practices in Anganwadis

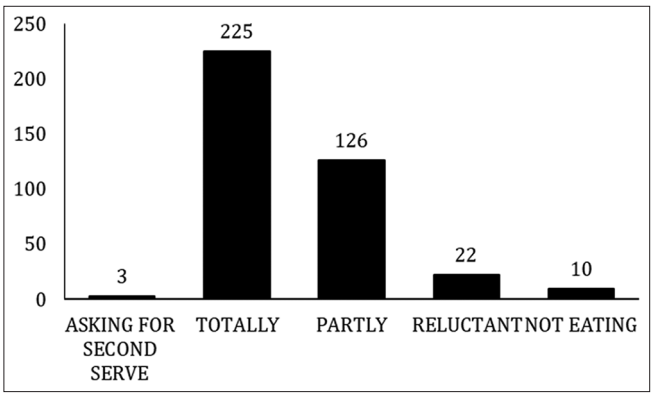

Figure 3: Food relish among children

The Government of India published an evaluation report on ICDS stating that 64% of the study participants received food on an average of 16 days per month which was similar to the present study. Studies from several states had reported about the low quality of food served in Anganwadis.[8] The National Institute of Public Cooperation and Child Development stated in its report that 86.23% of AWCs reported the acceptability of supplementary nutrition by ICDS beneficiaries. About 84.09% AWCs are distributing required quantity of supplementary nutrition as envisaged in ICDS guidelines. About 78.3% of AWCs reported that there was no interruption in distribution of supplementary nutrition to beneficiaries during the last 6 months. The main reason of interruption has been reported as the shortage of supply. Transportation of food and lack of funds were reported as major cause for disruption of supplementary nutrition. Utensils for serving of supplementary nutrition were adequately available in about 81.36% of Anganwadi centres.[9]

The present study showed that the attendance percent of the children when HCM is served when compared to when THR was supplied. This shows that their preference toward cooked meal. Gurukarthick *et al*. conducted a study on Status of Growth Monitoring in Anganwadi Centres of a Primary Health Centre in Puducherry in 2012. In their study, few AWWs reported that mothers preferred cooked food being given to the children over the supply of nutritious powder or THRs. This was due to the poor quality of rations which was often consumed by the adult family members or, even worse, had to be given to livestock as feed.[10] Similar results were shown in the study done by Vinnarasan,[11] since THRs were replaced with a HCM during the present study, no such negative comments were reported by the AWW. This made a positive approach toward the current SNP (HCM).

Quality assessment of the Anganwadi centres showed that in majority of the Anganwadis food was stored in safe place, free from rodents, pests, and served to the children in a clean area and had safe drinking water. This result was similar to the report given by National Institute of Public Cooperation and Child Development, which shown quality of the supplementary nutrition was good in 86.7% of the Anganwadis.

As per guidelines, fruits given as morning snacks should be washed with water, whereas in the present study, very few Anganwadis practiced this as predominantly bananas were given. However, it was observed that often the stalk of the banana was missing, exposing the inner flesh.

Gupta *et al*. had commented in a review regarding the article "37 years journey of ICDS scheme" stating that though there had been increase in ICDS blocks, many were not functioning optimally. Hence, there should be continuous supply of supplementary nutrition and their quality should be addressed.[12]

Limitations

The quality assessment was done in single time. Hence, it cannot predict the overall quality of supplements throughout the year. Due to time constraints, in-depth discussion with the attendants of the study participants was not made.

CONCLUSION

The quality of supplementary nutrition services in the ICDS centres was good. Attendance proportion of the children to Anganwadi centres had increased when HCM was served. Further studies are needed to determine the nutritional status of the children and to explore the underlying cause for absenteeism of the remaining of the children.

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Anganwadi workers.

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