

# Implementation of PM Poshan Yojana at Schools in Rural Industrial Area of Vadodara: An Observational Study

SHWETA PATEL<sup>1</sup>, UMA IYER<sup>2</sup>, SWATI DHURUV<sup>\*3</sup> AND SHRUTI KANTAWALA<sup>1</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Professor and <sup>3</sup>Associate Professor

Department of Foods and Nutrition, Faculty of Family and Community Sciences

The Maharaja Sayajirao University of Baroda, Vadodara (Gujarat) India

\*Corresponding Author

## ABSTRACT

PM Poshan Yojana is a safety-net program that serves hot cooked meals to children in Government primary schools to improve their nutritional status and educational achievements. Effective implementation of the program guidelines is crucial to achieving positive outcomes. This study was conducted to document the school-level implementation of the PM Poshan Yojana in Government primary schools in Rural Vadodara. Spot observations of implementation of the program were conducted once a month in randomly selected 6 schools for a period of six months. Results showed that drinking water facility was reported in 83.3% observations. Only 33.3% observations reported hand-washing with soap before meals, with a lack of teacher supervision and dedicated hand-washing time. Students' involvement in monitoring hand-washing was reported in 16.7% of observations that ensured systematic hand-washing in school. The meals were prepared at an NGO run centralised kitchen and sent to the schools. These meals were hygienically packed and hot when received at schools. The availability of staff to serve meals at school and provision of serving utensils was recorded in all observations. However, gaps in the cleanliness of the dining area and inconsistency in serving sizes were identified as gaps. This suggests a need for dedicated hand-washing slots and involvement of students' peer groups to monitor program activities such as hand-washing. The results also emphasized on the need for active supervision of meal service.

**Keywords:** PM Poshan Yojana, Mid Day Meal, WASH

## INTRODUCTION

Optimal health and nutrition during childhood are crucial, serving as the foundation for physiological growth and cognitive development, contributing to lifelong wellbeing and socioeconomic productivity (MoHFW, 2019). The school feeding programs serve as social safety nets that address classroom hunger and support a child's future potential. These programs not only address nutritional gaps among growing age groups but also break the cycle of poverty (Chakrabarti *et al.*, 2021).

In India, children aged 5 to 9 years and adolescents aged 10 to 19 years constitute approximately 21.8% and 25.3% of the total population, respectively (Ministry of Health and Family Welfare, 2019). The Pradhan Mantri

Poshan Shakti Nirman (PM-POSHAN) scheme serves as a key social safety net program in India where a high prevalence of malnutrition is reported, with nearly 22% of children aged 5 to 9 years being stunted, and 23% thin, and 24% of adolescents aged 10 to 19 years suffering from thinness (Ministry of Health and Family Welfare, 2019). Food supplementation is provided in schools under this program to bridge the dietary gaps in calorie and protein intake among school going children and adolescents. It also acts as a medium for social equity and has been shown to significantly increase school enrolment and retention rates among marginalized communities (Afridi, 2011 and Kabear, 2024).

Although the program is found to contribute to children's nutritional status, educational, and social well-

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being, implementation gaps related to hygiene and inconsistent serving have been reported in research studies. Observational studies covering aspects such as serving sizes, WASH practices, sanitation facilities at schools, teachers' involvement as well as waste management can provide a complete picture of implementation of the program at school level. These factors often influence the nutritional outcome of the program as they affect service utilisation, nutrient absorption as well as infectious illnesses among children.

In view of this, present study was conducted to examine the implementation of PM Poshan Yojana in Government Primary schools of Rural Vadodara through spot observations.

## METHODOLOGY

This study was conducted in rural areas in the vicinity of Vadodara that were surrounded by petrochemical industries. There were 47 Government-run primary schools in the study area. A total of 30 schools had both primary and upper primary sections, out of which 6 schools were randomly selected for conducting a cross-sectional observational study on the PM Poshan Yojana. These schools were enrolled in the study after obtaining the necessary permissions.

A semi-structured observation checklist made keeping the programme guidelines as reference, was used for spot observations. Observational data on the implementation of the program were collected for a period of 6 months in the selected schools. One unannounced visit was made to each of the selected school every month and a total of 36 observations were carried out during the study period. The study focused on various aspects of the PM Poshan Yojana, focusing on water, sanitation, hygiene, dining arrangements, meal service, and teacher's involvement.

## RESULTS AND DISCUSSION

The Mid Day Meals under PM Poshan Yojana were prepared at a Centralised Kitchen run by an NGO under the Public Private Partnership model in the study area. Located in the urban area of Vadodara, this facility supplied hot-cooked meals under this scheme, to Government Primary Schools in selected Rural Areas on a daily basis. The meals were sent in stainless steel containers in insulated vans and arrived at the schools

hot, as reported in all the observations.

The subsequent sections discuss findings regarding WASH (Water, Sanitation, and Hygiene) practices, dining arrangements, meal distribution and supervision as well as the management of plate waste and surplus food at school level.

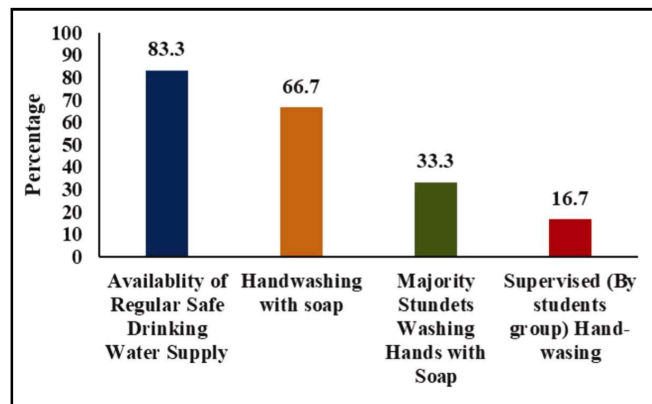
### Drinking Water and Hand-Washing:

The effectiveness of a food supplementation program depends on factors like sanitation and hygiene, as they are strong determinants of health in populations. The outcomes of the programme can be negatively affected if safe drinking water and adequate hygiene facilities are not available at the schools. The operational guidelines of PM Poshan Yojana stipulate the availability of separate drinking water and hand-washing facilities in schools. The guidelines also suggest that dedicated, hand-washing intervals within the daily school schedule should be given so that all students wash their hands with soap before and after meals under the supervision of teachers (Ministry of Education, 2022).

The observations on the availability of safe drinking water and hygiene facilities indicated a regular supply in the majority of schools (83.3%). In 66.3% of observations, the availability of soap and its use for hand-washing by children were reported. However, in only 33.3% of observations, the majority of children were seen using soap for hand-washing before consuming the mid-day meal (Fig. 1). Suboptimal hand-washing practices among school children before eating Mid Day Meal have also been reported in a study conducted in Urban Vadodara by Kantawala (2015). Studies conducted in Chennai (Tamilarasi *et al.*, 2016) and Firozabad (Srivastava and Mehta, 2018) have also reported that nearly one-third of children washed their hands with soap before consuming food. This shows that there is a need to strengthen hand-washing guidelines in schools.

While national guidelines recommend that hand-washing should be supervised, it was not commonly supervised in schools, with no observations reporting teachers supervising hand-washing. Tidwell *et al.* (2020), have shown that a teacher-led hand-washing program was successful in promoting hand-washing with soap not only at school but at home, among students. It was reported in 16.7% observations (1 schools) that supervision of hand-washing was done by the members of the "Bal Sansad," a student group. The involvement of these student groups, was found to be effective in

ensuring that children washed their hands with soap before meals in these observations. Implementation of such peer-led strategies in all the schools may help addressing the problem of poor adherence to the hand-washing guidelines under PM Poshan Yojana.



**Fig. 1 : Observations regarding Water, Sanitation and Hygiene at Schools**

The program guidelines further suggest that a dedicated time for hand-washing has to be allotted (Ministry of Education, 2022). Results of the observations showed that while children were prompted to wash their hands when the bell rang for break, no dedicated time was allocated for this activity. The absence of a dedicated time slot for hand-washing before serving meals led children rushing to the hand-washing stations, and many children skipped hand-washing before eating MDM.

**Sitting Arrangements and Cleanliness of Serving Area:**

Observations on sitting arrangements and cleanliness showed that a separate dining area was used for serving MDM in 27.8% of observations. The meals were served in playgrounds (72.2%) and corridors (55.6%). Nearly one-third (30.6%) of observations reported serving mid-

day meals in shaded areas with tiled flooring (Table 1). Similar observations on the usage of such different places for serving MDM are reported in many studies conducted in different parts of India (Kantawala, 2015; Mansoor and Rawoof, 2018; Arumugam, 2016). The program guidelines also suggest that such arrangements can be made to ensure sufficient space for the students to sit and eat. However, the meal consumption areas, whether dedicated dining halls, verandas, or classrooms, must be spacious, well-ventilated, and secured with wire-mesh windows, and require daily cleaning before school hours (Ministry of Human Resource Development, 2015; Ministry of Education, 2022).

It was observed in that all children ate while seated on the floor. This made it crucial that the cleaning of floor is done before and after serving the meals. It was observed in all visits that the floor was swept after meals, but cleaning immediately before serving was only observed in 25% of observations. Mopping immediately before serving meals was not a common practice, which resulted in dust being present in the dining areas in most observations (83.3%) (Table 1). The discrepancy between post-meal sweeping (observed in 100% of cases) and immediate pre-meal cleaning (observed in only 25%) is a significant concern highlighted in several studies (Sembiah, *et al.*, 2019; Ahmed and Tripathi, 2025), which note that cleaning lapses often lead to dust in serving areas. Thus, usage of other areas when a dedicated dining area is not present is allowed by the guidelines permit but hygiene standards must be ensured.

**Serving of Meals:**

MDM helpers were responsible for serving meals in all schools. Additionally, students were involved in serving in 69.5% of observations. All schools had serving utensils that were cleaned after serving and kept in the school, but in one-third of observations, helpers took ladles

Observation	n (%)
Separate dedicated dining area for MDM	10 (27.8)
MDM served in Open space/ Playground	26 (72.2)
MDM served in school corridors	20 (55.6)
Shaded and tiled sitting area	11 (30.6)
Well-lit sitting area used for MDM serving	36 (100)
Presence of Dust in the area used for MDM serving	30 (83.3)
Presence of Files in the area used for MDM serving	19 (52.8)
Cleaning of serving area before serving MDM	9 (25)
Cleaning of serving area after MDM serving	36 (100)

**Table 2 : Observations of Meal Session (N=36)**

Observation	n (%)
MDM Helpers serving meals	36 (100)
Children involved in serving of meals	25 (69.5)
Serving utensils (spoons/ ladles) available at School	36 (100)
Serving utensils cleaned at helper's home	12 (33.3)
Serving of hot meals	36 (100)
Meals taken out in other vessels for serving	18 (50)
Plates provided to children from school	12 (33.3)
Children brought plates for eating MDM from their home	24 (66.7)
Presence of teachers at the time of serving meals	35 (97.2)
Presence of teachers throughout the meal session	7 (19.5)
Teachers tasting MDM before serving to the children	6 (16.7)
Attendance of students consuming MDM taken at the time of serving meals	0 (0)

home for cleaning. A lack of uniform serving utensil sizes was noted, which could affect portion sizes. In none of the observations, consistency in serving size for children of primary and upper primary classes was observed (Table 2). Similar findings have been reported by Kulkarni *et al.* (2025). This indicates that despite the coverage of the program, poor compliance to the nutrient norms may hinder the progress of the program.

In 50% of observations, food was transferred to other utensils for serving, increasing the risk of contamination. Meals were served hot and on-demand in all schools. Plates for eating were provided by the school in 33.3% of cases, while children brought their own plates from home in 66.7% of observations.

#### **Supervision of MDM Serving:**

Teachers were present during meal service in most visits (97.2%). Though, they were observed to be present throughout the entire meal in only 19.5% of observations. In 16.7% of observations, teachers tasted the meals before they were served to the children. Recording of attendance of beneficiaries eating on the day of observation was not reported at the time of meal service in any of the visits. However, the attendance children present on the school day was recorded in the beginning of the classes (Table 2).

Although the guidelines mandate that teachers should supervise meal service, taste food for safety, and monitor students' hand-hygiene to ensure proper program implementation, studies suggest that active participation is often limited because many teachers perceive these administrative duties as an additional burden other than their primary teaching responsibilities (Patel and Pancholi, 2019; Rani and Sharma, 2017). However, it is important

to sensitise and motivate teachers to continue contributing to the program to ensure effective implementation.

#### **Waste Management:**

Bins for collecting plate waste were available in all schools and were used by the children. However, in some observations (16.7%), children were observed discarding waste in open areas near the schools. Leftover food was given to shepherds for cattle feeding in 80.6% of observations. In 20% of observations, leftover food that was still good for consumption was given to villagers, while in 19.5% of observations, the leftovers were discarded.

#### **Conclusion:**

The results of this study showed that meals prepared at centralised kitchen reached the schools hygienically and were served hot to the children. Despite the services of PM Poshan Yojana physically reaching the students, the implementation gaps, specifically in pre-meal hygiene, as well as inconsistency in serving sizes and supervision, need to be focused on. Strategies to ensure the correct serving size for children studying in primary and upper primary classes to meet nutrient norms of the program need to be adopted. As poor WASH conditions are known to limit nutrient absorption due to frequent infections, strengthening the role of students' peer groups (such as "Bal Sansad", as observed in the study) may help improve the implementation of WASH guidelines. Involvement of students in various activities of the program under the guidance of teachers, may help generate a sense of ownership among students, in turn improving service utilisation.

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