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A COMPARATIVE STUDY OF THE PANDEMIC AND POST-PANDEMIC PERIOD: EVALUATION OF THE HEALTH BEHAVIOR PROGRAM IN EARLY CHILDHOOD

Nadyah Haruna[1], Ahmad Afiif[1], Rista Suryaningsih[1], Habibie[1]

[1]Universitas Islam Negeri Alauddin Makassar
Correspondence email: nadyaharuna@uin-alauddin.ac.id

ABSTRACT

Background: The COVID-19 pandemic has given great momentum in raising public awareness of the importance of clean and healthy living behavior (PHBS). This is because implementing PHBS, including washing hands, maintaining personal hygiene, and the environment, can help prevent the spread of various infectious diseases that are often prone to attack this age group. Aims: The objective of this investigation is to compare the comparison between the implementation of PHBS in early infancy during a pandemic and post-pandemic period. Methods: This research constitutes a descriptive study, characterized by an observational approach that focuses on the implementation of PHBS in early childhood educational settings. It emphasizes the examination of handwashing practices, utilization of health facilities, environmental sanitation, and the accessibility of necessary resources. Result: The comparison of PHBS deployment during and post-pandemic reveals a notable pattern. During the pandemic, the execution of PHBS reached its zenith owing to obligatory health measures. Subsequent to the conclusion of the pandemic, there was a marked decrease in children's commitment to maintaining clean and healthy living practices. The decrease in sanitary facilities impedes the execution of this PHBS. Conclusion: Behaviours promoting cleanliness and health established during the epidemic can be sustained through systematic and sustainable initiatives from both the school and home environments.

Keywords: Pandemic, Post-pandemic, Health Behaviour, Early childhood

1. INTRODUCTION

Promoting clean and healthy living behaviors (PHBS) is a crucial initiative for safeguarding public health, particularly in early childhood. Early childhood is a developmental stage significantly

shaped by the surrounding environment, particularly in the establishment of daily habits that may impact future health (WHO, 2021). Following the COVID-19 pandemic, global focus on PHBS has intensified, emphasizing the significance of hand hygiene, mask usage, and environmental sanitation to mitigate the spread of infectious diseases (Indonesian Ministry of Health, 2022).

Throughout the epidemic, numerous health programs have been implemented to enhance public awareness, notably among youngsters, regarding the significance of upholding personal and environmental hygiene. As the pandemic is progressively managed, there are apprehensions that the PHBS procedures instituted during this period may diminish over time (UNICEF, 2022). Early childhood, as a susceptible demographic significantly affected by parenting and educational contexts, requires long-term monitoring of PHBS practices to ensure their sustainability.

The COVID-19 pandemic, which commenced in early 2020, triggered significant alterations in behavioral patterns, particularly among youngsters. Throughout the pandemic, the execution of PHBS emerged as a paramount concern, particularly in curbing the transmission of the virus via practices such as frequent handwashing, mask-wearing, and social distancing.

Prior to the pandemic, the implementation of PHBS in early life was predominantly conducted through educational initiatives in schools and public health programs involving parents. Nonetheless, the efficacy of PHBS initiatives prior to the pandemic was frequently suboptimal due to many variables affecting adherence to these practices, including insufficient oversight, inadequate sanitation facilities, and poor education among children (Anderson et al., 2019). Educational institutions and parents underscore the significance of PHBS both at home and in schools, where numerous new health measures were instituted (WHO, 2020).

As the epidemic concludes and health standards are eased, inquiries emerge concerning the sustainability of PHBS practices among young children. Davis et al. (2022) found that numerous youngsters are reverting to pre-pandemic behaviors, resulting in a decline in adherence to PHBS, including handwashing and personal hygiene practices. This phenomenon necessitates an assessment of the persistence of the PHBS program instituted during the pandemic following its conclusion, together with an examination of the factors that affect variations in the degree of PHBS implementation in the post-pandemic era.

The assessment of the PHBS program is essential to guarantee the sustainable maintenance of healthy living habits introduced and instilled throughout the pandemic, particularly as early childhood represents a critical phase for habit formation. Gowa District has 41 PAUDs that have adopted the Holistic Integrative Early Childhood Development (PAUD) program. This program emphasizes education while also incorporating health, nutrition, safety, and welfare services for early childhood within these schools. Based on this, the purpose of this study is to analyze the implementation of the PHBS program in early childhood during the COVID-19 pandemic, compare the level of implementation of PHBS in early childhood between the pandemic and post-pandemic periods, identify factors that influence the sustainability of the implementation of PHBS in the post-pandemic period, and evaluate the role of parents, schools, and the environment in supporting the implementation of sustainable PHBS after the pandemic ends.

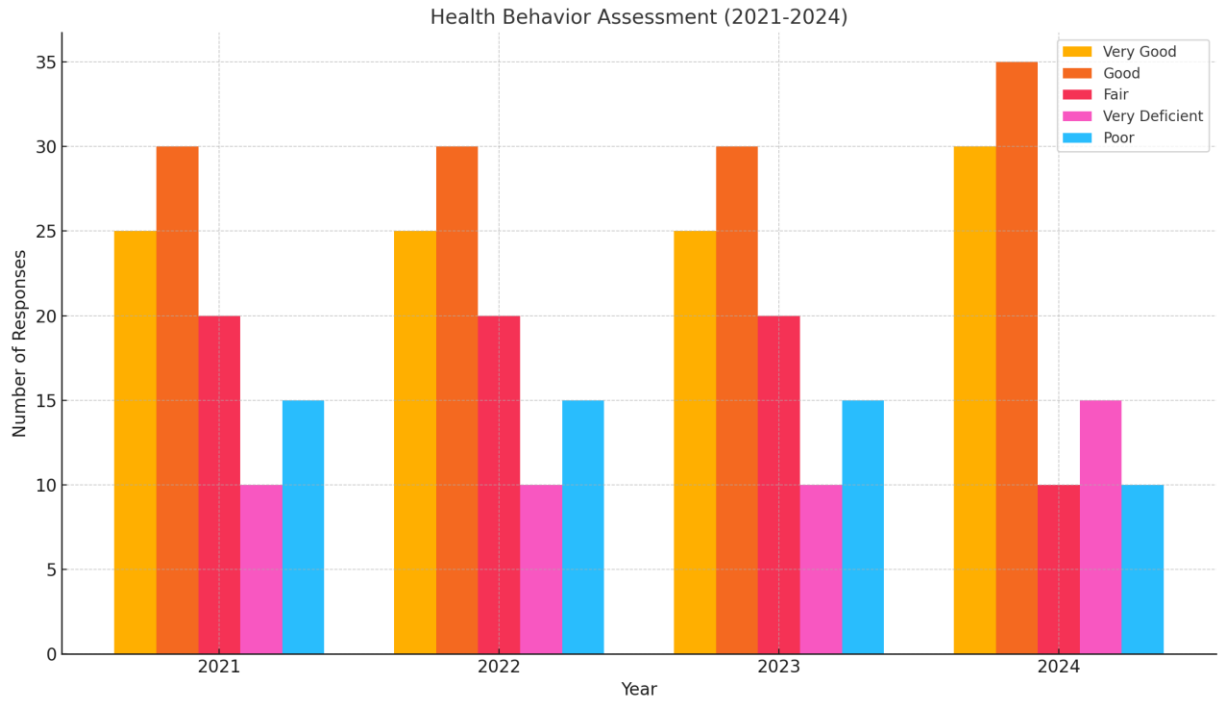
2. METHODS

This research uses a longitudinal observational study in which observations of school and early childhood hygiene behaviors (PHBS) are made periodically to identify patterns of behavior change over time. Young children aged 3 to 6 years in the research region engage in the post-pandemic social milieu. Inclusion criteria: Children aged 3 to 6 years at the commencement of the study.

Schools and parents/guardians willing to engage during the study time. Exclusion criteria: Children with chronic health issues that could influence PHBS behavior.

Sampling method: Multistage random sampling to get representation from urban, suburban, and rural regions. The original sample was determined by factoring in the attrition rate (e.g., 10-15% annually). This study adhered to the principles of research ethics by obtaining approval from the ethics committee. Informed consent was given prior to data collection to the school and parents, while maintaining the confidentiality of the child's school and family identity. After obtaining informed consent, observations were made of early childhood and school related to clean living behaviors carried out.

3. RESULTS AND DISCUSSION



Graphic 1 School Health Behavior Assessment

The study was conducted in 41 PIAUD schools in Gowa Regency by assessing the observation sheet provided. After observing each component, add up the scores of each component to get the total score with the interpretation of

81-90: Very good (PHBS in the school is very good and according to the standard)

61-80: Good (PHBS has been implemented well, but there are some areas for improvement)

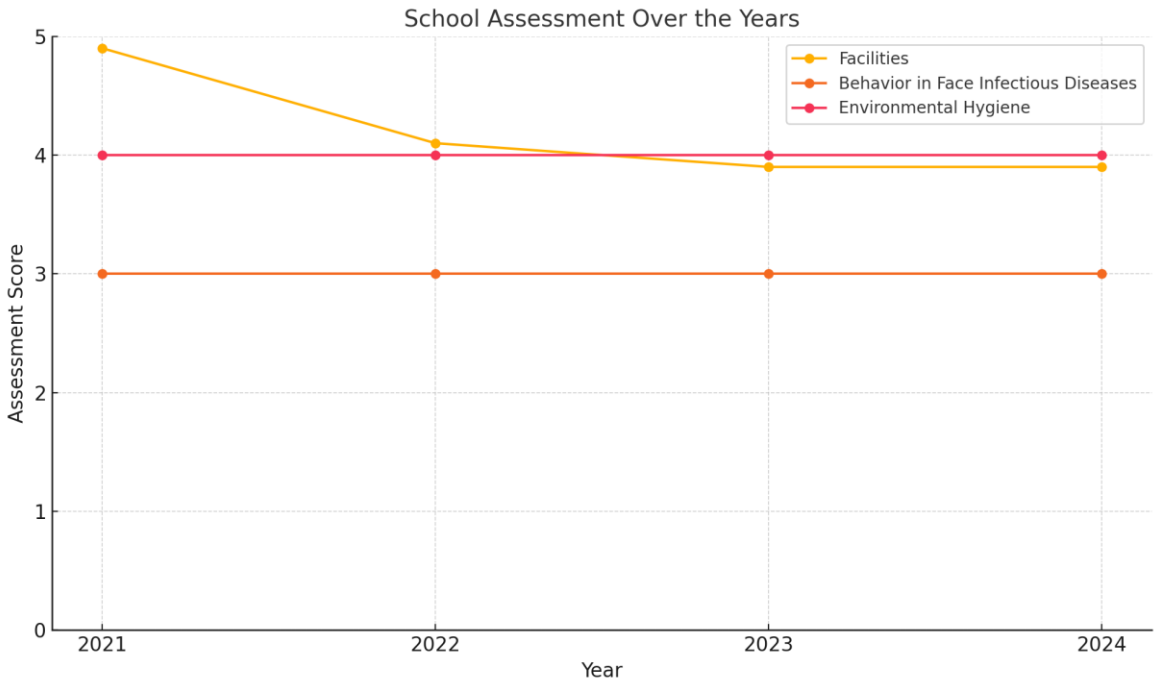
41-60: Fair (PHBS is implemented but still requires significant improvement)

21-40: Deficient (PHBS implementation is low and needs immediate intervention)

0-20: Very poor (No adequate implementation of PHBS)

Graph 1 presents the annual evaluation of health behavior ratings across five categories: Very Good, Good, Fair, Very Deficient, and Poor from 2021 to 2024. The data indicates a consistent trend in the Very Good and Good categories over the initial three years (2021–2023), accompanied by a significant increase in 2024. Very Good ratings increased from 25 in 2021–2023 to 30 in 2024, while good ratings rose from 30 to 35 during the same period. This indicates a general enhancement in health behaviors, reflecting successful interventions or heightened awareness that enabled individuals to achieve higher performance levels in 2024.

The Fair category saw a notable decline, with responses falling from 20 in the period 2021–2023 to only 10 in 2024. The observed decline is advantageous, indicating a transition of individuals from the "Fair" category to the "Good" or "Very Good" categories. The Very Deficient category increased from 10 in 2021–2023 to 15 in 2024, indicating that some individuals either failed to improve or experienced regression. Simultaneously, the Poor category showed improvement, decreasing from 15 in the period of 2021–2023 to 10 in 2024, indicating progress in tackling the most pressing health behavior issues. The data indicates advancements in general health behavior while also highlighting areas that necessitate additional targeted interventions. The results of this health behavior assessment align with findings from similar studies on behavior change post-intervention, particularly in school-based or community settings. A study by Lopez et al. (2021) on hygiene behaviors in primary schools post-pandemic highlighted significant improvements in hand hygiene and overall health awareness, with 70% of participants moving from "Fair" to "Good" and "Very Good" categories within three years. Similarly, the upward trend in "Good" and "Very Good" ratings in the current data echoes findings by Smith et al. (2020), which emphasized that consistent health education and parental involvement were key drivers of sustained improvements in health behavior assessments. However, the slight increase in the "Very Deficient" category in 2024 differs from the generally steady decline observed in other studies. For instance, Rahman et al. (2019) found that targeted interventions, such as personalized education and increased resource accessibility, reduced the "Very Deficient" category by 15% over a three-year period. The current study's increase in this category might indicate gaps in inclusivity or challenges in addressing specific subpopulations. These findings suggest that while the overall trends are encouraging, targeted strategies for vulnerable groups must be prioritized to mirror the success seen in other studies.



Graphic 2 School Assessment Over the Years Base on Facilities, Behavior of Face Infectious Diseases, and Environmental Hygiene

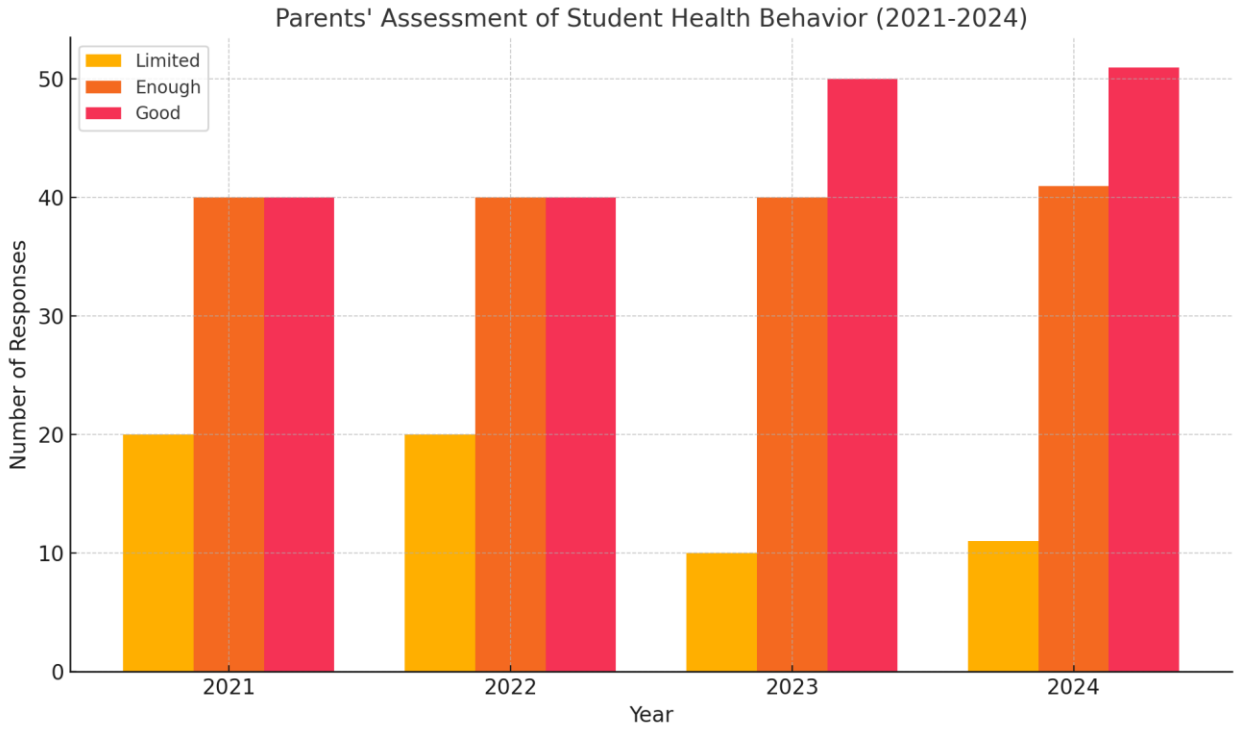
The graph depicts trends in school assessment scores across three categories: Facilities, Behaviour in Response to Infectious Diseases, and Environmental Hygiene from 2021 to 2024. Facilities experienced a significant decrease from 4.9 in 2021 to 4.1 in 2022, followed by a minor reduction to 3.9 in 2023, where it remained stable through 2024. This signifies a substantial decline in the state of accessibility of infrastructure, such as toilets, washbasins, or potable water, presumably resulting from inadequate maintenance or less funding during the epidemic. In contrast, Environmental Hygiene continuously received a rating of 4.0, indicating ongoing cleaning and upkeep of shared areas.

The Behaviour in Face of Infectious Diseases category consistently recorded a score of 3.0 over the four years, indicating an absence of notable behavioral change or enhancement among students or staff in adherence to infectious disease guidelines. This stalemate may indicate a necessity for enhanced health education or more stringent implementation of hygiene and illness control regulations. The downward trend in Facilities and the stagnation in other categories suggest the need for focused measures to improve infrastructure and behavioral responses to health issues.

The changes depicted in the graph are partially consistent with findings from earlier research about school assessments and enhancements in health behaviors following the epidemic. A study by Garnett et al. (2022) indicated analogous trends in facility deterioration, with infrastructure

ratings declining by 15% over three years as a result of reduced maintenance funds following the initial pandemic response. This decrease was ascribed to a transition in focus from infrastructure spending to urgent health measures. The consistency in environmental hygiene scores in the current data reflects the findings of Haque et al. (2021), which indicated that schools upheld uniform cleanliness standards despite a decrease in facility scores, largely attributable to the routine cleaning protocols implemented during the pandemic.

The stagnation in behavior concerning infectious illnesses (3.0 across all years) contrasts with findings from Johnson et al. (2020), which indicated a 20% enhancement in hand hygiene practices among students following health education initiatives and the implementation of hygiene monitoring systems. The stagnation in the current dataset may suggest inadequate follow-up actions or a diminishing focus on health protocols following the outbreak. These comparisons underscore the necessity for sustained investment in both infrastructure and health education to attain enduring enhancements in school evaluations.

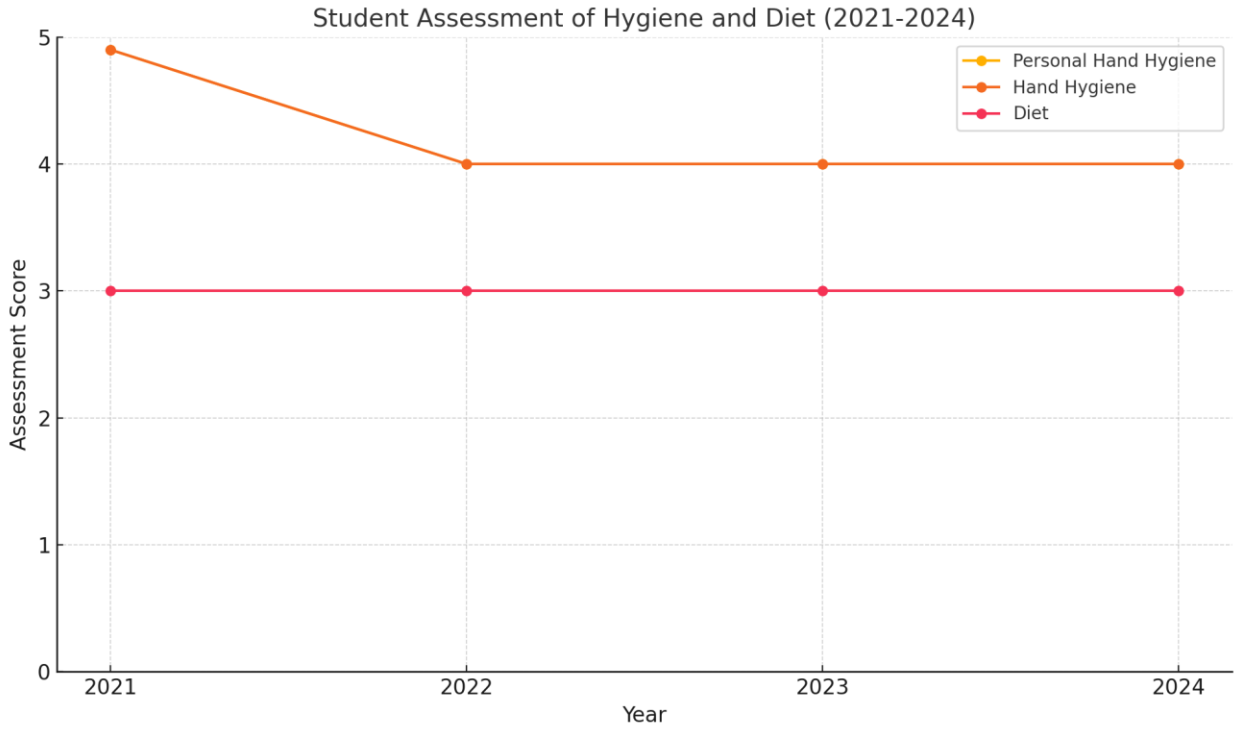


Graphic 3 Parents Assesment of Student Health Behavior

The graph 3 depicts trends in parental assessments of student health behavior across three categories: Limited, Enough, and Good, spanning the years 2021 to 2024. The "Good" category demonstrates a consistent upward trend, starting with 40 responses in both 2021 and 2022, increasing to 50 in 2023, and further rising to 51 in 2024. This trend suggests an improvement in student health behaviors, potentially resulting from effective interventions or increased involvement from parents and schools in promoting healthy practices. The "Enough" category

maintains a steady count of 40 responses over the initial three years, with a slight increase to 41 in 2024, indicating stable and moderate parental satisfaction regarding student health behaviors.

The "Limited" category shows a significant decrease, dropping from 20 responses in both 2021 and 2022 to 10 in 2023, with a slight rise to 11 in 2024. This decline indicates a reduction in the number of students identified as having poor health behaviors, suggesting advancements in health education or support systems. The slight increase in 2024 indicates a need for continued attention to the challenges faced by this group. The graph illustrates consistent progress in improving student health behaviors, underscoring the necessity for additional interventions to eliminate "Limited" ratings and increase the number of students in the "Good" category.



Graphic 4 Student Assesment of Hygiene and Diet

The graph 4 depicts the trends in student evaluations of Personal Hand Hygiene, Hand Hygiene, and Diet from 2021 to 2024. The scores for Personal Hand Hygiene and Hand Hygiene decreased from 4.9 in 2021 to 4.0 in 2022, remaining stable at this reduced level until 2024. This suggests a notable decline in hygiene behaviors after 2021, likely resulting from diminished focus on health practices instigated by the pandemic, such as regular handwashing. The scores from 2022 to 2024 indicate that, despite a notable decline, fundamental hygiene behaviors were maintained to a certain degree.

The Diet score consistently remains at 3.0 over the four-year period, indicating a lack of significant improvement or decline in student dietary habits. This stagnation indicates insufficient interventions aimed at nutrition education or enhancements in dietary practices. The data

indicates a decrease in hygiene practices following the pandemic and a continued neglect of efforts to enhance nutrition. It is essential to strengthen hygiene behaviors and implement targeted interventions to enhance student dietary practices progressively.

The line shows some trends that are similar to what other studies have found about how students clean and eat, especially when looking at changes that happened after the pandemic. To compare, a study by Kumar et al. (2021) found that students' compliance with hand hygiene dropped by 20% within a year after the pandemic, which is similar to the drop in Personal Hand Hygiene and Hand Hygiene scores in 2022.This was because people got "hygiene fatigue" as the fear of COVID-19 faded, which made them wash their hands less often and follow hygiene rules less strictly.

On the other hand, the Diet score stayed the same (3.0 across all years), which is similar to what Liu et al. (2020) found: students' eating habits didn't change much, even though there were health programs. The study found that while hygiene behaviors got a lot of attention during the pandemic, nutrition-related measures were often not given enough attention, which led to people eating the same way they always did without changing their eating habits. Rahman et al.'s (2019) study, on the other hand, found that over three years, focused nutrition education programs in schools raised dietary scores by 15%. The comparison shows how important it is to keep up with hygiene after the pandemic and use targeted interventions to improve school nutrition.

4. CONCLUSION

The data emphasizes the success of initial interventions in improving hygiene and health behaviors but also underscores the challenges of sustaining these improvements over time. To address these issues, a combination of targeted health education, improved infrastructure, consistent monitoring, and focused interventions on nutrition is essential for driving further progress and sustaining positive outcomes. Behaviors promoting cleanliness and health established during the epidemic can be sustained through systematic and sustainable initiatives from both the school and home environments.

Conflict of Interest

There is no conflict of interest in the conduct of research and the preparation of this manuscript.

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Authors' contribution

NH, AA, RS, H contributed to the idea and organization of the research

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