

## The Effect of Storytelling on Improving Compliance with Clean and Healthy Living Behavior (CHLB) Among School-Aged Children at SD Negeri Batuplat 2

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### ABSTRACT

**Background & Objective:** Clean and Healthy Living Behavior (PHBS) is a crucial component in improving the health of school-age children. This study aims to evaluate the impact of the storytelling method on school-age children's adherence to PHBS. **Method:** This research utilized a quasi-experimental design with a pretest-posttest control group approach. The study population consisted of 160 fourth and fifth-grade students from SD Negeri Batuplat 2. A total of 80 students were randomly assigned to the intervention and control groups, with 40 students in each group. The intervention involved PHBS-themed storytelling sessions conducted over four weeks. Data were collected using a PHBS adherence observation questionnaire and analyzed using paired t-tests and independent t-tests. **Result:** The results showed a significant improvement in PHBS adherence in the intervention group compared to the control group ( $p < 0.05$ ). **Conclusion:** Storytelling has been proven effective in improving clean and healthy living behavior adherence among elementary school children and can be utilized as a method in health education.

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### Introduction

School-age children are a particularly vulnerable group to both communicable and non-communicable diseases due to their still-developing immune systems and the lack of established healthy lifestyle habits. Therefore, instilling clean and healthy living behaviors from an early age is crucial to support optimal growth and development and to prevent future health risks (WHO, 2023). Clean and Healthy Living Behavior (PHBS) is essential for disease prevention in children, particularly in school-aged children. PHBS helps in establishing healthy habits from an early age,

preventing infectious diseases, and improving their quality of life in the future, such as reducing the risk of chronic diseases (Izza Azzahra Nst et al, 2019). For school-aged children, the application of PHBS is crucial to prevent various infectious diseases and enhance their future quality of life (Meliyana Siregar et al, 2024) The Indonesian government, through the Ministry of Health, has implemented PHBS programs as part of the national health strategy to improve public health, including school-aged children. However, according to the results of the National Health Survey (Riskesdas), the level of adherence to PHBS among children in Indonesia remains low, particularly in personal hygiene aspects such as handwashing, body hygiene, and nutritious food consumption (Tim YPCII, 2020) The declining adherence to PHBS among school-aged children has become an urgent issue that needs to be addressed. One approach that has started gaining attention is the use of effective communication methods to convey health messages to children. In this context, storytelling is considered a promising method to enhance understanding and change children's behaviors.

Storytelling, or narrating through engaging stories, has been proven to motivate behavioral changes in children across various aspects, including healthy living habits (Agus Mulyana et al., 2024) This method not only delivers information directly but also engages children emotionally with the story, making the messages more memorable and applicable in their daily lives. Several previous studies have shown that storytelling can enhance children's understanding and acceptance of health information. For instance, a study by (Nor Za'idah Asy'ariyah et al, 2015) found that stories involving characters relatable to children's lives can reinforce health messages and change their behavior, including personal hygiene and nutritious food consumption. Another study by (Agus Mulyana et al., 2024) also demonstrated that a storytelling-based approach was effective in increasing health awareness and behaviors in children in several developing countries, including Indonesia. However, despite numerous studies showing the effectiveness of storytelling in changing children's behaviors, few studies have specifically assessed the impact of storytelling on improving adherence to PHBS in school-aged children, especially in specific regions.

A study by (Yudiarini et al., 2020) showed that storytelling was effective in improving handwashing behavior in young children at several elementary schools in Bali. Nevertheless, further research is needed to evaluate the influence of storytelling on more comprehensive PHBS adherence, particularly in maintaining personal hygiene and nutritious food consumption among school-aged children. Against this backdrop, this study aims to evaluate the impact of storytelling on improving adherence to Clean and Healthy Living Behavior (PHBS) in school-aged children at SD Negeri Batuplat 2. This school was selected because it is located in an area with low prevalence of PHBS adherence among students, and it has the potential to utilize storytelling in the context of health education.

This study will employ a quasi-experimental design with a pretest-posttest control group design to assess whether storytelling intervention can have a significant

impact on children's health and hygiene behaviors. The importance of this study lies in the need to develop more effective and enjoyable approaches in children's health education. By applying storytelling, it is hoped that children can more easily remember and implement the health messages conveyed, leading to improved adherence to PHBS in the long term. Furthermore, the results of this study are expected to contribute to the development of health education policies in elementary schools, emphasizing methods that are engaging and easily accepted by children. This research also aims to enrich the literature on the use of storytelling-based communication methods in the context of health education at the elementary school level, providing scientific evidence on the effectiveness of storytelling in improving Clean and Healthy Living Behavior among children in Indonesia. As part of a community-based intervention, storytelling could become a practical and enjoyable solution for enhancing children's quality of life through more sustainable and effective behavioral changes.

### **Objective**

This study aims to determine the effect of storytelling on improving adherence to Clean and Healthy Living Behavior (PHBS) among school-age children in SD Negeri Batuplat 2, Kupang, Indonesia.

### **Method**

This study utilized a quasi-experimental design with a pretest-posttest control group approach. The quasi-experimental design was chosen due to its ability to assess the causal relationship between the storytelling intervention and the improvement of Clean and Healthy Living Behavior (PHBS) adherence in school-age children. This design also allowed for a comparison between a group receiving the intervention and a control group, which did not undergo any intervention. The population for this study consisted of 160 students enrolled in the 4th and 5th grades at SD Negeri Batuplat 2, Kupang, Indonesia. The study employed a random sampling technique to select the participants. A total of 80 students were selected, and they were then randomly divided into two groups: the intervention group and the control group. Each group consisted of 40 students. The inclusion criteria for participants were as follows: students aged 9-12 years who were able to comprehend the storytelling content and were willing to participate in the study.

The intervention in this study was a series of storytelling sessions, which were conducted once a week for a period of four weeks. Each session focused on a specific aspect of Clean and Healthy Living Behavior (PHBS), such as the importance of washing hands with soap, maintaining personal hygiene, and the benefits of consuming a balanced and nutritious diet. These sessions were designed to be interactive, encouraging students to actively participate through discussions and question-and-answer segments. The stories were constructed in a way that appealed to children, using characters and narratives that made the learning process enjoyable

and relatable. The control group, on the other hand, did not receive any form of storytelling intervention. Instead, they were provided with standard health education materials, which consisted of written information and lectures about PHBS. This approach allowed for the assessment of storytelling as a specific method of intervention, separate from other traditional forms of health education. The primary instrument used for data collection was a 10-item observational checklist, specifically developed to assess adherence to key PHBS components.

The checklist was based on established guidelines from health authorities, and it covered areas such as proper handwashing techniques, personal hygiene practices, and dietary habits. The checklist was designed to be easy to administer by teachers or researchers and to capture both the frequency and quality of behaviors related to PHBS. The checklist was administered twice: once before the intervention (pretest) and once after the intervention (posttest). This allowed for a comparison of changes in PHBS adherence within both the intervention and control groups over the course of the study. Data collection took place over a period of eight weeks. The pretest was conducted during the first week, before the intervention started. The data was collected through direct observation of the students' behavior related to PHBS, with the checklist used to record each child's adherence to the specified behaviors. Observers were trained to ensure consistency in their assessments. During the intervention period, the intervention group attended the weekly storytelling sessions, while the control group engaged in standard health education activities. After the four weeks of intervention, a posttest was conducted to assess the students' adherence to PHBS again, using the same observational checklist as in the pretest. For data analysis, both paired t-tests and independent t-tests were used.

The paired t-test was employed to analyze within-group changes by comparing the pretest and posttest scores for both the intervention and control groups. This test assessed whether there was a statistically significant change in PHBS adherence after the intervention for each group. The independent t-test was used to compare the differences in posttest scores between the intervention and control groups. This comparison helped determine whether the intervention group showed a significantly greater improvement in PHBS adherence than the control group, which did not receive the storytelling intervention. The statistical significance level was set at  $p < 0.05$ , and all data analysis was conducted using a statistical software package.

### **Ethical Considerations**

Informed consent was sought from all participants and their parents or guardians prior to the study. Students were assured that their participation was voluntary and that they could withdraw at any time without any consequences. To maintain confidentiality, all data were anonymized, and only aggregated results were reported.

This methodology was designed to rigorously evaluate the effectiveness of storytelling as an intervention to improve adherence to PHBS among school-age children. By using both quantitative and observational data, the study aimed to

provide robust evidence on the impact of this approach in promoting health behaviors in an educational setting.

## Results

Data analysis revealed a significant increase in compliance scores for Clean and Healthy Living Behavior (CHLB) among the experimental group that received the storytelling intervention compared to the control group that did not receive any intervention.

### Respondent Characteristics

Table 1 presents the characteristics of the respondents involved in this study. A total of 80 students participated, divided equally into two groups: an experimental group and a control group, each consisting of 40 students. The average age of the respondents was 10.2 years with a standard deviation of 1.1. The gender distribution was also balanced, with 50% male and 50% female participants.

Table 1. Respondent Characteristics		
Variable	N	%
<b>Age</b>		
Mean	10.2	
Standard Deviation (SD)	1.1	
> Mean	40	50.00%
< Mean	40	50.00%
<b>Gender</b>		
Male	40	50.00%
Female	40	50.00%

### CHLB Compliance Score Distribution Before and After the Intervention

The distribution of CHLB compliance scores in both the experimental and control groups before and after the intervention is illustrated in Figure 1. The figure indicates that the experimental group experienced a greater improvement compared to the control group following the storytelling intervention.

### Statistical Test Results

To evaluate the effect of storytelling on CHLB compliance, paired t-tests and independent t-tests were conducted.

#### 1. Paired t-test

The paired t-test was used to compare CHLB compliance scores within the experimental and control groups before and after the intervention. The analysis showed a significant increase in CHLB scores in the experimental group after the storytelling intervention ( $p < 0.05$ ). The mean CHLB score in the experimental group increased by 25%, indicating a notable behavioral improvement in clean and healthy living practices among the children. In contrast, the control group showed only a minimal increase of approximately 5%, suggesting that without the storytelling intervention, behavioral change regarding CHLB was negligible.

#### 2. Independent t-test

The independent t-test was employed to compare CHLB scores between the experimental and control groups after the intervention. The results indicated a significant difference between the two groups ( $p < 0.05$ ). The experimental

group, which received the storytelling intervention, exhibited higher CHLB scores compared to the control group. This finding suggests that storytelling had a greater impact on enhancing CHLB compliance among children.

**Table 2. CHLB Compliance Scores Before and After the Intervention**

The table below illustrates the changes in CHLB compliance scores in both the experimental and control groups before and after the intervention. These data were obtained from an observational questionnaire administered to both groups.

Group	CHLB Score Before Intervention	CHLB Score After Intervention	Change (%)
Experimental Group	62 ± 8.3	77 ± 7.2	25%
Control Group	60 ± 7.9	63 ± 6.1	5%

As shown in Table 2, the experimental group experienced a significant 25% increase in CHLB compliance scores, whereas the control group showed only a modest improvement of 5%. This indicates that the storytelling intervention contributed substantially to enhancing CHLB compliance in the experimental group.

## Discussion

The results of this study indicate that storytelling has a significant impact on improving compliance with Clean and Healthy Living Behavior (CHLB) among school-aged children. As a medium of health communication, storytelling proves to be effective because it builds emotional engagement and facilitates the understanding and application of health messages in children's daily lives. As stated by (Wardiah, 2017), storytelling as a health communication method excels in fostering empathy, enhancing comprehension, and making learning materials more enjoyable and memorable. Story-based teaching encourages greater emotional involvement from children, thereby improving their ability to comprehend and internalize the conveyed information.

### Effectiveness of Storytelling in Improving CHLB Compliance

Children tend to be more interested and easily engaged in story-based learning compared to traditional lectures or conventional methods of information delivery. Stories possess greater appeal and stimulate children's imagination and emotions. Storytelling also provides opportunities for children to identify with characters who share similar traits or experiences. This identification process helps children understand the message conveyed through the story and motivates them to imitate the healthy behaviors portrayed. In other words, storytelling facilitates interactive and experiential learning, making it easier for children to remember and apply health messages (Putri et al., 2024). This finding aligns with previous studies (Amrullah & Awalunisah, 2022; Saiful, 2024) which suggest that story-based approaches are more effective in changing children's health-related attitudes and behaviors. Other studies have also found that children exposed to stories containing health messages exhibit more significant behavioral changes in adopting healthy habits compared to those who receive health information through lectures or other teaching methods (Agus

Mulyana et al., 2024). These findings underscore that storytelling is not only a tool for delivering messages but also a method that enhances the effectiveness of health education processes for children.

### **Strengths of the Research Design**

A major strength of this study is the use of a quasi-experimental design with a pretest-posttest control group, which enables the researchers to compare behavioral changes in the experimental group receiving the storytelling intervention with those in the control group that received no intervention. This design allows for a more objective assessment of the intervention's impact on CHLB compliance among children. Additionally, the use of observational questionnaires to measure CHLB compliance provided more accurate and reliable data to assess behavioral changes following the storytelling intervention. The success of the storytelling method was further supported by the selection of stories that were relevant to children's everyday lives, as well as the interactive nature of the stories. The stories used in this study conveyed messages aligned with CHLB topics, such as the importance of handwashing, personal hygiene, and consuming nutritious food. They were delivered in engaging and interactive ways that encouraged children's active participation, which in turn positively influenced their behavioral changes.

### **Study Limitations**

Despite the positive outcomes, this study has several limitations. First, the relatively short intervention period of four weeks may not be sufficient to observe long-term behavioral changes. Developing healthy habits in children, particularly those related to CHLB, requires sustained efforts over a longer period to ensure consistent behavioral adoption. Therefore, future research with longer intervention durations is recommended to evaluate the long-term effects of storytelling on CHLB compliance.

Another limitation is that the study was conducted in a single school – SD Negeri Batuplat 2 in Kupang – limiting the generalizability of the findings to a broader population. Social and cultural diversity among schools across Indonesia, as well as differences in student characteristics, may influence the effectiveness of the storytelling intervention in other contexts. Future studies with larger and more diverse samples from multiple schools in different regions would be beneficial to determine the broader applicability of these findings. Furthermore, although the storytelling intervention was designed to provide a fun and engaging learning experience for children, other factors such as parental involvement in supporting healthy behavior at home or environmental influences may have contributed to the observed behavioral changes. Future studies that consider these external factors could provide a more comprehensive understanding of how storytelling affects CHLB compliance in children.

### **Recommendations for Future Research**

Based on the limitations mentioned, several recommendations can be made for future research. First, extending the intervention period to 8 to 12 weeks may offer a

clearer picture of the sustainability of storytelling's impact on CHLB compliance. In addition, involving more schools with varying characteristics, such as differences in socio-economic backgrounds, will help assess the effectiveness of storytelling across diverse educational settings. Future studies may also adopt mixed-methods approaches to explore in greater depth the children's experiences and perceptions of storytelling and how they internalize the health messages conveyed through stories. Interviews or focus group discussions with students and teachers could provide deeper insights into how storytelling influences behavioral change. Overall, despite some limitations, this study provides evidence that storytelling is an effective method for improving CHLB compliance in children. Incorporating storytelling into health education programs in Indonesian elementary schools is highly recommended as a creative and impactful approach to promote healthy behaviors among the younger generation.

### Conclusion

The study demonstrates that storytelling is an effective method to improve compliance with Clean and Healthy Living Behavior (CHLB) among school-aged children. By making health messages more engaging and understandable, storytelling encourages positive behavior changes. Integrating this approach into health education can foster healthy habits from an early age with long-term benefits.

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### References

1. Agus Mulyana, Dela Lestari, Dhillia Pratiwi, Nabila Mufidah Rohmah, Nabila Tri, Neng Nisa Audina Agustina, & Salma Hefty. (2024). Menumbuhkan Gaya Hidup Sehat Sejak Dini Melalui Pendidikan Jasmani, Olahraga, Dan Kesehatan. *Jurnal Bintang Pendidikan Indonesia*, 2(2), 321-333. <https://doi.org/10.55606/jubpi.v2i2.2998>
2. Amrullah, A., & Awalunisah, S. (2022). Pengaruh Metode Storytelling Terhadap Sikap Empati Anak Di Kelompok B Tk Al-Khairaat Parigi. *Jurnal Golden Age*, 6(01), 322-332.
3. Izza Azzahra Nst et al. (2019). Factors Related To Clean And Healthy Living Behavior (Phbs) In Students. *Indonesian Journal of Global Health Research*, 2(4), 1783-1792. <https://doi.org/10.37287/ijghr.v2i4.250>
4. Meliyana Siregar et al. (2024). Edukasi Perilaku Hidup Bersih Dan Sehat (Phbs) Kepada Anak Di Desa Sorik, Sumatera Utara. 3(1), 26-33. <file:///C:/Users/Asus/Downloads/jurnal+pkm+pgmi+revisi+sorik.pdf>
5. Nor Za'idah Asy'ariyah et al. (2015). *storytelling sebagai upaya meningkatkan konsumsi sayur*. 151(1), 10-17.
6. Putri, S. A. C., Ayriza, Y., Khumalo, J., & Joitun, F. A. (2024). The Impact of Folklore-Based Storytelling on Empathy Behavior in Kindergarten Children. *International Journal of Islamic Educational Psychology*, 5(1), 142-160. <https://doi.org/10.18196/ijiep.v5i1.22589>



7. Saiful, N. (2024). *Efektivitas Storytelling dalam Meningkatkan Minat Baca Anak : Studi Kasus Program Kejar Baca di Perpustakaan Cinta Baca Medan Berdasarkan hasil survei Program for International Student Assessment ( PISA ) pada 2022 , yang dikeluarkan oleh Organization for Economic Cooperation and Development*. 10(2), 143–154.
8. Tim YPCII. (2020). *Pedoman Program Perilaku Hidup Bersih dan Sehat (PHBS) Pendidikan Anak Usia Dini*. In *Direktorat Pembinaan PAUD* (Vol. 5, Issue 3).
9. Wardiah, D. (2017). *Peran Storytelling Dalam Meningkatkan Kemampuan Menulis, Minat Membaca Dan Kecerdasan Emosional Siswa*. 15(2), 1–23.
10. WHO. (2023). *Global accelerated action for the health of adolescents (AA-HA!) guidance to support country implementation*. In *Who*. <https://apps.who.int/iris/bitstream/handle/10665/255415/9;jsessionid=B309C8C56E5EEFA24FA2F606422AB847?sequence=1>
11. Yudiarini, N. N., Agustini, I. G. A. R., & Prihandini, C. W. (2020). *Story Telling Dalam Pendidikan Personal Hygiene Mempengaruhi Kepatuhan Cuci Tangan Pakai Sabun Pada Anak Usia 6-7 Tahun Di Sd Negeri 13 Sesetan*. *Jurnal Keperawatan Terapan*, 6(1), 56–66.