

## Implementation of Storytelling-Based Hand Washing Education to Educate Elementary School Children in South-East Asia

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### Abstract

Hand washing is an essential thing in life. Unfortunately, there are still many children who do not know how to wash their hands properly or apply handwashing in their daily lives. Until now, the health literacy of children in Indonesia is very low. In fact, hand washing is a simple thing that should be taught to children from an early age. If this is allowed many diseases can manifest in the future. Therefore, a cutting-edge solution is needed to deal with this problem towards the Industrial Revolution 4.0.

To analyze the implementation of storytelling-based methods to educate elementary school children on the importance of hand washing.

From the PubMed, Science Direct, and Wiley databases last accessed 15 October 2022, one hundred and fourteen (114) search results were filtered using PRISMA 2009 as sources with three (3) main data in the form of clinical studies that had been screened according to the criteria. inclusion and exclusion and processed using the study tool from NIH.

Storytelling is a powerful communication method to support the transfer of complex information into simple ones. The benefits of storytelling have been proven by scientific studies. The implementation of storytelling in handwashing education has been proven to have an effective and efficient impact.

The implementation of the storytelling method has effectiveness and efficiency that is able to support education about hand washing and can be implemented in Indonesia.

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### Introduction

Hand washing is an essential thing needed in life. Unfortunately, many children still do not know how to wash their hands properly or practice hand washing in their daily lives.<sup>1,2</sup> Most Indonesian children do not practice complete hand washing in their daily lives, such as before and after eating, after using the toilet, or after touching potentially infectious surfaces.<sup>2</sup> In fact, many children in Indonesia need to wash their hands when they see the dirty surface of their hands.

Unknowingly, this bad hand washing habit impacts diseases that stalk children. This is reinforced again, considering that poor hygiene can cause the transmission of several diseases. As with COVID-19,<sup>3,4</sup> flu,<sup>5</sup> diarrhea,<sup>6</sup> hepatitis,<sup>7</sup> and others.

Until now, children's health literacy in Indonesia is very low.<sup>8</sup> In fact, washing hands is a simple thing that should be taught to children early.<sup>9</sup> If this is left unchecked, many diseases can manifest in the future.<sup>10</sup> Towards Golden Indonesia 2030, the health of the nation's children needs to be prioritized because competence alone is not enough without human resources with a good quality of life. In addition, considering that Indonesia has an agenda to implement the Sustainable Development Goals (SDG), Indonesia's aspirations start from being a productive nation's children.

Therefore, in this literature review, the authors would like to explore further potential of storytelling-based hygiene education in educating

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elementary school children. This method has been used to deliver health education in countries such as Iran,<sup>11</sup> India,<sup>12</sup> Canada,<sup>13</sup> and others. This method is effective for educating children from a cognitive and psychomotor perspective. However, there is much that needs to be improved to improve its implementation in Indonesia evenly.

**Materials and methods**

Data collection techniques were performed in the PubMed, Science Direct, and Wiley databases. The last source search was conducted on October 15, 2022. The keywords used were “((story telling) OR (puppet education) AND (hygiene education OR hand washing education) AND (children))”. The author used the inclusion criteria of a quasi-study design. The intervention used was using dolls in educating hygiene within the last ten (10) years of study publication. Meanwhile, the exclusion criteria were the unavailability of the full version, incomplete study results, clinical studies without a control group, and languages other than Indonesian or English. The next step is data processing using PRISMA Flow Diagrams and habit analysis using the NIH Study Tool.

Studies	Perdani et al., (2018)	Mohamed et al., (2018)	Dahlia et al., (2022)
Criteria			
1	Y	Y	Y
2	Y	Y	Y
3	Y	Y	Y
4	Y	Y	Y
5	Y	Y	Y
6	CD	Y	N
7	Y	Y	Y
8	Y	Y	Y
9	Y	N	Y
10	Y	Y	Y
11	Y	CD	Y
12	Y	Y	Y

**Table 1.** Risk Bias Assessment.

Note: Y=Yes, N=No, CD = Cannot Determined, NR= Not Reported. Adapted from <https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools>

To accomplish this study, the authors use the PICO analysis as follows:

Population : Elementary school children aged 6-12 years.

Intervention : Hand washing education with the storytelling method.

Comparison : Comparing cognitive and psychomotor knowledge (baseline 0) and after intervention (baseline 1)

Outcome : Cognitive and psychomotor knowledge after the intervention is much improved compared to before the intervention.

From the PubMed, Science Direct, and Wiley databases which were last accessed on October 15, 2022, thirteen (13) search results were obtained which had been filtered into sources with 3 (three) main data in the form of quasi field studies.

As for the next step, three (3) journals were screened using the NIH Study Tool.

**Results**

No	Name (Year), Country	Subjects	Results	
			Effectiveness	Efficiency
1	Perdani et al., 2018 (Indonesia) <sup>14</sup>	53 children	Increased behavior of children by 2x in washing hands  Easier to do does not require special equipment.	Easier to do does not require special equipment.
2	Mohamed et al, 2018 (Malaysia) <sup>15</sup>	146 children	There are significant differences after the intervention in knowledge and attitudes. Information becomes easier to absorb and understand. Children who reported having health knowledge were 3.8x more obedient in maintaining their health.	Easier to apply.
3	Dahlia et al, 2022 (Indonesia) <sup>16</sup>	40 children, 9-11 years old	Increased knowledge, psychomotor, and children's motivation in washing hands so that the target is achieved. There are significant results between measurements.	Easier to apply, and cost efficient.

**Table 2.** Summary of 3 Main Sources.

**Discussion**

Storytelling has proven to be a simple, easy, and effective method for children to absorb and remember what is conveyed to them.<sup>16</sup> Moreover, children generally enjoy listening to stories, and through this method, children's imaginations can be further developed.<sup>14</sup>

Mohamed et al., (2018) explained further that verbal intervention and physical involvement could stimulate children's curiosity so that their willingness to learn and listen increases.<sup>15</sup>

Based on data analysis, there is a positive impact cognitively and psychomotor that is felt by children. The effects have been noted to be able to increase children's knowledge and psychomotor skills in washing hands.<sup>16</sup> Supported by the research of Mohamed et al., (2018), which reported a significant increase in children's knowledge and obedience to wash their hands. This increase in knowledge can be clearly seen from the post-test results, which significantly better than the pre-test given.<sup>15</sup>

From another point of view, apart from increasing knowledge, children's motivation to maintain personal hygiene through hand washing also increases.<sup>16</sup> It is reinforced by Perdani's research (2018) which explains that the behavior of washing hands with soap properly increases after children are given storytelling.<sup>14</sup> The application of storytelling is not only proven to be effective but also proven to be efficient in terms of costs incurred and the minimum number of tools needed.<sup>14,16</sup>

Even though it has various advantages, interventions with storytelling in increasing hand-washing knowledge and behavior still need to be developed in the future. Storytelling is a method that is favored by children and is often influenced by background, culture, and socio-economic factors which can have an impact on effectiveness. The same literature also states the need for the development of storytelling so that it can become a means of health promotion in an effort to increase understanding and support the development of hand-washing behavior.<sup>3</sup> Other researchers revealed that this storytelling method must be repeated and strengthened from time to time to produce a sustainable impact.<sup>15</sup>

Implementation Storytelling education in increasing children's knowledge and psychomotor skills in washing hands can be an effort to build the habit of maintaining children's hygiene from an early age. It is hoped that by providing story-based education, children will be able to absorb and capture it so that gradually the information and habit of washing hands can be embedded in the child's brain.<sup>16</sup> The implementation of storytelling education in increasing knowledge and psychomotor hand washing is possible to be developed in Indonesia

in terms of its effectiveness and efficiency. In regards of preventing oral disease, this approach might be beneficial to avoid further consequences.<sup>17</sup>

## Conclusions

In summary, it can be concluded that the use of storytelling-based education is an effective method in increasing children's knowledge and psychomotor abilities in hand washing. The implementation of storytelling education is proven in terms of cost efficiency and simplicity because it does not require special tools. Nevertheless, the use of storytelling is a broad matter with many factors, such as background, preferences for storytelling methods, and culture, and needs to be explored again so that it is right on target and has a better clinical effect.

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## Declaration of Interest

The authors report no conflict of interest.

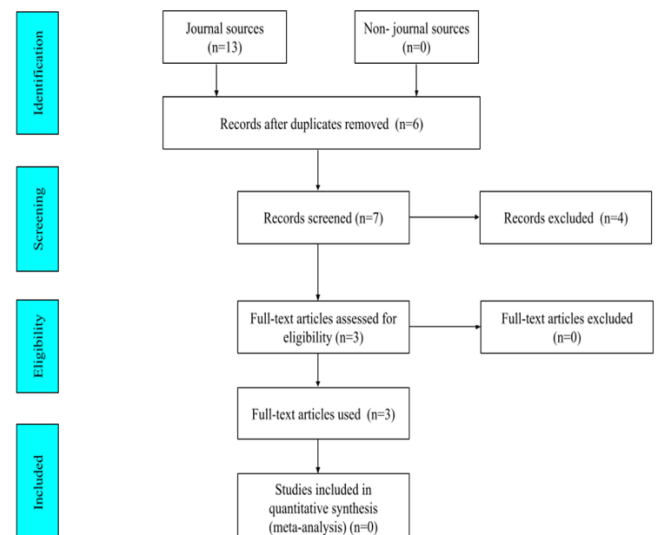


Figure 1. PRISMA 2009 Flow Diagram.

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