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The Meaning and Behavioral Impact of Health Education among Primary School Children: A Health Psychology Perspective

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ABSTRACT

Health behavior in children is shaped not only by knowledge but also by psychological processes such as perception, meaning-making, and motivation. However, many health education studies focus primarily on cognitive outcomes and overlook children's subjective experiences. This study aimed to explore the meaning and behavioral impact of health education on primary school children from a health psychology perspective. A qualitative multiple-case study design was employed involving three primary school children. Data were collected through semi-structured interviews, observation, and documentation. A pre–post knowledge assessment was used as supporting data. The intervention consisted of health education delivered through lecture and video media, focusing on clean and healthy living behavior. Data were analyzed using thematic analysis to identify patterns of meaning and behavioral change. The findings showed a significant increase in knowledge scores from 50 to 85 following the intervention. More importantly, qualitative analysis revealed that children developed a meaningful understanding of health behavior, demonstrated increased awareness, and showed positive behavioral changes in daily practices. The use of visual media enhanced engagement and facilitated comprehension, while emotional responses toward the learning experience supported motivation to adopt healthy behavior. Health education is most effective when it is perceived as meaningful by children.

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INTRODUCTION

Health is a fundamental component of human development, particularly during childhood, a critical period in the life course when behavioral patterns and psychological processes begin to form and stabilize. Primary school children represent a developmental stage in which cognitive, emotional, and social capacities are rapidly evolving, making them highly receptive to environmental influences, including health-related education (World Health Organization, 2021). From a health psychology perspective, children's health behaviors are not merely shaped by knowledge acquisition but are deeply influenced by psychological processes such as perception, motivation, and meaning-making (Suarjana, 2024).

In recent years, there has been increasing concern regarding the decline in healthy behaviors among school-aged children, particularly in relation to hygiene practices, physical activity, and dietary habits. Studies indicate that inadequate health behaviors in childhood are associated with long-term health risks, including chronic diseases and poor psychological well-being (World Health Organization, 2024). In the Indonesian context, several reports have highlighted that children's adherence to clean and healthy living behaviors (Perilaku Hidup Bersih dan Sehat/PHBS) remains

suboptimal, often due to limited awareness, insufficient health education, and lack of reinforcement in daily environments (Kemenkes, 2024).

Health education has been widely implemented as a strategy to improve children's knowledge and promote healthier behaviors. Empirical evidence demonstrates that educational interventions can significantly increase health-related knowledge and influence behavioral outcomes among children (Alaçam & Olgan, 2021). However, many existing studies tend to focus primarily on measurable outcomes such as knowledge scores or behavioral indices, while overlooking the underlying psychological processes that mediate these changes. In particular, the subjective meaning that children attach to health education experiences remains underexplored, despite its critical role in shaping sustained behavior change (Sidabutar et al., 2022).

From the perspective of health psychology, behavior change is not solely a result of information transfer but involves complex cognitive and emotional mechanisms, including internalization, self-regulation, and motivation (Parkinson et al., 2023). Theories such as Self-Determination Theory emphasize that individuals are more likely to adopt and maintain healthy behaviors when they perceive the experience as meaningful and relevant to their lives (Ryan & Deci, 2020). In children, this meaning-making process is particularly important, as it influences how they interpret health messages and integrate them into daily practices.

Despite the growing body of research on health education interventions, there remains a significant gap in understanding how children experience and interpret these interventions from a psychological standpoint. Most studies adopt quantitative approaches that prioritize statistical outcomes, thereby limiting insight into the lived experiences and subjective interpretations of participants (Parkinson et al., 2023). This gap is especially evident in school-based health programs, where the success of interventions often depends not only on content delivery but also on how children perceive, engage with, and internalize the learning process (Suarjana, 2024).

Addressing this gap is essential for developing more effective and sustainable health promotion strategies. By exploring the meaning and behavioral impact of health education from a health psychology perspective, researchers can gain a deeper understanding of the mechanisms underlying behavior change in children. Such insights are crucial for designing interventions that are not only informative but also psychologically engaging and developmentally appropriate (E. R. I. H. R. P. T. Aji, 2022).

Therefore, this study aims to explore the meaning and behavioral impact of health education on primary school children through a health psychology lens. Specifically, the study seeks to understand how children perceive and interpret health education experiences, as well as how these experiences influence their health-related behaviors. By adopting a case study approach, this research is expected to provide rich, contextual insights into the psychological processes that support behavior change, thereby contributing to the advancement of health psychology and child development research.

METHODS

Research Design

This study employed a qualitative case study design to explore the meaning and behavioral impact of health education on primary school children from a health psychology perspective. The qualitative approach was selected because this study aimed not only to examine measurable outcomes, such as knowledge improvement, but also to understand the psychological processes underlying children's experiences, including perception, interpretation, and meaning-making. In qualitative inquiry, case study design is particularly appropriate when researchers seek to investigate a phenomenon in depth within its real-life context, especially when the boundaries between the phenomenon and its context are not clearly evident (Immy Holloway, 2019).

From a health psychology perspective, children's health behavior is influenced not only by exposure to information but also by internal psychological processes such as cognitive appraisal, emotional engagement, and motivation. Therefore, this study conceptualized health education as both an instructional intervention and a psychological experience. The design allowed the researcher to capture how children interpreted health messages and how those interpretations contributed to observable behavior change. This study adopted a multiple-case format involving three participants, enabling cross-case comparison while maintaining the depth and uniqueness of each individual experience.

The study was conducted at SD Jumapolo, Karanganyar, Indonesia, which represents a natural educational environment where children routinely engage in structured learning activities and social interaction. The school setting was selected because it provides a relevant and realistic context for observing the development of health-related behaviors among children. Health behavior formation at this stage is closely linked to daily school routines, peer interaction, teacher guidance, and environmental exposure. School-based health education has been widely recognized as an effective platform for promoting healthy behavior, as it integrates cognitive learning with real-life practice in a structured setting (Kario et al., 2024).

By situating the research within the school context, the study ensured that the findings reflected authentic experiences rather than artificial or laboratory-based responses. This contextual approach allowed the researcher to observe how health education was received, processed, and translated into behavior within the children's everyday environment.

Participant and Procedure

The participants in this study consisted of three primary school children who were selected using purposive sampling techniques. Purposive sampling was employed to identify participants who were able to provide rich and relevant information regarding the research phenomenon. In qualitative research, the emphasis is placed on depth of understanding rather than generalization, making purposive sampling a suitable strategy for selecting information-rich cases (Talib et al., 2025).

The selection criteria included children who were actively enrolled in the school, able to communicate their thoughts and experiences, and willing to participate in both the educational intervention and the interview process. Parental or guardian consent was obtained prior to participation to ensure ethical compliance. Each participant was treated as an individual case and was represented using pseudonyms to maintain confidentiality. Although the number of participants was limited, this is consistent with qualitative case study research, where detailed exploration of each case is prioritized over large sample sizes.

The health education intervention was designed to promote clean and healthy living behavior among primary school children using a combination of lectures and video-based learning. The content of the intervention focused on practical and developmentally appropriate topics, including personal hygiene, handwashing practices, clean eating habits, and environmental cleanliness. The educational material was tailored to match the cognitive level of children, ensuring that the information was easily understood and relevant to their daily activities (P. T. Aji, Rizkasari, et al., 2026).

The intervention began with a preparatory stage in which the researcher coordinated with the school and developed the educational materials. Particular attention was given to the use of simple language, visual support, and relatable examples, as these elements are known to enhance children's engagement and comprehension. Prior to the intervention, a baseline assessment was conducted to evaluate the participants' initial knowledge and behavior related to clean and healthy living. The baseline knowledge score indicated a relatively low level of understanding, with an average score of 50.

The educational session was then delivered through direct explanation supported by visual media in the form of an educational video. The combination of verbal instruction and visual representation was intended to enhance comprehension, retention, and emotional engagement. During the session, the researcher also observed the participants' level of attention, interest, and responsiveness to the material. Following the intervention, the children were encouraged to express their understanding and reflect on what they had learned. This reflection process was essential to capture the meaning they attached to the educational experience.

After the session, a post-intervention assessment was conducted to evaluate changes in knowledge and behavior. The results indicated a significant improvement, with the knowledge score increasing from 50 to 85. In addition to numerical improvement, qualitative observations suggested that the children demonstrated greater awareness, motivation, and willingness to practice healthy behaviors in their daily routines. This combination of quantitative and qualitative data provided a comprehensive understanding of both the impact and the meaning of the intervention

Research Instruments

In this study, the researcher served as the primary instrument, as is typical in qualitative research. The researcher was responsible for designing the study, delivering the intervention, collecting data, and interpreting the findings. This role required sensitivity, reflexivity, and the ability to engage with participants in a manner appropriate to their developmental stage (Lv & Sun, 2021).

Supporting instruments were used to enhance data collection and ensure the depth of analysis. A semi-structured interview guide was developed to explore the participants' understanding, feelings, and interpretations of the health education experience. The interview questions were designed to be flexible and child-friendly, allowing participants to express their thoughts freely while still addressing the research objectives. In addition to interviews, an observation guide was used to document behavioral changes and responses during and after the intervention. This observational data provided important insight into how children translated knowledge into action.

A simple pre-post knowledge assessment was also included to document measurable changes in understanding. Although the study was primarily qualitative, the inclusion of this assessment strengthened the evidence of intervention impact. Documentation in the form of field notes, educational materials, and reflective records was also maintained to support data triangulation and contextual analysis.

Data collection was conducted through a sequential and integrated process to ensure depth and consistency. The researcher first established rapport with the participants to create a comfortable and supportive interaction environment. This step was particularly important because children are more likely to express their thoughts openly when they feel safe and understood.

Following rapport building, baseline data were collected through observation and pre-intervention assessment. The health education session was then delivered, during which the researcher actively observed participants' engagement and reactions. Immediately after the session, semi-structured interviews were conducted to explore the participants' experiences, interpretations, and perceived relevance of the educational content.

Subsequent observation and post-intervention assessment were carried out to identify behavioral changes and knowledge improvement. This process allowed the researcher to capture multiple dimensions of the phenomenon, including cognitive change, behavioral response, and psychological meaning.

Data Analysis

The data were analyzed using thematic analysis within a qualitative case study framework. The analysis began with data familiarization, in which the researcher reviewed all collected data repeatedly to gain a comprehensive understanding of the content. This was followed by the coding process, where meaningful segments of data were identified and labeled.

The codes were then organized into categories based on similarities and relationships. From these categories, broader themes were developed to represent the core findings of the study. The themes reflected both the meaning of the educational experience and its impact on behavior. Each case was analyzed individually before conducting a cross-case comparison to identify patterns and variations among participants.

The final stage of analysis involved interpreting the findings through a health psychology perspective. This interpretation focused on how cognitive, emotional, and motivational processes contributed to behavior change. By linking the findings to relevant psychological concepts, the study was able to provide a deeper explanation of how health education influences children beyond surface-level outcomes.

To ensure the rigor of the study, several strategies were applied to enhance trustworthiness. Credibility was established through data triangulation, combining interviews, observations, and documentation. Dependability was supported by maintaining a clear and detailed description of the research process. Confirmability was achieved by ensuring that interpretations were grounded in the data rather than researcher bias. Transferability was enhanced by providing rich and detailed descriptions of the research context and participants, allowing readers to assess the applicability of the findings to other settings.

Ethical considerations were carefully addressed throughout the study. Permission was obtained from the school, and informed consent was secured from the participants' parents or guardians. The participants were informed about the purpose of the study in a manner appropriate to their age and were assured that their participation was voluntary (Kurihara et al., 2024).

Confidentiality was maintained by using pseudonyms and avoiding the disclosure of identifiable information. The researcher also ensured that the data collection process was conducted in a respectful and supportive manner, minimizing any potential discomfort. Given that the study involved children, special attention was paid to their emotional well-being, ensuring that all interactions were conducted in a safe and non-threatening environment.

RESULT AND DISCUSSION

Results

To provide a clearer overview of the changes in knowledge before and after the intervention, the results are presented in Table 1.

Table 1. Changes in Knowledge Scores Before and After Health Education

Participant	Pre-test Score	Post-test Score	Improvement
Child A	50	87	+37
Child B	50	85	+35
Child C	55	90	+35

As shown in Table 1, all participants experienced a substantial increase in knowledge scores following the health education intervention. The consistent improvement across all cases indicates that the educational approach was effective in enhancing children's understanding of clean and healthy living behavior.

The qualitative findings were further categorized into several key themes, as presented in Table 2.

Table 2. Themes of Meaning and Behavioral Changes

Theme	Description
Understanding Health Meaning	Children developed an understanding of the importance of hygiene and healthy habits
Increased Awareness	Children showed increased awareness of daily health practices
Behavioral Change	Children began to apply clean and healthy living behaviors in daily routines
Emotional Engagement	Children expressed positive feelings and motivation toward health education

The identified themes demonstrate that the impact of health education extends beyond knowledge acquisition, encompassing psychological meaning, emotional engagement, and observable behavioral change.

The findings of this study demonstrate that health education provided to primary school children resulted in both measurable improvement in knowledge and meaningful changes in health-related behavior. Prior to the intervention, the participants showed limited understanding of clean and healthy living behavior, as reflected in the baseline knowledge score of 50. Their responses during the initial interaction indicated that health practices such as proper handwashing, maintaining personal hygiene, and healthy eating were not consistently understood or practiced as part of their daily routines.

Following the health education intervention, there was a substantial increase in knowledge, with the post-intervention score rising to 85. This improvement suggests that the educational session successfully enhanced children's cognitive understanding of health-related concepts. However, beyond numerical gains, the qualitative findings revealed bigger psychological changes that are central to the focus of this study.

Thematic analysis of interview and observational data identified several key patterns. First, the participants demonstrated a clearer understanding of the importance of clean and healthy behavior, often expressing this in simple but meaningful ways. Children began to articulate reasons for maintaining hygiene, such as preventing illness and feeling more comfortable in their daily activities. This shift reflects not only knowledge acquisition but also an emerging awareness of the relevance of health behavior to their personal well-being.

Second, the participants showed increased interest and engagement during the educational session, particularly in response to visual media. The use of video appeared to facilitate comprehension by providing concrete examples that were easier for children to interpret and remember. Observational data indicated that children were more attentive, responsive, and willing to participate when visual elements were included (Hastjarjo, 2020).

Third, behavioral changes were observed following the intervention. Participants exhibited greater willingness to practice healthy behaviors, such as washing hands properly, maintaining cleanliness, and paying attention to food hygiene. These changes were not only reported verbally but also supported by observational evidence, indicating that the educational experience influenced actual behavior rather than remaining at the level of intention.

Finally, the participants expressed positive emotional responses toward the educational experience. They described the session as enjoyable, understandable, and useful for their daily lives. This emotional engagement appeared to play a role in reinforcing both understanding and behavior change, suggesting that the intervention was meaningful to the participants rather than merely informative.

Overall, the results indicate that the health education intervention contributed to cognitive improvement, behavioral change, and the development of meaningful psychological understanding among primary school children.

Discussion

The findings of this study highlight that health education is not only effective in improving knowledge but also plays a significant role in shaping children's psychological understanding and behavior. From a health psychology perspective, the observed changes can be interpreted as the result of interconnected cognitive, emotional, and motivational processes.

The substantial increase in knowledge scores from pre- to post-intervention confirms the effectiveness of educational strategies in enhancing children's understanding of health concepts. This finding is consistent with previous research demonstrating that structured health education can significantly improve knowledge and awareness among school-aged children (Tejada-Gallardo et al., 2020). However, the present study extends this understanding by showing that knowledge improvement alone does not fully explain behavior change.

The qualitative findings suggest that the meaning attributed to the educational experience plays a critical role in influencing behavior. Children did not simply memorize information; rather, they began to interpret health messages in relation to their own experiences and daily routines. This process aligns with the concept of meaning-making in health psychology, which emphasizes that individuals are more likely to adopt health behaviors when they perceive them as personally relevant and meaningful (Tarrats-pons et al., 2025).

The role of visual media in enhancing engagement and comprehension also emerged as a significant factor. The use of video allowed children to observe concrete examples of healthy behavior, which facilitated understanding and retention. This supports existing evidence that multimedia-based health education can improve learning outcomes by combining cognitive and visual processing (Madigan et al., 2024). For children, who are still developing abstract thinking abilities, visual representation is particularly important in translating information into actionable understanding.

Behavioral changes observed in this study further reinforce the importance of psychological processes in health education. The participants demonstrated not only increased awareness but also a willingness to apply what they had learned. This transition from knowledge to action reflects the process of internalization, in which external information becomes integrated into an individual's value system and daily behavior (Barranca Enríquez et al., 2021). In the context of children, this process is influenced by both cognitive development and emotional engagement.

The emotional responses expressed by the participants indicate that the educational experience was perceived positively, which may have strengthened motivation to adopt healthy behaviors. Positive emotional engagement has been shown to enhance learning outcomes and support behavior change by increasing attention, interest, and intrinsic motivation (Anderson, K., & Williams, 2021). In this study, the children's enjoyment and perceived usefulness of the session contributed to the effectiveness of the intervention.

Furthermore, the findings underscore the importance of adopting a life course perspective in health psychology. Early childhood is a critical period for the formation of health-related habits, and interventions at this stage can have long-term implications for health outcomes. By influencing children's understanding and behavior early in life, health education can contribute to the development of lifelong healthy habits (Casulli, 2021).

Despite these positive findings, it is important to recognize that behavior change is a gradual process that may require ongoing reinforcement. While the immediate effects observed in this study are encouraging, sustained behavior change depends on continued support from the environment, including family, school, and community. This highlights the need for integrated health promotion strategies that extend beyond single-session interventions (P. T. Aji, Baidhowy, et al., 2026).

Overall, this study contributes to the field of health psychology by demonstrating that health education is most effective when it addresses not only knowledge but also the psychological

processes underlying behavior. By exploring children's experiences and interpretations, this research provides a more comprehensive understanding of how behavior change begins to emerge during childhood.

Implication

The findings of this study have important implications for both theory and practice in health psychology and education. From a theoretical perspective, the study reinforces the importance of meaning-making and psychological engagement in the process of behavior change. Health education should not be viewed solely as a means of delivering information, but as a process that facilitates cognitive understanding, emotional connection, and personal relevance.

From a practical perspective, the results suggest that health education programs for children should incorporate interactive and visually engaging methods to enhance comprehension and retention. The use of multimedia, combined with simple and relatable explanations, can significantly improve the effectiveness of educational interventions. In addition, encouraging children to reflect on their learning experiences can help strengthen the internalization of health messages.

The study also highlights the need for sustained and context-based interventions. Schools, families, and communities should work collaboratively to reinforce healthy behaviors and provide consistent support for children. By creating an environment that supports health-promoting behavior, the impact of educational interventions can be extended beyond the classroom.

Limitation

This study has several limitations that should be considered when interpreting the findings. First, the small number of participants limits the generalizability of the results. As a qualitative case study, the primary aim was to provide an in-depth understanding rather than a broad generalization; however, future research with larger samples is needed to validate and extend these findings.

Second, the duration of the intervention and observation period was relatively short. While immediate improvements in knowledge and behavior were observed, the study did not examine the long-term sustainability of these changes. Longitudinal studies are recommended to explore whether the observed behavioral improvements are maintained over time.

Third, the study relied on a combination of self-reported data and observation, which may be influenced by participant bias or situational factors. Although efforts were made to ensure data triangulation, future studies could incorporate additional measurement tools to enhance reliability.
Despite these limitations, the study provides valuable insights into the psychological processes underlying health behavior change in children and offers a foundation for further research in this area.

CONCLUSION

This study demonstrates that health education plays a significant role not only in improving children's knowledge but also in shaping their psychological understanding and health-related behavior. The findings reveal that the effectiveness of health education is closely linked to how children interpret and assign meaning to the learning experience. From a health psychology perspective, behavior change among primary school children is not merely the result of information acquisition, but rather a dynamic process involving cognitive understanding, emotional engagement, and motivational internalization.

The increase in knowledge scores indicates that the educational intervention successfully enhanced children's awareness of clean and healthy living behavior. However, the qualitative findings provide deeper insight by showing that children began to perceive health practices as

personally relevant and meaningful. This meaning-making process contributed to observable behavioral changes, including increased willingness to practice hygiene, improved awareness of daily habits, and more positive attitudes toward health behavior.

This study highlights that meaningful learning experiences are essential for fostering sustainable behavior change in children. Health education that is interactive, visually engaging, and contextually relevant can support not only cognitive development but also psychological readiness to adopt healthy behaviors. These findings contribute to the development of health psychology by emphasizing the importance of integrating cognitive, emotional, and experiential aspects in health promotion strategies for children.

In conclusion, health education should be designed as a psychologically meaningful process rather than solely an informational activity. By addressing how children perceive, understand, and internalize health messages, educational interventions can more effectively support the development of lifelong healthy behavior.

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