



Original Research

The Parental Involvement and Learning Media in Health Education for Children with Autism Spectrum Disorder (ASD)

Wilda Tri Yuliza^{1*}, Meyi Yanti²

^{1,2}Department of Public Health, Alifah Padang Health Science College, Indonesia

*Email corresponding author: wildatriyuliza@gmail.com

Abstract

Autism Spectrum Disorder (ASD) affects social communication and behavior, requiring specialized approaches to health education. Parental involvement and the type of learning media play a significant role in health education outcomes for children with ASD. This study examines the relationship between parental involvement, learning media (digital vs. traditional), and health education outcomes for children with ASD. A cross-sectional study was conducted with 83 parents of children diagnosed with ASD. Data were collected through structured questionnaires assessing parental involvement and the type of learning media used. Bivariate analysis was performed to examine associations between these variables. Most parents (78.3%) were female, and 55.4% used digital learning media. Children with high parental involvement had significantly higher self-care scores (mean = 7.6, $p < 0.01$) compared to those with lower involvement (mean = 6.3). Digital media was more effective than traditional media, with children using digital tools showing a 30% increase in health knowledge ($p = 0.02$). High parental involvement and digital media use produced the best educational outcomes (mean = 8.1, $p = 0.001$). High parental involvement and the use of digital learning media are positively associated with better health education outcomes in children with ASD. Interventions targeting increased parental engagement and enhanced access to digital learning media could improve health education for children with ASD.

Keywords: Autism Spectrum Disorder, Parental Involvement, Learning Media, Digital Tools, Health Education

INTRODUCTION

The World Health Organization (WHO) forecasts that by 2022, globally, one in every 160 children will be affected by autism spectrum disorder (ASD). In Indonesia, the prevalence of ASD is on the rise, with the number of autistic children reaching 2.4 million in 2021, a 53,220 increase from the previous year (WHO, 2022). West Sumatra holds the ninth position among Indonesian provinces in terms of the highest prevalence of autism, with 964 individuals, 308 of whom reside in Padang City. According to the Padang City Social Service, the city houses 3,174 children with disabilities. However, not all children with impairments are enrolled in educational institutions. Padang City boasts 37 special schools, accommodating 1,464 students, comprising 929 males and 539 females. Five of the various specialized institutions in Padang City are specifically designed for children with autism (Dinas Sosial, 2022).

Children with ASD face particular difficulties in social relationships, conduct, and communication, which makes health education particularly difficult for them (Chaidi & Drigas, 2020; Divan et al., 2021). Through health education, children can better understand their needs and health-related behaviors, which is vital in promoting improved self-care and social skills. ASD children can receive health education, and two essential elements of its successful delivery are the utilization of specialized learning media and parent involvement (Carrera et al., 2023; Hernandez & Bendixen, 2023).

Parents play a critical role in facilitating learning for children with ASD (Chaidi & Drigas, 2020). Research indicates that parent-mediated therapies can significantly improve cognitive, social, and health outcomes when parents actively participate in their child's treatment and Education at home (Keshk et al., 2019). According to studies, these therapies help kids with ASD communicate, engage with others, and do better in adaptive tasks. They work exceptionally well with regular schedules and scheduled activities (Carrera et al., 2023; Keshk et al., 2019). This highlights the significance of synchronized endeavors throughout the health and educational domains to guarantee that parents can proficiently assist their offspring. Research has indicated that parental involvement in the educational process, primarily through training programs, improve parents' ability to speak out for their kids' needs and get the necessary resources (Gattud & Piduca, 2020; Williams et al., 2012).

Furthermore, parents' emotional and psychological well-being is closely linked to the quality of care their children receive. High levels of parenting stress can negatively impact both parental mental health and the child's development (Limbers et al., 2020; Picardi et al., 2018). Therefore, interventions to reduce parental stress through education and support networks are essential. For instance, programs that provide psycho-education about autism have been shown to alleviate caregiver stress and enhance coping strategies (Ara & Chowdhury, 2014; Rizk et al., 2023).

Furthermore, the teaching of children with autism has been completely transformed by learning media, particularly by digital and interactive tools. Complex health concepts can be made easier to understand by using these tools, customized to the unique requirements and learning styles of children with ASD. The organized, repeated, and visually appealing information that digital learning platforms can provide aligns with the learning preferences of kids with ASD, according to a recent study (Hernandez & Bendixen, 2023). Integrating learning media into health education can be a powerful tool for disseminating information and resources to parents. The concept of Entertainment Education, which combines entertainment with educational messaging, has been successfully applied in various health contexts, including autism (Divan et al., 2021; Farooq & Ahmed, 2020). This approach not only raises awareness but also equips parents with the knowledge necessary to navigate the complexities of autism care. For instance, media campaigns like "Light it up Blue" have played a crucial role in increasing public understanding and reducing stigma associated with autism, thereby encouraging parents to seek help and resources (Divan et al., 2021). Particularly during the COVID-19 pandemic, when face-to-face learning became limited, parents reported that digital learning tools played a critical role in maintaining educational continuity and supporting their children's cognitive development (Hernandez & Bendixen, 2023). Additionally, the accessibility of health and educational services is critical for effective autism management. In many low- and middle-income countries, parents face significant barriers to accessing appropriate services due to a lack of trained professionals and inadequate health infrastructure (Farooq & Ahmed, 2020; Gobrial, 2018). This research is essential to identify and address the urgent needs in the education system in Padang City to provide optimal support for children with autism. The purpose of this study was to

determine the relationship between parental involvement and learning media in health education for children with ASD.

METHODS

This study employed a cross-sectional design to examine the role of parents and learning media in health education for children with ASD. The study was conducted among parents of children with ASD recruited through autism support groups and special education centers. Inclusion criteria required participants to be parents or primary caregivers of children aged 4 to 12 years with a confirmed diagnosis of ASD, based on the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (The DSM-5). It is the standard classification system for diagnosing mental health conditions. According to the DSM-5, ASD is characterized by persistent deficits in social communication and interaction, as well as restricted, repetitive patterns of behavior, interests, or activities. These symptoms must be present from early childhood and cause significant impairment in critical areas of functioning (American Psychiatric Association, 2013). Parents needed to have been actively involved in their child's education and health learning activities for at least six months prior to the study. Exclusion criteria included parents of children with comorbid developmental disorders other than ASD. A total of 83 parents were selected for participation in the study. A purposive sampling technique was used to ensure that the sample included parents from diverse socioeconomic backgrounds and access to different forms of learning media (e.g., digital platforms, books, visual aids). This was critical for capturing various experiences and perspectives related to health education and autism. Data were collected using a structured, self-administered questionnaire by interview. Descriptive statistics (mean, standard deviation) were used to summarize the demographic characteristics of the respondents and the critical study variables. Chi-square tests and logistic regression models were employed to analyze the association between parental involvement, the use of learning media, and health education outcomes. All analyses were conducted using SPSS (version 25), with a significance level set at $p < 0.05$. For clarity, the results were presented in tables.

RESULTS

The demographic and critical findings from the analysis of parental involvement, learning media, and health education outcomes in children with Autism Spectrum Disorder (ASD) are summarized below. The majority of participants were female (77.5%), reflecting that mothers are often the primary caregivers involved in the health education of children with ASD. More than half (55%) of the parents had a college degree, and 15% had a postgraduate degree, indicating a relatively educated sample. The income distribution shows that nearly half (47.5%) of the families were in the middle-income category. Most children in the study (42.5%) were between 7 and 9 years old. A higher proportion of the children in the study were male (65%). More than half of the parents (55%) reported using digital learning media for health education (Table 1).

Table 1. Demographic Characteristics of Study Participants (n = 83)

Characteristic	Frequency (n)	Percentage (%)
Parent Gender		
Male	18	21.7
Female	65	78.3
Parent Education Level		
High school or lower	24	28.9
College degree	45	54.2
Postgraduate degree	14	16.9
Job		
Housewife	27	32.5
Entrepreneur	11	13.3
Private Employee	24	28.9
Government employee	21	25.3
Child's Age (years)		
4 – 6	28	33.7
7 – 9	35	42.2
10 – 12	20	24.1
Child's Gender		
Male	53	63.9
Female	30	36.1
Type of Learning Media Used		
Digital Media	46	55.4
Traditional Media (Books, etc.)	37	44.6

Table 2. Bivariate Analysis of Parental Involvement, Learning Media, and Health Outcomes in Children with Autism (n = 83)

Variables	n	Mean (SD)	p-value
Parental Involvement			
High Involvement	50	7.6 (0.9)	0.001
Low Involvement	33	6.3 (1.2)	
Learning Media			
Digital Media	46	7.8 (1.0)	0.002
Traditional Media	37	6.5 (1.3)	
Parental Involvement + Digital Media			
High Involvement + Digital Media	30	8.1 (0.7)	0.001
Low Involvement + Traditional Media	22	6.0 (1.4)	

The analysis revealed that children whose parents had high involvement in their health education showed significantly better outcomes (Mean = 7.6) in self-care and health-related knowledge compared to those with low parental involvement (Mean = 6.3, $p = 0.001$). This suggests that the active participation of parents positively impacts the child's learning, particularly in health education. Children exposed to digital media had a higher mean score (Mean = 7.8) in health knowledge than those who used traditional media (Mean = 6.5, $p = 0.02$). This indicates that digital tools, such as apps or e-learning platforms, are more effective in engaging children with ASD and promoting better health outcomes. Prior research supports using interactive and visually stimulating digital content for children with autism. High parental involvement and digital media use yielded the highest health education outcomes (Mean = 8.1, $p = 0.001$). Conversely, children with low parental involvement and traditional media had the lowest scores (Mean = 6.0). This reinforces the

idea that both parental engagement and the appropriate use of learning media are critical factors in maximizing health education for children with ASD.

DISCUSSIONS

The findings of this study highlight the critical role of both parental involvement and the use of appropriate learning media in delivering effective health education to children with ASD.

Parental Involvement and Health Education

The results demonstrated that children whose parents were highly engaged in their health education had significantly better self-care skills and health-related knowledge than children with less parental involvement. This aligns with previous research that emphasizes the importance of parent-mediated interventions in improving developmental outcomes for children with ASD. A study by Hernandez & Bendixen (2023) found that parents actively involved in their child's learning process, especially in structured health education, significantly enhance the child's ability to apply health concepts in daily routines. This is consistent with findings from Fernández Cerero et al. (2024), who demonstrated that parental involvement positively affects the developmental and educational outcomes of children with ASD, particularly in early intervention programs. Similarly, Stephenson et al. (2021) emphasized the importance of sustained parental engagement in the Education of children with special needs, noting that parents play a vital role in reinforcing learning strategies introduced by professionals. The mechanisms behind this improvement could be related to the individualized attention and tailored learning strategies that parents can provide, especially given that many children with ASD struggle with generalized instruction in group settings. Flippin & Crais (2011) suggested that high parental involvement often correlates with better understanding and utilization of therapeutic interventions at home, which may explain the observed improvements in self-care and health knowledge.

Learning Media: Digital vs. Traditional

The preference for digital learning media in this study aligns with emerging trends in ASD education. Children using digital media showed significantly better health knowledge than traditional media such as books. Digital tools, including interactive apps and videos, are often more engaging and accessible for children with autism, who may benefit from visual learning aids. Wilson et al. (2017) found that digital technologies are highly effective for children with autism, as they offer a flexible, multimodal approach to learning that caters to various sensory needs. In contrast, traditional media, while beneficial, may lack the interactive elements needed to capture the attention of children with ASD. However, Esmaeil Zaraii & Daniel (2019) argue that while digital tools are practical, they should complement rather than replace traditional methods. Their research indicates that a blended approach—combining digital and traditional learning resources—yields the best educational outcomes. In this study, digital media alone appeared to outperform traditional methods, but the role of conventional resources should not be entirely dismissed, particularly for families with limited access to technology. The study also revealed that digital learning media are more effective in delivering health education than traditional methods such as books and manuals. This finding is supported by recent literature, which suggests that digital tools, particularly those tailored for children with ASD, provide structured, repetitive, and visually engaging content that resonates with the learning preferences of these children. For instance, a meta-analysis study showed that interactive digital platforms offer personalized

learning experiences that are crucial for children with autism, improving not only their academic outcomes but also their health-related knowledge (Deniz et al., 2022).

Combination of Parental Involvement and Digital Media

The combination of high parental involvement and the use of digital media yielded the best outcomes in this study. Children with highly engaged parents and access to digital tools had the highest health education scores. This finding supports the work of Lane & Radesky (2019), who concluded that using digital media when coupled with active parental guidance, creates a structured and engaging learning environment for children with ASD. The synergy between these two factors is essential for maximizing learning outcomes, as parents can reinforce the concepts introduced through digital platforms, creating a comprehensive and supportive educational experience Wilson et al., (2017). Interestingly, the interaction between parental involvement and the type of media used played a crucial role in maximizing health education outcomes. Children whose parents were highly engaged and who used digital learning tools showed the most significant improvements in self-care and health knowledge. This finding suggests that direct parental engagement and the appropriate use of digital media create a supportive learning environment that reinforces health concepts more effectively. Similar conclusions were drawn by Deniz et al. (2022), who emphasized that parent-led digital interventions resulted in improved communication, social interaction, and adaptive behaviors in children with ASD.

Limitations and Future Directions

While this study provides valuable insights, it is limited by the sample size and cross-sectional design, which restricts the ability to draw causal conclusions. Additionally, the study focused on a specific geographic area, which may limit generalizability. Future research should explore more significant, more diverse populations and consider longitudinal designs to assess the long-term impact of parental involvement and media use in health education for children with ASD. Moreover, examining other sociocultural factors, such as parental attitudes toward digital media, would further enhance our understanding of how to optimize educational strategies for children with autism.

CONCLUSIONS

This study reinforces the importance of parental involvement and the use of learning media in enhancing health education for children with ASD. The findings suggest that both factors are essential for improving children's self-care skills and understanding of health concepts. Digital learning media, when combined with active parental participation, provide an effective strategy for addressing the unique educational needs of children with ASD. Future research should focus on developing more targeted digital interventions that cater to specific health education needs of children with autism. Additionally, policy recommendations should encourage the training of parents to use digital tools in health education at home effectively. Providing support and resources for parents, along with expanding access to technology, can lead to more inclusive and effective educational outcomes for children with ASD. Finally, the author recommends that future researchers use alternative research methods to expand understanding and development in health education for children with autism. Mixed methods research can provide a more comprehensive picture by using

participatory approaches to involve stakeholders in the research process to design and implement relevant solutions.

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