

Health Behavior of Children with Autism in Indonesia

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Abstract

Background: The number of children with autism in Indonesia is believed to keep increasing, but the studies on children with autism are limited. This study aimed to assess the health behavior covering knowledge, attitude, and practice among children with autism.

Subjects and Method: The participants were Year 4 to Year 8 students of a special school for children with autism in Yogyakarta, Indonesia. The health behavior of children with autism was assessed using a questionnaire. In-depth interviews with teachers and parents were conducted to complement the data collected from the children with autism.

Results: Thirteen children participated in this study. They were ten boys and three girls aged between 11-17 years. Data showed that some children did not have proper knowledge, but they had the right attitude and behavior related to healthy lifestyle. The questionnaire showed sleep problem was commonly found in the children. Interviews with three teachers and two parents revealed the importance of continual training children with autism from young age to develop good health behavior.

Conclusion: Children with autism can have good health attitude and practice, despite their limited knowledge.

Keywords: *knowledge, attitude, health behavior, children, autism.*

Introduction

Autism Spectrum Disorder (ASD) is a complex developmental disorder of a child's brain function that manifests in impaired communication and interaction, repetitive behavior, impaired non-verbal communicative behavior, and problems in developing, maintaining and understanding relationships¹. The term spectrum describes the varied symptoms, impairment and disability. This spectrum creates the problem to identify children with autism.

There is no data of number of children with autism in Indonesia, but it is believed that the number of cases

has increased². There has been relatively few studies on children with autism in Indonesia³.

Health behavior is a combination of health knowledge, attitudes, and practice that underlie actions taken by individuals regarding their health. The Ministry of Health developed guidance for health behavior called *Perilaku Hidup Bersih dan Sehat*, (PHBS = Clean and Healthy Lifestyle)⁴. It is aimed to build healthy households throughout the Indonesian community.

Healthy lifestyle must be practiced by everyone, including those with autism. There are numerous reports on the health behavior of students without disability^{5,6,7}, but fewer research on the health behavior of children with disability^{8,9}.

This is the first study on the health behavior of children with autism, aiming to assess the knowledge, attitude and behavior of children with autism.

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Methods

This study collected data from all Year 4, 5, 6, 7 and 8 students of Bina Anggita Special School for children with autism in Yogyakarta.

The knowledge, attitude and practice of healthy lifestyle were assessed using a questionnaire. The questionnaire was from a study assessing the healthy lifestyle of primary and junior high school students¹⁰, that has 36 questions divided into three parts: 12 multiple choice questions on knowledge, 12 statements to agree or disagree on attitude and 12 multiple choice questions on behavior. The maximum and minimum scores are 36 and 12 for each section. Interviews with three teachers and two parents were also conducted.

Univariate analysis was performed on questionnaire data. Interview data was used to complement findings from the questionnaire.

Ethical clearance was obtained from the Committee of Health Research Ethics, Faculty of Medicine,

Universitas Kristen Duta Wacana, Yogyakarta, Indonesia.

Results

Thirteen children with autism participated in this study. There were ten boys and three girls aged 11–17 years. Data were collected by interviewing each child individually to fill in the questionnaire. Communication was a challenge, so besides verbal communication, the researcher used many aids like pictures or real utensils, such as soap, toothbrush to obtain answers to the questions in the list.

Health Knowledge

The scores ranged from 24 to 34 with a mean and standard deviation of 30.85 ± 3.11 . A further analysis was conducted to investigate each question to find out which questions had high percentage of children who answered correctly, as presented in Table 1.

Table 1. Questions and percentage of children with correct answer to questions on health knowledge

No	Questions	Percentage of children with correct answer
1.	The importance of handwashing using soap	85
2.	Showering frequency in one day	100
3.	The importance of brushing your teeth	77
4.	Frequency of brushing teeth in a day	94
5.	Time to wash hands using soap	54
6.	Long and dirty nail's relation to worm	31
7.	Causes of stomachache	62
8.	Definition of balanced nutrition	69
9.	Healthy toilet criteria	54
10.	The place to throw garbage	85
11.	Reasons for hair washing	62
12.	The importance of sleeping	23

There were 11 of 12 questions on knowledge that were not fully answered correctly. Three children did not know that soap was used to remove germs and dirt. Three children thought toothbrushing was aimed only to have good mouth and breath odors. Six children answered that they washed their hands only after eating, not before eating and after defecating and urinating. Only four children knew the connection between long and dirty nails with worm invasion. Some children answered balanced foods were those that could cause satiety. Some children answered they could throw away garbage

to the river. Some children thought that hair hygiene was aimed only to keep hair from lice. The question on the function of sleep received the highest percentage of wrong answer (76.92%). A lot of respondents thought that sleep was aimed to relieve sleepiness.

Health Attitude

The respondents' scores ranged from 30 to 36 with a mean and SD of 33.62 ± 2.06 for attitude. An analysis on the answers to each question was conducted and presented in Table 2.

Table 2. Questions and percentage of children with correct answer to questions on health attitude

No	Questions	Percentage of children with correct answer
1.	Agree / not on eating vegetables and fruits every day	100
2.	Agree / not that nails must be clean and cut short	92
3.	Agree / not on washing hands before eating	100
4.	Agree / not washing hands with soap after bowel and bladder emptying	100
5.	Agree / not to use soap for showering	100
6.	Agree / not to wash the hair using shampoos	92
7.	Agree / not that people should change clothes once every two days	62
8.	Agree / not that rubbish to be stacked in the yard of the house	100
9.	Agree / not that children sleep <8 hours a day	62
10.	Agree / not that exercise decreases body fitness	69
11.	Agree / not if people smoke in the room	92
12.	Agree / not to brush teeth once a day	100

Half questions on health attitude were answered correctly by all respondents. One child did not agree that fingernails should be kept clean. One child did not agree that hair should be washed using shampoo. Some children agreed that clothes should be changed once

every two days. Some children had difficulty in sleeping, so they agreed that good sleep was less than 8 hours. Some children agreed that exercise could decrease body fitness because they became tired when exercising. One child agreed that people could smoke in the room

because he did not understand the bad effects of smoking.

Health Practice

The health practice scores ranged from 28 to 36 with a mean and SD of 33.31 ± 2.20 . The children's answers to each question were analyzed and the results are found in Table 3.

Table 3. Questions and percentage of children who provided correct answers to questions on health practice

No	Questions	Percentage of children with correct answer
1.	Where to throw garbage	100
2.	Shower frequency in a day	92
3.	How often do you wash your hands with soap	92
4.	The frequency of tooth brushing in a day	92
5.	How to clean hair	85
6.	Frequency of eating vegetables in one week	77
7.	Frequency of eating fruit in one week	38
8.	Length of sleep in one day	54
9.	Place for defecation and urination	100
10.	Change clothes every day	100
11.	Wash hands with soap after bowel and bladder	77
12.	Frequency of exercise a week	62

Three of 12 questions on the health behavior of children with autism were answered correctly by all children. One child took a shower only once a day because he was too lazy to take a shower twice a day. Another child did not use soap in hand washing because he did not see the benefit of using soap. A child brushed teeth once a day because he was too lazy to brush teeth more often. Some children ate vegetables only once to three times a week because they did not like vegetables, and there were children who never consumed fruits as they did not like fruits. Some children slept less than eight hours and some did not sleep at regular time. They said that they could not sleep or were still occupied with something they liked. Some children washed hands after bowel movements and urination, but not before and after eating. Some children rarely exercised because they

were tired of the activities.

Interview with teachers

Three teachers were interviewed. They said that children with autism had to practice healthy lifestyle at a very young age so that they would automatically do it. They also asked parents to assist their children in developing healthy lifestyle. The teachers thought that children with autism needed supervision as despite their age, some children with autism did not realize the danger of some activities, i.e. burning garbage. Some children refused assistance in the implementation of healthy lifestyle. According to the teachers, the students with autism had reasonably good healthy lifestyle.

Interview with 2 parents:

In this study, two parents were interviewed. The first mother said that her health behavior was not as good as when the child was younger. Although the child understood the importance of healthy lifestyle, he was reluctant to practice it. There was rejection from the child when the parents wanted to help the child. The first mother had difficulty in communication with her son, so she trained her son to have healthy lifestyle since the boy was young. She made a daily schedule for her son to do daily activities, so that the child developed routine activities, including developing healthy lifestyle.

The second mother said that her child still had difficulties in practicing healthy lifestyle. The child received help from the mother when taking a shower and needed guidance when washing hands. However, the boy was diligent in brushing his teeth and eating balanced foods even though he did not like fruits very much. The child was happy to change clothes every day and did exercise regularly. According to the second mother, her son's healthy lifestyle was quite good and not different from that of his sister without autism.

Discussion

There were more boys than girls with autism in this study. It is a common finding that there are more males than females diagnosed with Autistic Spectrum Disorder^{11,12}.

The age of the respondents did not correlate with their school year. There were older students in lower grade, and younger children in higher school years. This finding indicates variability in chronological age and mental age especially related to academic achievement, as reported by other researchers. There is great variance in the intellectual capacity among children with autism.

Some respondents did not provide the correct answers to some questions in the knowledge, but they gave correct answers to the related questions in the attitude and practice sections. This finding suggests the success of the teachers and parents to develop good habits despite the children's limited understanding about healthy lifestyle. A number of studies report challenges in educating children with autism, especially managing children's behavior and communicating effectively¹³.

Despite those difficulties, the teachers and parents were able to train the children to have good healthy lifestyle. Continual teaching and training will result in good habit¹⁴.

Although some children with autism did not have proper knowledge, they had good attitude and practice related to healthy lifestyle. There was a possibility that children with autism had good attitude and practice without really understanding the reason behind it. They practiced behavior lifestyle not because they knew the reason for doing it, but because of habits trained by parents and teachers. This was not an easy task for parents. A study reported barriers for parents to develop healthy habits for their children with neurodevelopmental disorders included autism were limited parents' resources, child resistance or behavior related to their neurodevelopmental disorder, lack of supportive program, and medication side effects¹⁵. Despite the barriers, the parents of the children with autism participating in this study were able to train their children to practice healthy lifestyle.

There was one interesting finding regarding the question about sleep, many respondents did not provide the right answer in knowledge, attitude and behavior sections. Sleep problem has been reported to be more commonly found in children with autism^{16,17,18}. A study reported that children with autism had low levels of the hormone melatonin, a hormone that was required for the regulation and maintenance of sleep¹⁹.

The in-depth interviews with parents and teachers revealed that some children with autism did not have the initiative to ask for help when they were not able to implement the healthy behavior and some children refused other people's help when they have difficulties in conducting the healthy lifestyle. Those behaviors were examples of "resistance to change", they wanted to do it their way. "Resistance to change" is one of the core symptoms found in autism²⁰. There are interventions suggested to overcome this problem, including behavioral interventions and food selection^{21,22,23}.

Conclusion

Children with autism can develop healthy lifestyle. There is a discrepancy between knowledge, attitude and practice. Despite limited knowledge, children with

autism have good attitude and practice.

The limitation of this research was the small number of respondents and that it was carried out only in one school.

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Conflict of Interest - Nil

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