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Early development process of drama and storytelling scripts as media for nutrition education on balanced diets among elementary school children

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ABSTRACT

Introduction: The Indonesian Guide on Balanced Nutrition endorsed in 2014, needs to be more widely publicised. One way is to use fun learning methods such as drama and storytelling, especially in schools. This study aimed to develop drama and storytelling scripts for educating students on balanced nutrition. **Methods:** Sixteen focus group discussions (FDGs) with thematic activities were conducted among 96 mother-child pairs in four elementary schools. The mothers' age ranged from 30-50 years and the children 9-13 years. In-depth interviews were conducted with eight teachers (two from each participating school). The FDGs and interviews were designed to elicit information on knowledge and implementation of balanced nutrition guidelines at three levels, namely intrapersonal (students), family (mother) and environment (school teacher). Content analysis was used to identify relevant themes, which were developed into scripts for drama and storytelling. **Results:** The students, mothers, and teachers were not familiar with the general guidelines for balanced nutrition. The lack of variety of the food provided at home was reported. The draft scripts were discussed and modified for accuracy of the nutrition messages that were applied in character dialogues, song lyrics, dramas and storytelling. **Conclusion:** Storytelling and drama are effective for use by teachers and mothers for delivering nutrition messages in schools and the home.

Keywords: Drama, storytelling, nutrition education, elementary school students, Indonesia

INTRODUCTION

The rising prevalence of obesity in children and adolescents has become a critical global health challenge (Wijlaars *et al.*, 2011). In Indonesia, the double burden of obesity and malnutrition are challenging important public health

issues. While undernutrition still exists, the prevalence of childhood and adolescent obesity has emerged as a health concern. It was estimated that among children aged 5-12 years, 10.8% were overweight and 8.8% obese (MOH Republic of Indonesia, 2013).

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Dietary practices and physical activity are key modifiable risk factors that are related to the development of non-communicable diseases. Poor food choices and physical inactivity contribute to problems during childhood and adolescence, such as behavioral problems at school, emotional problems, low academic performance, as well as short-term and long-term health problems (Sahoo *et al.*, 2015). Type 2 diabetes (Bacha & Gidding, 2016), heart diseases (Cote *et al.*, 2013), and psychological health (Beck, 2016) are becoming more common in younger adults as a result of the rise in obesity and overweight.

Schools are a proven effective and efficient environment in which to reach out to most children of school-going age from diverse ethnic and various socioeconomic backgrounds (Van Cauwenbergh *et al.*, 2010). Since schools have the potential to reach and interact with children intensively and continuously, educators and health professionals have identified schools and teachers as having important roles in public health education and health promotion interventions for the prevention of obesity (Calvert, Robert & Rachel, 2019). In addition, Institute of Medicine (IOM) (2012), USA, has suggested five critical areas where schools can act as agents of change. Schools could be the focal point of activities for the mitigation of obesity among children. They may do so by providing physical education and opportunities for physical activities, by ensuring healthy nutritional standards for all food and beverages that are sold or provided there and by providing education in nutrition.

Nutrition education should become an integral part of the school curriculum for elementary school children. Implementing nutrition education is a convenient strategy for influencing children's knowledge of nutrition and

eating practices (Evans *et al.*, 2016). The provision of specific nutrition education has been shown to have multiple benefits, such as the increased likelihood of children having healthy habits at an early age (Wall *et al.*, 2012). These included a decreased risk of obesity among elementary students (Fairclough *et al.*, 2013), an improved cognitive development with a potential to decrease behavioral outbursts in an educational setting (Ickovics *et al.*, 2014), an increased knowledge of nutrition, and decreased body mass index (BMI) and waist circumference amongst elementary students (Fairclough *et al.*, 2013, Evans *et al.*, 2016, Jarpe-Ratner *et al.*, 2016, Wall *et al.*, 2012).

Indonesia has had a variety of programmes for school called the Schools Health and Nutrition programmes (SCN). These have included the *Usaha Kesehatan Sekolah* (UKS, Schools Health Initiative), programmes for water and sanitation at school, basic health center (*puskesmas*), feeding in schools, and other school-based health services provided by non-government organization (Del Rosso & Rina, 2009). Indonesia has had dietary guidelines for the general population, including children. The publication of nutrition messages started in 1950s with the slogan "Four Healthy Five Perfect" (locally known as "*empat sehat lima sempurna*"), which promoted the consumption of staple foods, protein-source foods, vegetables, and fruits, as the "four healthy" food items, and drinking milk for the "five perfect". A study covering 132 elementary school children found that 90% stated that a balanced diet was the "Four Healthy Five Perfect" guideline (Achadi *et al.*, 2010). Over time, new knowledge and facts in nutrition led to the Indonesian government to publish the "Guide to Balanced Diet" in 2014 (MOH Republic of Indonesia, 2014). This publication

included following messages: consume a variety of food, keep clean, exercise regularly, and monitor body weight.

Campaigns on balanced nutrition for children can be delivered through various educational media. However, the challenge is to identify the most effective methods to promote healthy lifestyles to children. The use of storytelling drama, theatre and role-playing are useful methods for health promotion and education. These methods stimulate creativity and critical thinking (Sanchez, Zam & Lambert, 2009). Educational drama emphasizes learning through the dialectics between actual and fictional contexts (Joronen, Rankin & Astedt-Kurki, 2008). This study describes the process used for identifying themes and developing scripts for drama and storytelling for educating elementary school children on balanced nutrition.

MATERIALS AND METHODS

Data collection and procedures

A qualitative research strategy, called phenomenology, was used to gain insight and understanding about the knowledge and practice of balanced nutrition. "Phenomenology attempts to understand the emotions, attitudes, thoughts, meanings, perceptions, and bodily experiences of people, as or after they have experienced a phenomenon" (Harris *et al.*, 2009). Focus group discussions (FGDs) were used to elicit the personal perceptions of a defined area of interest of the respondents through carefully planned, semi-structured and interactive discussion (Flynn, Lauren & Shannon, 2018). Following the ecological model for promoting healthy eating habits in children, the focus groups were organised at three levels that influence the eating behaviour of children, namely, the individual (school children), the family (mother), and the school (school teacher). This approach was

important for developing comprehensive promotional and educational materials (Parvanta *et al.*, 2011).

Four elementary schools of which two were private and two governments were chosen for their sociodemographic diversity. One each of the private and government schools were located in Palembang City, while the remaining private and urban government schools were located in a rural area, called the Pemulutan and Ogan Ilir Regency.

The FGD participants were mother-child pairs. They were selected using a classroom student list to yield a purposeful sample. Access to the boys and girls in the fourth and fifth grades and their mothers, was facilitated by the teachers and the school principal. The participants who were chosen represented a range of sociodemographic backgrounds with respect to age, education level, and occupation of the mothers. Additionally, an in-depth interview was conducted with eight relevant classroom teachers; they were two from each participating school, one from fourth grade and one from fifth grade classroom teacher.

The FDGs and in-depth interviews were conducted at each school based on schedules agreed among school teachers, mothers, and study investigators. The FDGs among children and the mothers were held on the same day in different rooms, and were each led by a member of the research team. The FGD sessions for fourth grade children and their mothers were held in the morning while that for fifth grade children and their mothers after lunchtime. Each FDG lasted approximately 45-60 minutes.

The FDGs were conducted in a manner that allowed spontaneous discussion among students with the study investigators acting as observers and facilitators. They were designed as a thematic activity. The theme for

each activity was intended to explore the knowledge and practice of balanced nutrition, physical activity, learning methods, and hobbies of the students (Table 1).

In order to facilitate sharing during the FGD, photographic prints of foods and activities taken at various locations, and a Styrofoam board and pins, were given to each student. The photographs of snack foods were obtained after face-to-face surveys of the school canteen and food vendors around the schools. Those of staple foods, animal proteins, vegetables, and fruits were obtained from traditional markets and food vendors around the schools. The photographs of outdoor activities, such as traditional games, were obtained from interviews

with community members around the school while those of indoor activities were obtained from interviews with students of other elementary schools with similar characteristics. Students were asked to choose photographs of food and activities based on the FGD theme, pin them on the Styrofoam board and, then, to continue with discussion. Similar FGDs with the mothers were conducted, as described in Table 2.

In-depth interviews with classroom teachers were also conducted in each school after school hours. Teachers were asked about their knowledge of the balanced nutrition guide, the school's efforts to support healthy lifestyle among students, and the school's commitment to implementing a healthy environment

Table 1. Activities during focus group discussions among elementary school students

<i>Sequence of activity</i>	<i>Description</i>
First activity: Setting my food plate photograph	Students were asked to (i) arrange food photographs of what they ate for breakfast, lunch, and dinner one day before the FGD; (ii) to discuss their eating habits, including breakfast habits, fruit and vegetable consumption, and (iii) hygiene practices.
Second activity: Grouping photographs based on like and dislike	Students were asked to explain why they liked or disliked certain foods.
Third activity: Grouping photographs based on healthy and unhealthy foods	In this activity, students were asked to explain their rationale for grouping the photographs and the effect(s) of such foods on their health.
Fourth activity: Collection of photographs of activities performed and grouping them as often- or seldom-performed.	Students were asked to explain the reasons for performing some activities more frequently than others. During this session, the learning methods, hobbies, and favourite cartoon characters of the students were also identified.
Fifth activity: Grouping the photographs based on activity levels, as active or inactive, and providing the rationale for their choices.	In this activity, students were also asked to group the photographs as active or inactive and explain the reason(s) for their choice.
Sixth activity: Sharing their thoughts on a given picture	In this activity, students were shown an illustration of a fat boy watching television while consuming unhealthy snack. They were asked to describe what they saw in the picture and how it related to a healthy lifestyle.

Table 2. Activities during focus group discussions (FGDs) among mothers of the students

<i>Sequence of activity</i>	<i>Description</i>
First activity: Setting my child's food plate photograph	In this activity, mothers were asked to group photographs of foods consumed by their children for breakfast, lunch, and dinner, one day before the FGD. In addition, the researchers explored the mothers' perception of the composition of food consumed by their children, including the habit for having breakfast, as well as the consumption of animal protein, vegetables, and fruits.
Second activity: Choosing photographs of foods liked and disliked by their children.	In this activity, mothers were asked to choose photographs of which foods were liked and disliked by their children. In this session, mothers were also encouraged to discuss the reasons of their preferences.
Third activity: Choosing photographs of physical activity	In this activity, mothers were asked to choose photographs of physical activities based on the frequency of their children's activities, i.e. how often or seldom were they performed.
Fourth activity: Discussion	In this activity, mothers were encouraged to discuss their perception and opinions of the school's roles in creating a healthy school environment and shaping their children's healthy behaviours.

(Table 3). Trained personnel transcribed all the recorded data in verbatim.

Data analyses

A content analysis approach was used to evaluate the data collected from FGDs and in-depth interviews. The field notes of the investigators, from the FGDs with the children and their mothers were collated. Some terms in the local language were translated into *Bahasa Indonesia*

(the Indonesian language) and were identified by footnotes in the transcript. We did not use specific qualitative data analysis software but were aided by Microsoft excel when analysing patterns found in each transcript. The first and second authors independently read the transcript and discussed the codes for all the comments in the FDG transcripts and grouped those that showed similar contents. Themes were extracted from

Table 3. In-depth Interview guide used to stimulate discussion with the classroom teachers

<i>No.</i>	<i>Questions</i>
1.	What do you know regarding current nutrition guidelines that are used in Indonesia?
2.	Based on your opinion, explain how the schools support students to practise healthier lifestyles. What is the school's role in developing a healthier school environment that encourages the implementation of balanced nutrition among the students?
3.	What do you think schools and parents can do to encourage healthier behaviours among students?
4.	How do the teachers and school staff support the achievement of healthy school?
5.	What is the commitment of teacher and school staff in order to achieve healthy school?

these groupings, which represented the main message(s) conveyed by the focus groups. Potential themes were manually generated from the coded data, reviewed, and then labelled by the first and second authors of the study. The review process was repeated until no new themes emerged and a consensus on them was reached.

Script preparation process

The input of the students and mothers that were obtained during the FGDs and the perceptions of the respective teachers through interview were used to identify preceived needs and barriers to healthy dietary behaviour.

The research team consulted a performance expert who was a linguistics professor at the Universitas Sriwijaya (UNSRI) and who was well known for her involvement in many traditional and cultural performances in Palembang. In addition, she was an adviser of the UNSRI theatrical community, called *Garda Anak Bangsa Indonesia* (GABI), which consisted of UNSRI students from its various faculties. The UNSRI also had professional storytellers, who were students of the Faculty of Public Health with experience in performing for children throughout Palembang. Both GABI and the storytelling teams agreed to collaborate in the study by developing scripts and subsequently performing them.

The performance expert suggested that the characters that were developed for the drama should centre around the daily lives of the children, as they were the intended audience. Based on her past experiences, she suggested that for storytelling, the use of a mythical approach for developing the plot, would be preferred by the children. She explained that listening to or watching mythical tales would create an enthusiasm among young audiences which would transform

the moral(s) of the stories into life values and the possible adoption of healthy habits. The research team discussed these suggestions from the performance expert and the themes with GABI and storytelling teams.

Ethical approval

The study was conducted according to the International Ethical Guidelines for health-related research involving humans (CIOMS, 2016). The Ethics Committee of the Faculty of Medicine, Sriwijaya University approved the study. The local authorities and the Ministry of Education also gave written approvals which were then forwarded to selected schools. Written informed consent was obtained from parents (mothers) and teachers before the conduct of the study.

RESULTS

Between April-May 2017, the research team conducted eight FGD sessions with 96 mothers, eight FGD sessions with 96 students, and in-depth interviews with eight teachers. Each FGD comprised six participants. Table 4 shows the characteristics of the participants. The FGDs and in-depth interviews were conducted in the local language and were recorded after written consent from all the participants. The findings from these activities are reported under the following major topics. In addition, we also describe the development and production of drama and storytelling.

Findings from the exploratory study

Nutrition knowledge

In all the FGDs, the most of the children from urban areas could identify and distinguish, with an explanation, between healthy and unhealthy foods, by grouping the pictures provided by the research team.

Table 4. Description of the characteristics of the FGDs participants.

Description	Rural setting		Urban setting	
	Private school 1	Government school 1	Private school 2	Government school 2
Students				
Number of FGDs held	2	2	2	2
Size of each FGD, n	6	6	6	6
Age, n				
9 years	0	4	4	4
10 years	6	6	3	2
11 years	5	2	4	6
12 years	1	0	0	0
13 years	0	0	1	0
Sex, n				
female	8	10	6	6
male	4	2	6	6
Mothers				
Number of FGDs held	2	2	2	2
Size of each FGD,	6	6	6	6
Age range,				
30-35 years	1	4	0	5
36-40 years	3	3	8	6
41-45 years	5	4	4	1
46-50 years	3	1	0	0
Educational attainment,				
Elementary	0	8	0	0
Junior high	0	3	1	0
Senior high	2	1	6	2
Diploma	1	0	1	3
Bachelor degree	0	0	3	6
Postgraduate degree	0	0	0	1
Occupation,				
Housewife	5	6	10	8
government officer	4	0	1	1
Others	3	6	1	3

“Colourful ice is not healthy because it contains artificial colour and sugar”
(Grade 4, Government school, urban area)

“It contains high amount of sugar”
(Grade 5, private school, urban area), and *“Fruits and vegetables*

are healthy because they contain vitamins” (Grade 4, government school, urban area)

Some students could name the vitamins contained in fruits and vegetables but could not explain their benefits.

"Orange contains vitamin C and carrot contains vitamin A" (Grade 5, government school, urban area)

"I don't know for sure what the function of vitamin C is" (Grade 5, government school, urban area)

Many children also mentioned that unhealthy foods could affect their health.

"Eating colourful ice and oily food can cause cough" (Grade 4, government school, urban area)

In contrast, many children in the rural area schools provided confusing responses in attempting to distinguish between healthy and unhealthy foods.

"Tango (brand name of chocolate wafer) is healthy food because it contains milk...milk is a healthy food"

Many children also mentioned that unhealthy foods could affect their health.

"Don't eat candies and chocolate too much...it can cause toothache" (Grade 5, private school, rural area)

The slogan "Four Healthy Five Perfect" was widely known and continues to be remembered by most mothers from both urban and rural areas. However, many were unaware of the latest Indonesian guidelines for balanced nutrition.

"I just remember slogan Four Healthy Five Perfect" (mother, urban area)

"I am not familiar with the new guidelines" (mother, rural area)

The nutrition knowledge many mothers was still based on the old slogan.

Food variety

Even though the students could differentiate between healthy and unhealthy foods, the food-plate pictures showed that, in practice, most children ate unhealthy foods quite regularly, both at school and at home. When asked to name their favourite food, the majority mentioned snacks such as chips, ice cream, chocolates, fried meatballs, sausages, and other snacks, because they tasted good and were savoury.

"I bought pop ice and chocolatos at school (pop ice is an instant drink that comes in multiple flavours and contains an artificial sweetener; 'chocolatos' is sugary snack in a form of chocolate roll stick)" (Grade 4, government school, rural area)

Many children reported that their daily meals consisted of carbohydrate and protein as the main items while fruits and vegetables were often absent.

"I ate white rice, milk, and squid for lunch" (Grade 5, private school, urban area)

"My mom only cooked rice and fish for breakfast" (Grade 4, private school, rural area)

"I ate rice with instant noodles and eggs for dinner" (Grade 5, government school, urban area)

"Last night I ate rice and fried chicken" (Grade 5, government school, urban area)

In FGDs held in the rural areas, most mothers mentioned the limited availability of fruits and vegetables, and to find more variety, they had to go to fresh-food markets which were located quite far from their home.

"I buy fruits and vegetables from the seller who comes to our village every day by motorcycle but fruits and vegetables that he brings are limited" (household mother, rural area)

"Rice is the first food that I buy before fish or vegetables" (government officer, rural area)

"My children only like certain vegetables like carrots and spinach" (lecturer, urban area)

Some mothers in the urban areas said that they preferred preferred simple dishes in the morning for breakfast;

"Instant noodle and pempek (savory fishcake delicacy, originally from Palembang, made of fish and tapioca served with a rich sweet and sour sauce called cuko) are our favorite breakfast" (government officer, urban area)

Access to food

All the children in the urban and rural areas said that they had access to school stores, canteens, and food vendors outside schools, all of which offered items that were low in nutrients but high in fat, salt and sugar. They received a daily pocket money from their parents, which varied from 5000 - 25000 rupiahs (15,000 rupiahs = US\$1). Most of this money was spent on buying food sold around their schools or near their homes. The foods they bought were usually sweet or sugary snacks/drinks for example:

"I often buy potato chips and iced tea outside school during the first break" (grade 4, rural area)

"I like to eat grilled sausages and pop ice" (grade 5, urban area)

Most mothers agreed that it was difficult to control what their children ate outside the home. They also agreed that schools should have an influence on what their children eat while at school.

"The school should be a part of what's going on, and teachers should act as parents at school"

"Teachers should educate students on which food should be consumed and which should be avoided" (mother in rural area)

Physical activity

Almost all the students from middle and upper income families reported that they frequently spent their leisure time in sedentary activities, such as watching television and playing games using gadgets.

"I love playing games on my tablet, my favourite is Craft and Attack on Titan" (Grade 5, private school, urban area)

Some of them said that they had personal gadgets such as android mobile phones or tablets. Private school students also mentioned spending a lot of time on screen-based activities.

"I have a Facebook account. Chatting on the phone and updating my status on Facebook make me inactive" (grade 4, private school, urban area)

They preferred to play at home rather than to participate in outdoor activities. The structure of the school system and academic workload were frequently mentioned as barriers to activity among private school students.

"After I arrive home in the afternoon, I am too tired to do sports" (grade 5, private school, rural area)

Students from the low income families reported spending more time doing outdoor activities, such as playing soccer, cycling, fishing, and climbing trees.

“I don’t have a smartphone, so after school I play soccer with my friends” (grade 4, government school, rural area)

The schools offered only a single sport education class a week and limited physical activities after school. The lack of opportunities for engaging in physical activities at school, was a common reason mentioned in all the FGDs among the students. Limited sport facilities, the lack of qualified sports teachers/coaches (only one sports teacher in school), and lack of role models were other reasons for the lack of physical activity. The girls felt that they had fewer physical activity options available at school compared to the boys.

Ability to provide food

Non-working mothers in rural areas stated that rice was the main staple food but revealed that the food they provided lacked variety. The reason was financial, and other foods such as animal protein and fruits could only be bought after they had received their earnings from weaving fabric. The major sources of protein were eggs, *tempe* (fermented soybean cake), tofu, and fish (either caught or bought). The majority of mothers usually bought animal products, vegetables, and fruits from mobile vegetable vendors who visited the village regularly. This was an advantage as they did not need to go to markets which located far from their home, and also they could buy in smaller quantities. However, because of the limited variety of food items sold by the mobile vegetable vendors, this resulted in a lack of variety in the foods prepared at home. In contrast, working mothers

from middle and upper socioeconomic status were able to provide animal products, vegetables, and fruits, without problems.

School policy and teacher’s role

Based on in-depth interviews with the teachers, it was found that two participating public schools did not have their own school canteen. The teachers revealed that the schools could not prevent their students from buying snacks from vendors outside the school.

“Students often buy snacks outside school because we don’t have a canteen” (teachers, government school)

They said that, at best, they could only remind the students not to buy snacks from outside the school. Importantly, a majority of the teachers were unfamiliar with the latest government guidelines for balanced nutrition. On the other hand, all the private schools had their own school canteen, and their students were not allowed to buy snacks outside the school. However, the schools did not control the foods and beverages that were sold in the school canteen. We found that the canteens sold packaged foods and beverages, such as flavoured powdered drinks, chips, wafers, and chocolates. The schools also admitted that they had not been able to monitor the food and drinks that were sold in the school canteen.

Script development and production

Based on the results of the FGDs and in-depth interviews, the drama and storytelling scripts were drafted by the GABI team and the story-telling team, respectively.

A drama titled “POLISI” (an acronym for *Pola Hidup Sehat dan Makanan Bergizi*, which translates to “Healthy Lifestyle and Nutritious Food”) and a

story titled “Nino and the Magical Tree” were finalised. The synopses for the story and drama are provided in Table 5. The content of the scripts was developed based on themes that emerged from the FGDs and in-depth interviews. For example, based on FGDs with children, we found that they lacked of physical activity and eat unhealthy food that they bought in the school environment. We created a story plot to describe that situation and give recommendations to change it. The research team also added key nutritional behaviours on balanced nutrition that were packaged as 10 messages. These were behaviours that were found wanting during the exploratory study, such as the consumption of a variety of foods, plenty of vegetables and fruits, having a regular breakfast, the need for proper hand-washing, and undertaking regular physical activity. These guidelines were used to replace the older guidelines of “Four Healthy Five Perfect” (*empat sehat lima sempurna*).

Taking into consideration the attention span of the school children, who were the main targets of the drama and storytelling sessions, both the performing teams decided that the drama should last for about 50 minutes and that the storytelling session for about 30 minutes (including an interactive session with the audience). The performances of these two nutrition education media were scheduled for one weekend at the GABI Theatre Room in Palembang. Prior to that, regular rehearsals were conducted twice a week for three weeks and daily intensive rehearsals were conducted for five days prior to the show. The impressions of the audiences of two media events for nutrition education will be presented as a separate paper.

DISCUSSION

Health communication strategies have been used to inform and influence individual and community decisions to enhance health (Parvanta *et al.*, 2011). Increasingly, however, health communication developers are turning to narrative forms of communication like entertainment education, storytelling, and testimonials to help achieve these same objectives. Narrative is a key communication strategy as human beings are all storytellers (Gray, 2009). Storytelling has been a method for human beings to organise experience and ideas, communicate and create understanding with the purpose of educating and inspiring the cause-effect relationship between events in particular time. Storytelling has a power to explain a condition, topic or problem to attract and sustain interest, and to form meaningful connections with audiences (Sundin, Karolin & Robert, 2018). This type of education is realistic and applicable to classroom teaching.

Changes in health and nutrition behaviour may be achieved through education within the school setting (Lee, 2009). School-based nutrition education should take into consideration the needs and interests of the students, teachers and the school, be culturally appropriate and be delivered in ways that the children can understand healthy eating habits (Wilson, 2009). Based on the ecology theory (Parvanta *et al.*, 2011), there are three domains that influence the eating behavior of children. These are at the levels of the individual (children), the family (mother) and the environment (represented by school teacher). An important element in the early stages of preparing nutrition messages through drama and storytelling was the identification of their perceived needs and barriers in the implementation of

balanced nutrition by FGD. The FGD results have provided information on the knowledge among young school children of balanced nutrition guidelines and how their environments (i.e. their mothers, the schools, and teachers) have influenced the eating practices of the children.

Studies in Australia have revealed that parents are not always capable of choosing healthier foods because they lack adequate knowledge and also because they are misled by the information provided through the marketing practices of food companies (Jones, Robinson & Kervin, 2011). We found a number of consistent themes among mothers and students both in rural and urban areas. In general, mothers in rural and urban areas were not familiar with the latest public guidelines on balanced nutrition that were published in 2014. Instead, the “Four Healthy Five Perfect” slogan that was introduced in 1952, was still the predominant guideline referred to by the general public. That slogan had stated that milk was the perfect food that could compensate for non-consumption of all other foods. This was strongly believed by mothers. The fundamental differences between the “Four Healthy Five Perfect” slogan and the new guidelines on balanced nutrition lie in the four new principles, which are food diversity, personal hygiene, physical activity, and control of body weight (MOH Republic of Indonesia, 2014).

The present study found that the intake of fruit and vegetables by students at mealtime is inadequate. The choice of food that is consumed is influenced by factors such as

tastes, colours and textures. Sugary snacks and drinks were preferred by the children. Such foods are easily available at school or from food vendors around their home. They easily access such foods as they are given daily pocket money by their parents.

Schools should be part of the solution of this issue. Providing regular nutrition education and nutritious and balanced meals through a school meal programme has been shown to enhance the knowledge and desire of students to choose right foods for their health (Park, Je-Hyuk & Myung-Hee, 2015). The role of the schools can be improved through the UKS “School Health Programme”, wherein one of three pillars is health education on nutritious foods for the students. Unfortunately, the implementation of the UKS has been unsatisfactory. As a result, the government has transformed the UKS programme to create a healthy school environment. This, in turn, can help to prevent non-communicable diseases in children from an early age.

School policy should be backed with proper resources to address health and nutrition behaviour. Such policies would be more effective if they were disseminated by educators with experience in the field. Schools should also be permitted to investigate the foods and beverages that are available to students at canteens or food vendors located near the schools and take appropriate action if they are deemed unsuitable.

Schools should be provided with adequate time and other resources to develop health promotion tools to carry out changes. However, the resources

Table 5. The synopses of drama and storytelling

Type	Synopsis
Drama	<p>Gita has a mother who cares about the health of the family. Her mother always serves homemade food for Gita and her father. Gita's mother is a role model for other mothers in the neighbourhood. She often shares information with her friends on how to apply the concept of balanced nutrition in the family's diet, increase the variety of the food that is provided, counsel children who do not like vegetables, and choose healthy snacks.</p> <p>Gita has several close friends in school who have different lifestyles. Shinta is an obese girl who likes eating candies, ice cream, chips, and other snacks a lot, while Lala is a lazy girl who likes to buy unhealthy snacks that are sold around the school every day. Bimo loves to play with gadgets. Gita often advises her friends about healthy eating habits and an active lifestyle.</p> <p>One day Gita invites her friends to bring their own lunchboxes to school. Gita asks her friends to open their lunch box together. Surprisingly, most of the foods inside the lunch box were unhealthy. Gita explains that they should eat a variety of foods, vegetables and fruits because they contain a lot of nutritious substances. Gita discusses with her friends that consuming too much high-energy foods, combined with sedentary lifestyles, may result in excessive weight gain. The teacher hears their discussion, approaches Gita and her friends, and brings along big poster of the Indonesian food pyramid called "Tumpeng Gizi Seimbang" on balanced nutrition guidelines. She concludes the show by articulating all 10 messages in the nutrition guide that include what and how much we should eat every day, and the need for having an active, healthy lifestyle.</p>
Storytelling	<p>The Mikimo village is inhabited by magical dwarves who speak and live like humans. They are unique in their own way and are endowed with certain blessings that will remain with them only if they do not violate the rules of the Gods. The Mikimo village is famous for its fertile vegetable and fruit plantations and the habits of its people who follow a healthy lifestyle. They have a varied diet and love the vegetables and fruits that they consume every day. They also do not forget to have breakfast before gardening or doing other activities. Washing of hands is obligatory before and after meals.</p> <p>One day, a small dwarf named Nino missed his breakfast because he was in a hurry to go to Uncle Maden's carrot garden. Suddenly, Nino got a warning from God. At the time of pulling the carrots, he is swallowed into the ground. He then sees the old banyan tree that turns out to be the God Nirvana. God Nirvana then reminded Nino not to skip his breakfast again.</p> <p>In ancient times, the dwarves used their magical powers arbitrarily. They created so much cake, candies, chips, chocolate, that they overate and became too lazy to work. They did not like to have breakfast or eat fruits and vegetables, and so they became fatter, and finally died. They also never washed their hands before and after meals so they were often infected with diseases. Therefore, God Nirvana and the Chief of the tribe drew up some rules. These were to always eat nutritious foods, consume fruits and vegetables, have breakfast, and wash hands before and after meals.</p> <p>Nino regretted what he had done and promised to obey God Nirvana's rules so as to continuously maintain a healthy lifestyle.</p>

for developing and sustainably enacting these performances on nutrition education for school children need to be expanded as a variation of interactive nutrition education tool. The use of the performances arts such as drama and storytelling has the potential for conflict with the duties of the teachers. However, its short duration fits with the limited time teachers are provided for nutrition education.

Finally, although models of health-behaviour change like social cognitive theory, precaution adoption process model, and the theory of reasoned action have been applied and evaluated more extensively in health-behaviour research, their application to communication by narrative means has been limited. Most research on narrative effects has been conducted in the fields of communication and psychology, not in health-behaviour research, let alone nutrition behaviour.

CONCLUSION

This study showed that drama and storytelling performance should be based on the assessment of the eating environment of the children. Drama and storytelling are appropriate due to its relatively short duration, which fits with the limited time that school teachers are provided for nutrition education. Storytelling also applicable for parents because it is a simple method of delivering nutrition messages in a home setting. Future research should be conducted to collect data at baseline, during and post-intervention to confirm the effectiveness of these tools.

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Authors' contributions

DS, led the data collection and compiled the first draft of the manuscript; EF, led the data collection. All authors contributed to the conception and design of the work, were involved in the acquisition, analysis and interpretation of the data, critically revised the draft and approved the final draft.

Conflict of interest

We declare no conflicts of interest.

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