Improving diarrhoeal and clean and healthy living behaviour (PHBS) through collaboration socio-dramatic play (Ko-Berdrama) in school age children

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Abstract

**Introduction:** Indonesian health status is strongly influenced by clean and healthy living behaviour (PHBS or Perilaku Hidup Bersih dan Sehat). PHBS programmes should be implemented from school age so that healthy lifestyle practices can persist into adulthood. Community nurses implement play socio-dramas (Ko-Berdrama) as a method of health education in an effort to increase PHBS.

**Objectives:** To determine the effect of play socio-drama (Ko-Berdrama) intervention to change the knowledge, attitudes, and skills of PHBS in school age children.

**Method:** The design is a quasi experimental one for 8 months. The calculated sample size was 184 school age children. School age children 6-12 years old who had a problem of lack of PHBS based on the results of questionnaires and screening PHBS were included in the study. Community nurses used play socio-drama (Ko-Berdrama) in seven sessions over 6 months, staging each session for 20 minutes followed by 20 minutes of discussion. Data collection tool was a questionnaire consisting of variable knowledge, attitudes, and PHBS skills of school-age children. Data were analysed using the paired t-test.

**Results:** Results using the paired t-test of knowledge, attitude, and skills variables on school-age children before and after Ko-Berdrama interventions were tabulated. The results showed that socio-dramatic play significantly affects knowledge (p = 0.002), attitudes (p = 0.005), and diarrhoeal prevention skills (p = 0.008) of PHBS. Knowledge about PHBS increased from 45.1% to 61.4%, the child's attitude about PHBS increased from 44.6% to 59.8% and the skills of children about PHBS increased from 42.9% to 54.9%.

**Conclusions:** Socio-dramatic play (Ko-Berdrama) significantly increases knowledge, attitudes, and diarrhoeal prevention skills of clean and healthy living behaviour (PHBS) in school age children.

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Introduction

Indonesian health status is strongly influenced by clean and healthy living behaviour (PHBS or Perilaku Hidup Bersih dan Sehat). Percentage of households who practised PHBS decreased from 56.5% in 2012 to 55.6% in 2013. This is lower than the 70% target set for 20141. Central Statistics Agency (BPS) (2016) showed the number of school-age children (6-12 years) in Indonesia was 26,504,1602. PHBS programmes should be implemented from school age so that healthy lifestyle practices can persist into adulthood3. School age children are more likely to be exposed to health problems due to biological, behavioural, and environmental risk factors4. Behaviour that can affect the health of school age children include lifestyle and personal hygiene5. Regular hand washing in children can prevent morbidity in the family and reduce school absences6.

Data on the prevalence of diarrhoea in Indonesia show that the proportion of school age children having diarrhoeal disease varies from 2% to 20% per province7. Based on data from Depok City Health Department in 2015, the hospital outpatient clinic disease pattern in age group 5-14 years was acute respiratory infection (22%), dental disorders (7%), fever (6%) and diarrhoea (5%)8.

The government has made efforts to change people's behaviour, including school age children and improve health through PHBS programmes. PHBS programmes that have been carried out include management of personal and health
Therapeutic play is one of the methods of health education to improve PHBS in school age children. Community nurses implement collaborative interventions play socio-drama (Ko-Berdrama) as a method of health education in an effort to increase PHBS. The results of research show that playing socio-drama with friends increases social interaction among peers. Playing socio-drama is an important method in language development in children. In addition, socio-drama method of folklore enhanced the 5th grade speaking skills.

Community nurses also include educational games in Ko-Berdrama intervention package. Educational games are played in the form of simulated practice PHBS through the ‘snakes and ladders’ game. PHBS themed game of ‘snakes and ladders’ consists of questions and a simulation props PHBS. Educational games using the game of ‘snakes and ladders’ effectively improved the knowledge of balanced nutrition in children of school age. Additionally, Ejike, Oluwole, and Mogaji developed an innovative educational game ‘worms and stairs’ for prevention of intestinal worms in children of school age.

Ko-Berdrama technique can be an alternative method of health education which is interactive and creative in improving PHBS. Community nurses choose socio-drama peers as actors to portray characters that describe the behaviour of clean and healthy living. Studies show that there is a significant increase in the average scores of knowledge, attitude and skills associated with PHBS before and after the peer education in the intervention group.

Objectives

To determine the effect of play socio-drama (Ko-Berdrama) intervention to change the knowledge, attitudes, and skills of PHBS in school age children.

Method

The design used in this paper is a quasi experimental one for 8 months. There is a large study population, as many as 1,675 children of school age. Based on the sample calculations and the results of the screening, a sample size of 184 children of school age was obtained. Samples were selected based on inclusion criteria that school age children 6-12 years old who have a problem of lack of PHBS based on the results of questionnaires and screening PHBS. Data collection tool in this study was a questionnaire consisting of variable knowledge, attitudes, and skills of school-age children. The questionnaire used a modification of previous studies. Analysis of data using data processing program is displayed in percentage changes in knowledge, attitudes, and skills of PHBS.

Ko-Berdrama technique: For six months community nurses used seven sessions, staging each session for 20 minutes followed by 20 minutes of discussion. School age children first practised Ko-Berdrama around 3-5 times before performance. One group consisted of 8-10 children. The first session was on the topic of ‘diarrhoeal disease’. The second session was on the topic of ‘the importance of using healthy latrines and clean water sources’. The third session was on the topic of ‘physical activity and fruit and vegetable consumption’. The fourth session was on the topic of ‘hand washing with soap’. The fifth session was on the material practice of washing hands with soap. Sixth session consisted of race playing socio-drama hand washing practices. Seventh session consisted of reinforcement intervention by PHBS simulation using the card game of snakes and ladders. The game contains knowledge and simulation PHBS consisting of handwashing, fruit and vegetable consumption, and physical activity. After playing socio-dramas there were continued discussion groups to review the summary of the contents of drama shown earlier.

Knowledge questionnaires were in the form of dichotomous questions with right and wrong answers. A correct answer was given a value of 1 while a wrong answer was given a value of 0. Attitude measurement instruments used a Likert scale with a range of grades 1 to 4 consisting of strongly agree (SS), agree (S), disagree (TS), and strongly disagree (STS). If in the form of a positive question (favourable statement), then SS was worth 4, S was worth 3, TS was worth 2, and STS was worth 1. If in the form of a negative question (unfavourable statement), then SS was worth 1, S was worth 2, TS was worth 3, and STS was worth 4. Skill measurement instruments also used a Likert scale with a range of 1 to 4 consisting of ‘always’, ‘often’, ‘sometimes’, and ‘never’. If in the form of a positive question (favourable statement), ‘always’ was worth 4, ‘often’ was worth 3, ‘sometimes’ was worth 2, and ‘never’ was worth 1. If in the form of a negative question (unfavourable statement), ‘always’ was worth 1, ‘often’ was worth 2, ‘sometimes’ was worth 3, and ‘never’ was worth 4.
Results
The result of analysing the knowledge, attitude, and skills variables shows a significant change in the levels of each variable before and after engaging in socio-dramatic play. Alternatively, in the control group, there was no significant change in the mean values of the knowledge, attitude, and skills variables (Table 1). Distribution of knowledge, attitudes, and skills of PHBS in school age children before and after intervention is shown in Figure 1.

Table 1: Results of the paired t-test of knowledge, attitude, and skills variables on school-aged children in South Purwokerto in 2017 (n = 184)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention Group (n = 94)</th>
<th></th>
<th>Control Group (n = 90)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
<td>Difference in mean</td>
<td>p value</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Knowledge</td>
<td>7.61</td>
<td>1.326</td>
<td>9.82</td>
<td>1.540</td>
</tr>
<tr>
<td>Attitude</td>
<td>29.66</td>
<td>2.998</td>
<td>33.61</td>
<td>3.680</td>
</tr>
<tr>
<td>Skills</td>
<td>28.66</td>
<td>2.714</td>
<td>29.61</td>
<td>2.715</td>
</tr>
</tbody>
</table>

Based on the data obtained from Figure 1, knowledge about PHBS children increased from 45.1% to 61.4%, the child's attitude about PHBS increased from 44.6% to 59.8% the skills of children of PHBS increased from 42.9% to 54.9%.

Discussion
Preventive and promotional efforts can be done through interactive health education engaging school-age children. The community nurse applies Ko-Berdrama technique that is learning while playing in accordance with the cognitive development of school age children. School age children begin to enter the concrete operational stage of cognitive theory of Piaget, where children with serious behaviour begin to think logically\(^\text{18}\). Increasing awareness through education with the method of dramatic relief becomes an alternative in improving knowledge\(^\text{19}\). The dramatic relief method played by school age children through socio-drama gives a deep impression to school age children as it is more subtle.

Increased knowledge after the intervention is the influence of Ko-Berdrama in relation to PHBS. One of the phases in Ko-Berdrama is the intervention phase in which children play an active role in the game socio-drama PHBS that contain material that is washing hands with soap, fruit and vegetable consumption, and physical activity. After
that, the school-age children also had discussions regarding the material socio-dramas played before. The discussion was quite an interactive question and answer session along with the facilitator. School-age children who previously did not know about PHBS be out after being given the Ko-Berdrama. Based on health promotion model (HPM) theory, the individual experience can be a strategy to change health behaviour through self-reflection method. Health education with the method of Ko-Berdrama is more subtle on memory of school age children for deeper reflection process through the exploration of feelings and emotions in playing the character socio-dramas.

Changes in attitude after the intervention is a positive impact of increased knowledge. Respondents were previously not knowing to knowing about health behaviour, then making a pattern attitude change. The attitude of the respondents tend to increase after school age children realize the importance of healthy behaviour. Based on the theory of HPM, commitment to the action plan was influenced by interpersonal through peer support models. Ko-Berdrama concept model of peers as a character actor in socio-dramas. In addition, the researchers also used the principle of reward and punishment during the intervention process for children of school age. The principle is quite effective in encouraging school-age children to change bad behaviour.

Skill improvement is influenced by increased knowledge and attitude of school age children. Someone who has a good attitude, has good skills as well. The results showed an increase in healthy behaviour after health education. Health education is one way to improve one's ability and make the right decisions with respect to health care based on experience gained. Based on HPM theory, process outcomes previously healthy behaviours are influenced by biopsychosocial processes and experiences of individuals.

Socio-dramas play a part in this implementation using peers as a figure who plays socio-dramas. Peers as a model in providing examples of handwashing in preventing diarrhoea. How to teach skills during the intervention process involving peers to give an example of PHBS. Individual experience can be reflected through the role of Ko-Berdrama figures. Child who plays the role as leader of diarrhoea prevention behaviours such as using a latrine, healthy water sources, hand washing with soap in running water, fruit and vegetable consumption, and physical activity. Therefore, Ko-Berdrama can be useful in influencing children towards healthy behaviours.

Teachers and parents also stated that there is an increase in healthy behaviour in school-age children. Peers also give effect to the changes PHBS like to remind each other to bring a healthy lunch, eat vegetables and fruit, exercise, and wash hands with soap. Healthy behaviours, played by peers socio-drama provides positive support to behavioural change. This shows that playing Ko-Berdrama is able to increase PHBS in school age children.

Ko-Berdrama increases PHBS in school age children. Ko-Berdrama uses the concept of learning while playing and practising healthy behaviours directly so as to accelerate the process of educating children of school age. Ko-Berdrama can also be applied to other health themes such as the prevention of respiratory infections, intestinal worms, and skin diseases in children of school age.

Conclusions

Socio-dramatic play (Ko-Berdrama) significantly increases knowledge, attitudes, and diarrhoeal prevention skills of clean and healthy life behaviour (PHBS) in school aged children.

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