

**EDU WORLD 2018**  
**The 8<sup>th</sup> International Conference**

**CLEAN HANDS FOR HEALTH - A SHORT EDUCATIONAL  
PROJECT FOR CHILDREN**

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***Abstract***

The objective of this paper is to present the implementation and process evaluation of a short educational project regarding hand hygiene among kindergarten children. The project was implemented among children from kindergartens from Cluj-Napoca, Romania and included themes regarding why, when and how we should perform correct hand hygiene. It was consisting of one session including discussions, games, and practical activities and testing the way of performing hand hygiene using a special solution for cleaning hands which could be identified using a special device. Moreover, a poster with pictures illustrating the steps for a correct hand washing was posted in the kindergarten in order to remember the children the key messages of the program and to inform parents about them, too. A process evaluation was performed among 250 parents/tutors of the children from three kinder gardens through means of anonymous questionnaires. The results show that the majority of the parents saw the poster of the program, declared that they noticed a positive effect on the behaviour of their children and dedicated time to discuss about the key messages of the program with their children. At the same time, nine out of ten parents appreciated that the program as useful or very useful. The paper analyse strengths and weaknesses of the program and includes suggestions for future activities in this field.

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**Keywords:** Health education among children, hand hygiene, children.



## **1. Introduction**

Health education among children plays an important role in shaping their knowledge, attitudes and behaviour with regard to several issues which influence their development and health, with important short term and long term consequences (Lotrean, Popa, Arillo-Santillan, & Florea, 2014; Bartholomew, Parcel, Kok, & Gottlieb, 2006; De Vries, 1998).

Besides other health relating topics such as promotion of a healthy lifestyle, injury prevention, hand hygiene for children is crucial to keep them healthy (Lotrean & de Vries, 2016; Valea et al., 2014; Lotrean & Tutui, 2015; World Health Organization, 2002).

Several studies underline that educational activities for promotion of hand hygiene should create awareness of the benefits of hand washing, raise the children's motivation, skills and confidence in performing correct hand hygiene, and enable social norms and environments which encourage this behaviour. In order to achieve these objectives the educational activities should target both parents and children and kindergartens/schools are settings which should encourage such educational activities (Lehotsky et al., 2018; Öncü et al., 2018; Seimetz et al., 2017; World Health Organization, 2018).

## **2. Problem Statement**

A recent review synthesised evidence on the effect of hand washing promotion interventions targeting children, on diarrhoea, soil-transmitted helminth infection and hand washing behaviour, in low- and middle-income country settings (Watson et al., 2017). It concluded that few studies evaluated hand washing interventions targeting children in low and middle income countries and all had various methodological limitations, but it is plausible that interventions which succeed in changing children' hand washing practices will have a significant health impacts especially that in several countries a lot of the infectious diseases burden related to inappropriate hand hygiene is concentrated in this age group (Watson et al., 2017).

## **3. Research Questions**

The research questions rely to how can we use educational methods in order to improve hand hygiene of children and to which extent they can influence the behaviour of both children and parents with regard to discussing and putting into practice appropriate techniques for hand hygiene.

## **4. Purpose of the Study**

The purpose of this paper is to present the implementation and process evaluation of a short educational project regarding hand hygiene implemented among kindergarten children from Cluj-Napoca, Romania. It presents the main characteristics of the project, as well as the evaluation of the project by parents. .

## **5. Research Methods**

The project was implemented in several kindergartens from Cluj-Napoca starting with 2010. In 2012 the project was implemented in three kindergartens from Cluj-Napoca. Moreover, a process evaluation was performed among 250 parents/tutors of the children (45% males, 55% females) from the three kindergartens through means of anonymous questionnaires. The questionnaire was developed for this study based on the

example of the questionnaire used for process evaluation of other health education programs (Lotrean, Dijk, Mesters, Ionut, & de Vries, 2010). The issues assessed by the questionnaire are presented in Table 1.

**Table 01.** Issues assessed by the questionnaire

<b>Issue</b>	<b>Questions</b>	<b>Possibilities of answer</b>
Awareness about the project	1. Have you seen the poster of the project posted in the kindergarten? 2. Have you read the letter for the parents informing about the project?	1. Yes/No/I do not know 2. Yes/No, but my wife(husband) did so/I do not remember
Effects of the project on the communication between parents and children regarding hand hygiene	1. Has the project stimulated the discussions between you and your child regarding hand hygiene?	1. Yes, very much/Yes, quite a lot/I do not know/Not at all
Effects of the project on the behaviour of the children as perceived by parents	1. Has the project influenced positively the behaviour of your child?	1. Yes, very much/Yes, quite a lot/I do not know/Not at all
Evaluation of the project by parents	1. Which is your opinion about how useful the project was? 2. Based on what you know about the projects, its content, activities and educational material, which is the score you give to the project?	1. Very useful/Useful/I do not know/Not useful 2. From 1 to 5 (1-minimum, 5-maximum)

## 6. Findings

### 6.1. Project characteristics and implementation

#### a. Title of the project

Clean hands for health

#### b. Aim and objectives

The aim of the project was promotion of appropriate hand hygiene among children.

The objectives of the project included the following issues:

- Increasing awareness regarding the importance for health of hand hygiene
- Recognising the moments during a day activity when it is necessary to clean hands
- Learning the correct way of cleaning hands
- Building skills and confidence for performing correct hand hygiene

#### c. Target group

-Direct beneficiary

Pre-school children aged 4 to 6 from kindergartens from Cluj-Napoca

-Indirect beneficiary

Parents of the children and kindergarten teachers from Cluj-Napoca

#### d. Educational activities and materials

The educational activities included themes regarding

-why hand hygiene is important (hands are one of the main pathways for transmission of harmful germs, leading to sickness, vomiting and several diseases)

- when hand hygiene should be performed (after using toilet, before eating , before cooking, after playing outside, after playing with animals)

-how we should perform correct hand hygiene (we can use soap and water or we can use special solution for disinfecting hands and several techniques should be applied to assure that the hand is correctly cleaned- 1. Rub hands palm to palm, 2. Right palm over the left dorsum with interlaced fingers and vice-versa 3. Palm to palm with fingers interlaced, 4.Back of fingers to opposing palm with fingers interlocked 5. Rotational rubbing of each of the thumbs 6.Rotational rubbing with clasped fingers of the right hand in left palm and vice-versa)

The project was consisting of one session including discussions, games, and practical activities and testing the way of performing hand hygiene -children cleaned their hands with a solution which could be identified using a UV lamp, so the children could see by putting their hands below a UV lamp the parts of the hand which were not cleaned correctly, since the solution did not cover those parts and could practice the correct techniques for cleaning hands until they were performed correctly and all parts of the hands were covered (see figure 1).

Moreover, a poster with pictures illustrating the steps for a correct hand washing was posted in the kindergarten in order to remember the children the key messages of the program and to inform parents about them, too.

e. Implementation

In 2012 the project received the approval for implementation from the directors of three kindergardens. Parents of children were informed about the implementation of the project through letters and were asked to sign informed consent for the participation of their children.

The project was implemented in all classes with children aged 4 to 6 from the 3 participating kindergardens. One educational session of 30-40 minutes was implemented in all classes using the educational activities and materials explained above. The poster was also posted in several places of each kindergarten in order to be seen by both children and parents.

Two weeks after the implementation of the educational session, parents were asked to fill in a questionnaire which assessed their exposure and opinions about the content and effects of the project on children behaviour as well as communication between parents and children regarding hand hygiene.

## 6.2 Process evaluation of the project

The results of the process evaluation by means of questionnaires among parents show that 94.8% of the parents have seen the poster of the program displayed in the kindergarten; 78% remembered reading the letter for the parents, 10% declared that the other parent read the letter and the rest did not remember/did not know.

A percentage of 49.2% of the parents said that the program stimulated very much the discussions with the child about the importance and how to perform hand hygiene, while 41.6% declared that the project stimulated these discussions quite a lot and only 9.2% said that the program did not enable these discussions. 88% of the projects said that the program had positive strong or quite strong effects on the behaviour of their children. At the same time, nine out of ten parents appreciated the program as useful (70.8%) or very useful (23.2) and 6% did not know. The mean of the scores got by the project from parents (scale from 1 to 5, with 5 being the maximum) was 4.48.



**Figure 01.** Cleaning hands and testing using UV lamp and a special solution the way the cleaning was performed

## 7. Conclusion

The project has several strengths- its content based on interactive activities and a suggesting way of learning, practicing and testing hand hygiene, using of educational materials for informing both children and their parents. The results for the process evaluation show positive results, which encourage the continuation and dissemination of the project, despite the limitations which rely on the costs of the special solution for testing the hand cleaning. Informing the kindergarten officials and teachers about the project and motivating them for its implementation is very important.

The study has several limitations-it is an exploratory study performed on a limited sample of parents/tutors of children, the questionnaire used for data collection was not validated before, while the information relies only on the subjective perception of parents. Future studies should focus on developing,

validating and implementing effect and process evaluation tools for educational activities regarding promotion of hand hygiene among children.

## Acknowledgments

The authors thank to all children, parents and teachers involved in the implementation of the project.

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