

Personal Cleanliness Activities in Preschool Classrooms

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Abstract One hundred and twelve preschool teachers in Indiana were asked to complete a questionnaire requesting them to indicate what personal health-related activities they were incorporating into their classroom routines, why they were incorporating them, and how often such activities were done. The results of the study indicate that the most incorporated activities were hand-washing, proper ways of coughing, and discussion on germs. The least incorporated personal health-related activities were proper use of bathroom and keeping things out of the mouth. Reasons for incorporating the activities include helping to curtail the spreading of colds and germs, helping the children to develop good life skills later in life, and helping the preschoolers know about the health hazards associated with germs, among others. The study recommends the need to make Health Education a core component of preschool teachers' training.

Keywords Personal cleanliness · Hand washing · Coughing · Germs · Bathroom · Glitter germs

Introduction

The need for preschool teachers to assist their preschoolers in understanding the contributions that they can make towards living a healthy lifestyle should be emphasized due to the fact that children have the tendency to learn about unhealthy lifestyle choices at an early age and to carry on such choices into adulthood. Also, given the close

connection that exists between personal cleanliness and children's health, if any headway is to be made toward the minimization or total elimination of some childhood diseases, then scientific studies on personal hygiene among preschoolers are warranted. There is no better place to do such research than in the preschool classroom. A review of the literature on Early Childhood Health Education revealed that not much research has been done concerning personal hygiene topics taught in preschool classrooms. This study fills that vacuum.

Literature Review

The importance of hygiene among preschoolers has attracted the attention of pediatricians and early caregivers. For example, in their study of hygiene levels and their association with infectious diseases among preschoolers, Sherriff and Golding (2002) noted that it is essential for caregivers to operate in a clean environment. The need for caregivers to operate in a clean environment in order to minimize the occurrence and spread of disease is also bolstered by Hagerhed-Engman et al.'s (2006) study in which they discovered a strong connection between day-care attendance and the increased risk for developing respiratory and allergic symptoms.

Thompson (1994) draws scholars' attention to the need to pay attention to personal cleanliness measures like hand-washing, ways of preventing the spread of bacteria during coughing, proper dental care, among others. He discovered that preschoolers are at high risk for gastrointestinal diseases caused by a large number of enteric pathogens and called for the training and education of caregivers and children in good personal hygiene given the fact that the risk of such diseases is increased by the greater potential

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for person-to-person transmission within group care. In particular, he called for great emphasis to be placed on frequent hand-washing, separating *change* areas from *food handling* and *eating* areas, and routine cleaning and disinfecting of environmental settings. Kotch et al.'s (2007) work also showed that hand-washing and the availability of diapering equipment reduced disease among children in out-of-home child care centers. The above studies give further credence to the need to take the study of hygiene in preschool settings very seriously.

Given the emphasis placed on the need to improve personal cleanliness at care-giving centers, this study aims at exploring the contributions that preschool teachers make towards the teaching of health topics in their classrooms by answering the following questions: (a) What personal hygiene activities do preschool teachers integrate into their classrooms? (b) Why are such activities incorporated? (c) How often are the activities incorporated?

Methods and Procedure

Population Sample

The population for the study was preschool teachers in Indiana. Only preschool teachers were selected for this study given the dearth of scholarship on preschool classroom health in School Health literature. The study was pilot tested with 58 preschool teachers. One hundred and twelve (112) preschool teachers took part in this main study. The majority of teachers (97.3%; $n = 109$) were female and the average number of years they had taught at preschool was 7.6 with a standard deviation of 6.2.

Research Procedure

Questionnaires for the pilot study were administered between May 2006 and January 2007. The pilot study requested that the participants list the health related activities they incorporated or did not incorporate in their classes. The health related activities provided by the participants were collated and presented as response choices for the main study participants.

The instrument used in the main study consisted of both closed-ended and open-ended questions. The questionnaires were administered between May and June of 2007. To ensure content validity, the questionnaires were given to two experienced colleagues for close examination. Participants were required to identify from a list of health activities those activities that they incorporated the most or did not incorporate in their classes and to provide reasons for incorporating or not incorporating them. They were also required to indicate the number of times (e.g., once or

twice per day; once, twice, or three times per week) that they carried out the activities in their classrooms. Another aspect of the instrument dealt with participants' demographic information. Participation was voluntary and consent forms were read by participants before completing the questionnaire.

Coding

Three people were involved in the coding of the completed questionnaires. The coding involved an assessment of the content of the data (by the coders) with the intent to identify common themes. All three coders identified and agreed on three themes; personal cleanliness, nutrition, and exercise. Nutrition and exercise activities are discussed in another paper.

Data Analysis

The analysis involves percentages calculated based upon the total number of surveys returned. The percentages were based on the responses from the closed-ended questions. The qualitative analysis was established from the answers to the open-ended questions. Within qualitative methodology, aspects of constant comparison method—comparing utterances and categorizing them into themes (Dye et al. 2000)—were used to derive the themes.

Results and Discussion

An analysis of the data shows that hand-washing was the activity that was incorporated by the highest number of the surveyed participants (32%). This was followed by activities on discussion of germs (20%), covering the mouth during coughing (16%), glitter germs (9%), and proper response to sneezing and dental health (each by 7%). Proper use of the bathroom and keeping things out of the mouth were each incorporated in classroom schedules by 4% of the teachers in the population sample. We begin by examining hand-washing.

Hand-washing

According to the Centers for Disease Control's (CDC) (2000) guidelines on hand-washing, in order to stay healthy and clean, it is important for children and caregivers to wash their hands with warm water and soap. The CDC recommends the washing of hands prior to eating and drinking, brushing one's teeth, or helping a sick person. The CDC recommends further that it is important to wash one's hands after using the bathroom, changing diapers, touching door knobs, railings, or blowing one's nose. With

respect to how to wash hands after using the bathroom, the CDC recommends the following hygiene sequence: washing one's hands with warm water, applying an appropriate quantity of soap, rubbing one's hands together for at least twenty seconds, rinsing the hands, drying them with a paper towel, and using the paper towel to turn off the faucet, and then opening the door. Finally, the CDC recommends that in the absence of water and soap, it is essential to use ethanol alcohol-based (a minimum 62%) hand sanitizer, preferably in a gel form.

A close analysis of the data generated in this study shows that 32% of the surveyed participants ($n = 36$) incorporated hand-washing into their class activities. The teachers noted that activities done under hand-washing included appropriate use of hand-washing soaps, hand-wiping towels, and letting the children know when and how to actually wash their hands. With respect to why they incorporated hand-washing into their class activities, participants noted that hand-washing helps curtail the spreading of colds and germs and also helps the children to develop good life skills later in life. One teacher noted:

Teacher: Children are curious about their bodies, and when questions arise, we find books with answers and plan related learning experiences. Talking about washing hands and how germs spread helps children develop a healthy lifestyle and keeps colds from spreading in the room.

Another teacher wrote:

Teacher: Washing hands is a good life skill for the general public. Teaching them about washing their hands helps to keep the kids healthy and to keep others healthy. This is why I make sure to talk about it every day.

Thirty-two percent of the research participants noted that they incorporated activities on hand-washing daily because they considered it very important to the children's health. One participant noted:

Teacher: I make sure I talk about hand-washing every day because the children's life generally depends on it. If they go to the bathroom and they don't wash their hands properly, they can spread germs; they themselves can fall sick. It is one health lesson I always make sure to emphasize daily.

Given the fact that only 32% of the participating preschool teachers incorporated hand-washing in their class activities, and in view of hand-washing being a necessary condition for ensuring preschoolers' safety and optimal health, it is incumbent upon teacher educators and directors of preschools to ensure that appropriate knowledge on when, how, and with what to wash hands is passed on to

teachers to enable them to impart such knowledge on to the preschoolers. Such knowledge can be made part of the teacher-training curriculum or, in case of preschool teachers already in the classrooms, through workshops and symposia.

Discussion of Germs

Germs associated with cold and flu may be spread from person to person through *droplet spread* such as is associated with respiratory droplets of coughs and sneezes (CDC 2000). Germs can also be spread when a person touches droplets on the surface of desks, doorknobs, cafeteria tables, etc. and then touches her own eyes, mouth, or nose before washing her hands. According to the CDC, addressing the spread of germs in schools is essential to the health of the students. Germs have a considerable adverse effect on U.S. education (CDC 2000). Flu, for example, is known to cause the highest rate of absenteeism with nearly 22 million school days being lost each year to the common cold alone. To stop the spread of germs, the CDC advises people to cover their mouths and noses during coughing or sneezing and to clean their hands after coughing, sneezing or doing anything that is capable of spreading germs.

Twenty-one percent of the participants surveyed in this study incorporated activities on discussion of germs in their class. The participants noted that they viewed the discussion of germs as important because of the health hazards associated with germs of all kinds. Furthermore, they noted that they incorporated the discussion of germs twice per week because the nature of their classroom setup made children come into contact with one another thereby creating a situation in which germs could easily be spread. A teacher remarked:

Teacher: I tell the children at least twice or sometimes three times every week about what germs are, how people come into contact with them, and more especially how to avoid spreading germs. I even talk about how to get rid of them after coming into contact with them. The problem is that if they do not know about the presence of germs they will be careless in how they live. Some may even pick up and eat food that they accidentally drop on the floor.

Another teacher noted:

Teacher: It is dangerous not to teach about germs. I personally think every preschool teacher should teach about germs twice every week. I believe that most diseases in children are caused when they come into contact with germs. These children have to learn about germs early so that they will become aware of them and lead hygienic lives.

Given the considerable adverse impact that the spread of germs (through such sicknesses as cold and flu) has on the U.S. educational system, it is important for preschool teachers to emphasize the teaching of personal cleanliness in general and discussion on germs in particular. A good way of emphasizing the teaching of controlling the spread of germs is to make such a topic an essential part of teacher education curriculum. This will help preschool teachers to understand the behavior of germs and ways of curtailing their harmful effects on preschoolers.

Covering the Mouth during Coughing

To help curtail the spread of germs, the CDC (2000) recommends that during coughing, it is essential to cover one's mouth with a tissue and to put the tissue in a wastebasket. The CDC notes further that in the absence of a tissue, one must cough into one's upper sleeve, not into one's hands. To ensure one's safety and the safety of others around, it is important to wash one's hands with soap and water after coughing and then clean one's hands with alcohol-based hand cleaner. In cases where the person coughing has a serious respiratory illness like influenza, respiratory syncytial virus (RSV), whooping cough, or severe acute respiratory syndrome (SARS), the CDC recommends that such an individual must put on a surgical mask in order to protect others from contracting the illness.

An observation of the data suggests that 16% of the teachers included activities focusing on mouth covering during coughing in their classrooms. Most of the teachers who did this activity said that the activity was done three or four times per week. One teacher said she considered this activity the most important health and safety issue. She said:

Teacher: Because of the danger in spreading disease through coughing, I make sure I do activities on it at least four times per week. I want the children to know that coughing, and more especially, spitting around anywhere can lead to the spread of disease. It is an important health and safety issue and every teacher must include it in their health activity lesson.

Most of the teachers did activities on coughing twice per week. One teacher noted that activities on coughing helped to prevent the spread of germs and virus when someone had a bad cold or a bad cough. Another teacher indicated that she actually demonstrated the proper way of covering the mouth with one's palm with a tissue for the children in order to enable them learn by example.

An observation of the data shows that only 16% of the preschool teachers incorporated activities on coughing in their classes twice per week. The above situation could be rectified by giving teachers the needed skills that

emphasize health education in the above-mentioned fields of health; acquiring such a skill will help the teachers to teach about personal hygiene more professionally.

Glitter Germs

Cognizant of the fact that this particular activity involves the use of chemicals, it is incumbent upon preschool administrators to ensure that teachers get proper training in the performance of this activity. Specifically, teachers must have knowledge of which children (e.g., children with asthma) have allergies to the chemicals needed for this activity in order to either minimize or completely eliminate the occurrence of any possible disaster or accident.

Glitter germs, according to Sayre (2000), is a health activity during which the teacher sprays lotion on the hands of some children and applies some amount of *glitter germs* (a non-toxic chemical) on students' hands. The teacher then asks one of the students with the glitter germs to clean his or her hands with a paper towel only, another to clean with only cold water, and the third with soap and warm water. The child volunteers then tell which of them had all the glitter germs washed off completely—in this case the child who washed the hands with soap and warm water. According to Sayre (2000), a lesson on glitter germs helps children to demonstrate proper hand-washing with warm, soapy water. Through this lesson, the students get to learn first-hand that germs can be spread by not properly washing their hands. The lesson also enables children to understand that germs are smaller than their eyes can see. Finally, it enables the children to have a concrete example as to why they should wash their hands with soap and warm water.

About 9% of the preschool teachers who took part in this study reported incorporating glitter germs into their class schedules. The teachers who incorporated this activity into their class schedules noted that the activity was done twice per week. With respect to why they do such an activity, a female teacher noted:

Teacher: We do this activity in order to teach the children about germs and bacteria that come into contact with our bodies and the need to keep our bodies, especially our hands, clean in order not to get germs and bacteria associated with dirt into our bodies.

Proper Response to Sneezing

Like coughing, improper ways of handling sneezing have been known to cause the spread of germs that cause sickness. Specifically, improper ways of sneezing by people with respiratory, viral, or bacterial infections can

lead to the spread of such viruses and bacteria (CDC 2002). Ways recommended by health experts and health institutions such as the CDC for curtailing the spread of disease caused by sneezing are the same as those recommended for coughing, which include covering the mouth, preferably with a tissue, and placing the tissue in a wastebasket after use. As with coughing, experts recommend sneezing into one's upper sleeves if one does not have a tissue. Whether one sneezes into a tissue or one's upper sleeves, it is essential to wash one's hands with soap and water or to clean them with an alcohol-based cleaner after sneezing.

Close attention to the data shows that 7% of the participants incorporated activities on proper response to sneezing into their class activities. The main reason given by the preschool teachers for incorporating activities on proper response to sneezing was to prevent the spread of disease and to ensure that the children stayed healthy. Two teachers, both female in their late twenties, noted:

Teacher: I teach them that when they sneeze they must wipe their nose and wash their hands. If they wipe their nose and wash their hands properly, they prevent their germs from spreading to other children.

Teacher: It is important to teach them good manners about sneezing. They must have respect for others by not spreading their cold to them. If they sneeze by not covering and wiping their nose, germs will spread in the room and their friends will also be ill. It is a good age to teach them to care about others. They must recognize the need to avoid spreading disease through sneezing.

An observation of the data showed that activities on sneezing were, on the average, incorporated into class activities once per week because, as one teacher put it:

Teacher: The main thing about proper response to sneezing is to ask the child who sneezes to wipe the nose and wash the hands. Since we teach hand-washing more often, we believe response to sneezing is more or less covered.

As with coughing, given the dangers inherent in the spread of germs when proper hygienic ways of sneezing are not followed, and cognizant of the fact that only 7% of the participants incorporated activities on proper ways of sneezing into their class schedules once per week, it is recommended that teachers be provided with the necessary tools to help them gain more knowledge about pulmonary hygiene so that they can pass on such knowledge to the preschoolers. Educating the children during such formative years will likely make lasting impact on their lives.

Dental Health

According to the CDC (2000), tooth decay remains one of the most common diseases of childhood. It is five times as common as asthma and seven times as common as hay fever. Seventy-eight percent of 17-year-olds in the U.S. have experienced tooth decay (CDC 2000). Poor oral health, according to the CDC, is impacted by parental poverty. For example, in the U.S., one in four children and adolescents living in poverty suffer twice as much tooth decay as their more affluent peers, and their disease is more likely to go untreated. Even more significant is the fact that in the U.S. more than 51 million school hours are lost each year because of dental-related illness. Experts such as dentists and oral hygienists as well as institutions like the CDC, National Institute of Dental and Craniofacial Research, and National Center for Chronic Disease Prevention and Health Promotion, which are interested in children's oral health and overall well-being, call upon caregivers to put only water in a baby's bottle at bedtime or naptime. In particular, the above-mentioned experts caution that because prolonged exposure to sugary drinks increases the risk of tooth decay, caution is needed when and feeding them to children.

Caregivers are also impressed upon to encourage children to eat regular nutritious meals and to avoid frequent between-meal snacking. Finally, caregivers are asked to ensure that children wear helmets when bicycling and also use protective headgear and mouth guards in sports activities that have the potential to cause injury to the oral cavity.

Parents, for their part, are advised to take their children for an oral health assessment between ages 1 and 2 and every 6 months thereafter. They are also encouraged to protect their children's teeth with fluoride and to talk to their child's dentist about dental sealants, which are capable of protecting teeth from decay.

A close observation of the data for this study shows that activities on dental health were incorporated into class activities by 7% of the population sample. Some teachers were particularly worried by the prevalence of tooth decay in some of the children. A teacher noted that in order for the children to understand and see the impact of tooth decay first hand, she had pictures of decayed teeth and healthy teeth and used those pictures to let the children know what can happen to their teeth if they did not brush their teeth well and/or regularly. She noted:

Teacher: When the children saw the child with decayed teeth, and after I had explained what could happen to him, I could easily tell from their faces that tooth decay was something they wanted to avoid. One child said, "I'm going to clean my teeth every

morning and before I go to bed.” A little girl said: “I don’t want to be like him, pointing to the picture of the boy with the tooth decay.” You know, one good picture speaks more than a thousand words.

Although only 7% of the sample incorporated activities on dental caries, they did so usually on a daily basis. A teacher noted that caries cause embarrassment to the child suffering from them since some other children may occasionally say something bad about the child suffering from them. Another teacher remarked that she did activities on dental health on a daily basis because she considered it very important.

It is important to note that some participants did not include activities on dental hygiene in their class schedules because they felt dental health was primarily the parents’ responsibility. A teacher wrote:

Teacher: Parents need to take responsibility for their children’s dental health. I think as teachers we can remind parents of such a responsibility instead of taking it upon ourselves to teach it.

From the above excerpt and similar cases found in the data, it is recommended that both preschool teachers and parents get the necessary health skills and knowledge that will help them to deal with children’s dental care issues since their role in educating children on such issues is crucial to the children’s well-being.

Proper Use of the Bathroom

According to the American Association of Microbiology (1997), despite the fact that hand-washing is essential after using the bathroom because of the danger of catching and spreading germs that cause disease, one-third of people who use the bathroom do not wash their hands afterwards. Collins (1997) quotes the *American Journal of Infectious Disease Control* in saying that elementary school students who used proper hand-washing hygiene missed 2.42 days of schooling, whereas those who did not use proper hand-washing hygiene missed 3.02 days per year. Thus, proper ways of using the bathroom has the potential of ensuring less absenteeism and consequently increasing school attendance.

On the duration of hand-washing after using the bathroom, experts believe that it is important to wash one’s hands for 15 to 20 s (CDC 2000) in order to ensure the elimination of germs that could possibly cause sickness.

Despite the importance of proper bathroom hygiene in ensuring safety, only 4% of the participants in the current study incorporated activities on proper use of the bathroom in their classroom schedules. Teachers who incorporated proper use of the bathroom into their daily classroom

routines noted that the actual activities involved assisting children who needed help in real life to use toilets, wash their hands after using the toilets, and use paper towels after using the bathroom.

An examination of the data indicates that there were some teachers who felt that they were not responsible for educating children on such a health-related activity as the proper way of using the bathroom and were therefore reluctant to lead such activities. For example, a teacher who did not do any activity on proper use of the bathroom noted that it was unnecessary at that level because all the children in her class were potty-trained and had passed the age where they needed her assistance.

It is important for teachers to note that children who are potty-trained may need some help in other aspects of proper use of the bathroom; such aspects of health education should be taught or incorporated into their classroom activities even if the children are potty-trained.

Keeping Things out of the Mouth

The Centers for Disease Control, the American Academy of Pediatrics, the National SAFE KIDS Campaign, and the American Medical Association all speak about the risks such as choking, airway obstruction, and possible death that children face when they put things in their mouths.

According to the CDC (2002), the need to teach caregivers about ways of preventing choking is called for due to the numerous deaths and emergency room visits each year by children that result from choking. A study done by the CDC notes that in 2000, 160 children aged between 0 and 14 years died from an obstruction of the respiratory tract due to inhaled or ingested foreign bodies. In 2001, 17,537 children ages 14 years or younger were treated in U.S. emergency departments for choking episodes (CDC 2002). Forty percent of the choking episodes reported in the CDC’s study were caused by children putting foreign bodies such as coins and candies in their mouths.

To help reduce the risk of injury or death associated with choking, the CDC and other pediatric experts call on caregivers to watch their children carefully when they are eating and playing. Caregivers are also called upon to ensure that dangerous toys, foods, and household items are kept out of the reach of children. Finally, the CDC, the American Medical Association, and the American Academy of Pediatrics call on caregivers to learn more about ways of providing early treatment for children who are choking.

From the data used in this study, only 4% of the preschool teachers incorporated activities on *keeping harmful things out of the mouth*. The teachers who incorporated activities on keeping harmful things out of the mouth indicated that they checked the children regularly to ensure

that things were kept out of the mouth. They also talked about the danger associated with putting things that might be dangerous into the mouth. A teacher noted:

Teacher: I make sure that I teach the children about keeping harmful things out of the mouth. I give more attention to children with special health care needs about not putting things in their mouths, because they have the tendency to put things in their mouth more frequently than the other children. If you don't keep reminding them, you can have a tragedy, and that will be bad for everybody

Only 4% of the participants did activities on choking. In view of the numerous deaths and emergency room visitation by children due to choking, it is recommended that teachers be encouraged to do more lessons on choking. In particular, the recommendation by the CDC and other experts for caregivers to prevent and treat choking must be taken seriously to help reduce the risk of injury or death associated with choking.

Summary and Implications for Practice

An observation of the excerpts and the results of the survey indicate that some of the participants made a concerted effort to incorporate some health topics into their classroom activities. The fact that high percentages of the participants incorporated activities on hand-washing and discussion on germs in their class lessons is commendable given the potential dangers posed to the lives of preschoolers if the teaching of such health activities are neglected by caregivers (Thompson 1994).

However, even though research shows the considerable importance of dental health in children's health and well-being (Du et al. 2007) most of the participants did not incorporate activities on dental health. This has implications for practice. Dental disease was reported by the Surgeon General of United States (see U.S. Department of Health and Human Services 2000) as the most common chronic childhood disease in 2000. Proper attention to the teaching of dental health will help children to lead healthy lifestyles.

Furthermore, although choking is common among children and can be life-threatening, only 4% of the preschool teachers did activities on *keeping things out of the mouth* in their classes. Also, a low percentage of teachers incorporated activities on sneezing and covering the mouth

during coughing despite the preponderance of scholarship showing the danger of spreading bacteria and allergens (in child care areas) if proper ways of sneezing and of covering the mouth are not followed during coughing (Bisgaard and Szefer 2007). The above issues also have considerable implications for practice. Specifically, they call on school directors, principals, and all stakeholders to ensure that teachers implement an appropriate health curriculum. They also call for the inclusion and intensification of health education at all levels of teacher education.

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