Reduction of Illness Absenteeism in Elementary Schools Using an Alcohol-free Instant Hand Sanitizer

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ABSTRACT: Hand washing is the most effective way to prevent the spread of communicable disease. The purpose of this double-blind, placebo-controlled study was to assess whether an alcohol-free, instant hand sanitizer containing surfactants, allantoin, and benzalkonium chloride could reduce illness absenteeism in a population of 769 elementary school children and serve as an effective alternative when regular soap and water hand washing was not readily available. Prior to the study, students were educated about proper hand washing technique, the importance of hand washing to prevent transmission of germs, and the relationship between germs and illnesses. Children in kindergarten through the 6th grade (ages 5–12) were assigned to the active or placebo hand-sanitizer product and instructed to use the product at scheduled times during the day and as needed after coughing or sneezing. Data on illness absenteeism were tracked. After 5 weeks, students using the active product were 33% less likely to have been absent because of illness when compared with the placebo group.

KEY WORDS: absenteeism, alcohol-free hand sanitizer, double blind, elementary schools, hand cleanser, hand washing, illness reduction, student

INTRODUCTION

Hand washing is the most effective method for preventing hand-borne transmissible illness. Time constraints and the frequent lack of soap, towels, and sinks in many school locations pose a problem when trying to encourage students and staff to practice good hand washing habits and technique. Research supports the finding that hand washing reduces both the carriage of pathogens on the hands and hospital-acquired (nosocomial) infections (Larson, Early, Cloonan, Sugru, & Parides, 2000). A mathematical model of the dynamics of transmission of nosocomial infections was used to examine the spread of a hand-borne nosocomial pathogen, *Staphylococcus aureus,* in a general medical ward (Cooper, Medley, & Scott, 1999). Using that model, even moderate increases in the frequency of effective hand washing were sufficient to control infections caused by endemic organisms. In a review of the link between hand hygiene and hospital-based infections, Larson (1999) found evidence for a causal relationship between good hand hygiene and reduced pathogen transmission.

Schools, like hospitals, have close, crowded environments with many inanimate objects that can act as vehicles of disease transmission. These factors, together with a lack of facilities and time for adequate hand washing, predispose the school environment for the transmission of microorganisms and associated infections among students. Although it is well established that transmissible microbial infections of the respiratory and gastrointestinal tract cause a large percentage of school illnesses, few reports have examined the benefits of an effective hand-cleansing program in

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elementary schools in relation to reducing school-acquired illnesses. The reports that do exist are striking. In the progression of the food-borne illness outbreak of *E. coli* O157: H7 in New York in 1993, hand washing was found to be the most important factor in preventing the secondary spread of the infection. Of the over 900 children primarily infected with the pathogen, only 10 received the infection secondarily from the initially infected students (Tucker, 1993). Other studies have concluded that scheduled hand washing reduces acute communicable illnesses in school-age children (Monsma, Day, & St. Arnaud, 1992; Black, Aubert, & Kern, 1981; Pete, 1986). Compliance with hand washing in U.S. schools, however, is difficult because many classrooms lack basic facilities for proper hand washing. Furthermore, even with proper facilities, the time required, about 60 seconds each, for 20 to 30 students to complete the task of minimal hand washing would significantly interfere with instruction time (Master, Hess-Longe, & Dickson, 1997).

In response to the need for hand sanitization in situations where soap and water are not readily available and time is limited, antimicrobial rinse-free hand sanitizing formulas have been developed. One open-label study (i.e., subjects were privy to product information about the solution they were using) of the effectiveness of an ethyl-alcohol gel instant sanitizer indicated that the product decreased illness absenteeism by approximately 20% (Hammond, Ali, Fendler, Dolan, & Donovan, 2000). Alcohol-based hand sanitizers are effective for occasional use, but long-term, frequent use of the alcohol products can cause skin irritation (Grove, Zerweck, & Heilman, 2000). Frequent use of alcohol-based sanitizers also hinders the product effectiveness and can leave the hands more susceptible to microbial contamination (Dyer, Gerenraich, & Wadhams, 1998). Furthermore, after an alcohol sanitizer dries, no germ-killing agent remains on the skin. It is therefore readily recontaminated with microorganisms. In addition, alcohol-based sanitizers are flammable and will irritate eyes and open wounds. Products with this active ingredient are therefore undesirable in schools or on school buses, as they can present a safety hazard to children. For these reasons, an alcohol-free, water-based, benzalkonium chloride instant hand sanitizer was chosen for this study. It is nontoxic, nonflammable, and provides a significant antimicrobial persistence of activity.

Theoretical Framework

The motivation for this study came from a desire to overcome the barriers for handwashing found in the schools. Facilities, time, and general attitudes related to handwashing contribute to noncompliance and the inadequate practice of hand washing.

A theoretical framework can sometimes help in understanding why people act as they do. The Health Belief Model (HBM) was described by Rosenstock, Strecher, and Becker (1988) as an appropriate framework when looking at health behaviors. It is made up of seven components that, when used together, may allow the evaluation of the likelihood that a person might develop or practice a behavior that involves their health. The seven components include: (a) Perceived Susceptibility—the degree to which an individual feels susceptible to contracting a given condition; (b) Perceived Severity—the level to which a person perceives the condition to be serious; (c) Perceived Benefits—the degree to which a person believes that action to prevent a condition will be effective and beneficial; (d) Perceived Barriers—if an action is perceived to be costly, uncomfortable, inconvenient or dangerous it may not be seen as a viable action; (e) The effect of other variables such as sociopsychological, demographic, and structural factors, which influence the first four components, (these can include age, education, attitudes, and culture); (f) Cues to Action—all the things that encourage a person to take action in a given situation; and (g) Self Efficacy—a person's belief that he or she can take action successfully.

Testing to see if the alcohol-free, instant hand sanitizer was effective in reducing illness absenteeism could give us an alternative to regular handwashing when time and facilities make it impractical or impossible. Even when facilities, or an alternative, are available they are of little value if unused. Using this framework to understand the low rate of handwashing compliance in the schools, and in society in general, could be useful in devising a plan to help people develop good, lifelong hand-cleansing habits.

Research Questions

This research was initiated to investigate (a) whether the scheduled use of an alcohol-free instant hand sanitizer could have a positive effect on the attendance of students in elementary schools, and (b) whether an alcohol-free instant hand sanitizer could be considered an effective alternative to regular hand washing when hand washing is not feasible.

In a previous 10-week, open-label study of an alcohol-free instant hand sanitizer containing surfactants, allantoin, and benzalkonium chloride (SAB sanitizer) in which test and control groups were reversed halfway through the study (crossover study), overall illness absenteeism decreased by 40% (Dyer, Shinder, & Shinder, 2000). In addition, no adverse effects attributed to product use were reported.

METHODS

Research Design

Due to the inherent disadvantages of alcohol-based instant hand sanitizers, the investigators chose to use an alcohol-free instant hand sanitizer (SAB formula-

tion). This study was modeled after a study performed previously by Dyer et al. (2000). To address the need for further study of the same SAB formulation's effectiveness in reducing illness-absenteeism in a school setting, a 5-week, double-blind, placebo-controlled study was conducted. This included a structured hand-hygiene education program employing programmed use of the hand sanitizer with current patterns of at-will soap and water hand washing practices.

Table 1. Proper Hand Washing Technique

1. Dispense paper towel for drying after washing.
2. Turn water on and wet hands.
3. Dispense soap and wash hands vigorously. Pay attention to palms, backs of hands, between fingers, and under the fingernails. Wash for 10–15 seconds.
4. Rinse hands completely.
5. Dry hands with already-dispensed paper towel.
6. Use paper towel to turn off water.
7. Use paper towel to open restroom door.
8. Dispose of paper towel in the nearest trash can.

Sample, Sampling Procedures, and Setting

The study was conducted simultaneously at one private and two public elementary schools in California. Children (n = 769) in kindergarten through 6th grade classes (5 to 12 years old) were included in the study. Each classroom had an enrollment of 20 to 30 students. Children with known allergies to any of the ingredients in the SAB sanitizer were excluded from the study. The study was reviewed and approved by the school boards at both institutions and by the coordinating nurse in the public schools. Prior to study initiation, school administrators were approached, study sites were selected, and an orientation process was implemented. Faculty, office, and custodial staff were informed of the purpose and nature of the study. The teachers were sent a letter explaining the goals and objectives for their participation. The research team provided further explanation of faculty roles, the importance of hand hygiene, and study procedures and protocols at a regularly scheduled faculty meeting at each school site. The direct benefits of teacher cooperation and adequate modeling of good hand hygiene were strongly emphasized during each of the faculty meetings.

The rewards of a healthy classroom were explained to motivate teachers to promote and actively encourage participation in good health and hand hygiene practices. The health benefits discussed with faculty members included improved personal health (teachers, staff, and their families) and empowerment to break the infection-reinfection cycle that occurs in classrooms throughout the academic year (by conscientiously encouraging and regularly practicing good hand hygiene). Teachers and other adult role models in the school system were considered the key to the success of the hygiene program.

Additional motivation was achieved by stressing that attendance is the single most important factor affecting academic achievement (Hall, 1998) and improved student health increases attendance and decreases the demands on teacher time for remediation after student illness. Further academic benefits mentioned included the ability to cover required curriculum more quickly, providing opportunities for instruction of elective materials, and greater academic achievement for individual students and the class as a whole. In addition, the research findings establishing that improved attendance results in improved standardized test scores were presented. The investigators also discussed with the faculty the financial benefits that are appreciated with improved student health. Benefits cited included (a) decreased costs to the district for substitutes when teachers are out for personal or family illness, (b) decreased costs for remedial programs for students with repeated illness absences, and (c) increased average daily attendance (ADA) revenues that provide funds lost when students are absent.

The researchers presented an overview of the study to the office staff from each school and explained their role in classifying and recording absences. The district nurse informed parents about the purpose and nature of the study by letter, which was accompanied by a detailed informed consent form. Parents were invited to attend an open meeting where questions about the study would be answered. Parental attendance at these meetings was minimal and primarily involved parents who objected to the idea of using any chemicals to clean hands.

Incentives for returning consent forms in a timely manner were offered to the students by some classroom teachers. Telephone calls were made to students' parents who had not returned the consent form. Completed forms were obtained from all parents for participating and nonparticipating students; each teacher received a list of nonparticipants in his or her classroom. No pressure or incentives were offered for active participation, and signed parental requests for nonparticipation were accepted without question. Students excluded from the study did not receive active or placebo test products during the course of the study, and their attendance was not included in the results.

Children were randomly grouped by classroom. In all, 381 students received the instant sanitizer, and 388 received the placebo. Male/female ratios and age distributions of the study groups did not differ significantly. Two weeks prior to study initiation, all students attended a 22-minute assembly on proper hand washing technique (see Table 1), the importance of washing hands with soap and water to prevent the spread of illnesses, and the relationship of germs to illness. Students were taught new coughing and sneezing behaviors. They were instructed to cough and

sneeze into their cuff, sleeve, or elbow instead of covering their nose and mouth with their hands (Unger, 1996). During the assembly, students viewed a 4-minute educational videotape, *The Sneeze: How Germs Are Spread* by Francois Chew (Aimes Multimedia, 1996), which illustrated the hand-to-hand spread of germs between people.

SAB Sanitizer and Placebo Formulations

A water-based composition containing nonionic and amphoteric surfactants, allantoin, a mild skin emollient, and the active ingredient benzalkonium chloride (SAB) (Chodosh, 1997) was used as the test compound in this study (Woodward Laboratories, Inc., 1998). The placebo formulation consisted of a solution of nonionic and amphoteric surfactants with allantoin, but without benzalkonium chloride or preservative compounds. The SAB formulation is effective against a wide variety of pathogens, including gram-positive and gram-negative bacteria, mold, fungi, and a variety of viruses, including haemophilus influenza, lipid-encapsulated viruses (e.g., the Herpes Simplex virus) and Hepatitis B virus.

The SAB hand-sanitizer surpasses the FDA performance standards for health-care personnel hand washes. It meets the criteria for inclusion into the Health Care Continuum Model (HCCM), a performance-based standard developed by the industry to assist the FDA in the classification of topical antimicrobial drug products. The performance criteria state that the product (a) is fast acting, (b) has a broad antimicrobial spectrum, (c) displays persistence of activity, and (d) is effective under a heavy bacterial soil load (Food, Drug, and Cosmetic [FDC] Tan Sheet, 1998; Dyer, Gerenraich, & Wadhams, 1998; FDA, 1994). The placebo was inactive in both standard in vitro and in vivo antimicrobial tests (Woodward Laboratories, Inc., 1998), but was virtually indistinguishable in aesthetic characteristics from the SAB sanitizer. To distinguish contents, both the active and placebo formulations were distributed in four color-coded groups of 1-oz spritz bottles. The contents and distribution patterns were known only to the researchers and were indecipherable by the school staff or students.

Formulation Use

Children in both the study (SAB sanitizer) and control (placebo) groups received a 1-oz bottle of the appropriate formulation fitted with a pump-spray top that facilitated reproducible product dispensing and dispersion. Students were instructed to use the test formulation under teacher supervision to supplement normal (current pattern of utilization), at-will hand washing with nonmedicated (nonantibacterial) soap and water. The study was designed for practical use, 6 times per day, in a classroom setting. The times determined for sanitizer use were (a) immediately upon entering the classroom, (b) before and after eating (recess and lunch), and (c) before leaving class at the end of the school day. Additional use was suggested after any child sneezed or coughed in the classroom.

Table 2. Absence Symptoms Categorization

Category	Symptom
Gastrointestinal illness (GI)	Vomiting, abdominal pain, diarrhea
Respiratory illness (R)	Cough, sneezing, sinus trouble, bronchitis, fever alone, pinkeye, headache, mononucleosis, and acute exacerbation of asthma
Other/nonillness related (O)	Vacations, nontransmissible urinary tract infections, sprained or broken limbs

Students were also instructed to wash hands at-will with nonmedicated soap and water using proper hand washing technique when hands were soiled, after restroom use, and whenever necessary and possible throughout the day. At-will hand washing was not supervised; however, the custodial staff at all school sites received a mandate to maintain adequate soap and paper towel supplies throughout the study period.

Prior to the start of the study, teachers were given the choice of directly dispensing the test products themselves onto students' hands or letting the students self-apply. All teachers chose to let students self-apply the test products at the appropriate times during the day. The teachers were instructed to verbally remind students when to use the SAB or placebo formula and to visually monitor the application process. There were no reports of inappropriate product use.

The formulations were applied by pushing the pump once and spraying into the palm of one hand (approximately 0.25 ml). The hands were then rubbed together using proper hand washing technique: covering the palms, backs of hands, between the fingers, fingertips, and around the nails until dry.

Data Collection

Data were collected for a 5-week period from March to April 1999. Teachers were responsible for recording attendance each day during the study. Parents provided detailed information on the nature of a student's absence to the school office during the study. If the absence was for illness, a description of the symptoms was obtained. Absences were counted as either gastrointestinal, respiratory-related, or "other" nontransmissible illness and nonillness related symptoms (Table 2).

Tabulated categories included the number of classes, the number of participating students, and the total number of possible days of attendance, defined as the number of students in the study group multiplied

Table 3. Student Absence Data

Absences	Total		R-related		GI-related	
	Placebo	SAB	Placebo	SAB	Placebo	SAB
Number of classes	16	16	16	16	16	16
Participating students	381	388	381	388	381	388
Possible days of attendance	9,459	9,615	9,459	9,615	9,459	9,615
Absence incidence	145	96	101	69	44	27
Days of illness	222	153	155	108	67	45
Different students absent	88	74	66	50	22	24
Days absent per student	2.5	2.1	2.4	2.2	3.1	1.9

Note. SAB = alcohol-free instant hand sanitizer; R = respiratory illness; GI = gastrointestinal illness.

by the number of study days minus the number of days of ''other'' absences. Absence classification categories included the number of absence incidences (discrete illness periods per student), the number of days of illness absence (absence caused by communicable illness), the number of different students absent, and the number of days absent per student.

Data from compliant classrooms demonstrating minimum adequate product use (at least 3 uses per day) were retained for analysis. Product use was monitored by collecting and weighing individual bottles at the beginning, midpoint, and at the end of the test period. Of the 72 initial classes involved in the study (1,626 student participants), 32 classes (16 active and 16 control; 769 student participants) were retained for analysis. The remainder of the classes were dropped from the data analysis because of noncompliance with minimum adequate product use standards.

RESULTS

Relative risk of absences (RRA) represented the normalized risk of illness-related absenteeism in the study group compared with the control group. This calculation normalized the illness absenteeism in each group for the total possible days of attendance and was calculated as follows:

$$\mathrm{RRA} = \frac{\mathrm{A_s/T}}{\mathrm{A_c/T}},$$

where A_s = absences (sanitizer group); A_c = absences (control group); and T = total possible days of attendance.

Statistically significant differences between the test groups were determined by chi-square analysis. Briefly, chi-square analysis is used for analysis of qualitative data (counted data). The null hypothesis, in which there is no difference in absences between the treatment and the placebo groups, is rejected if the variation between the groups (as determined by chi-square analysis) is greater than that expected by chance. Significance values less than 5% ($p < .05$) generated by chi-square analyses indicate that a significant difference between the groups exists for a given parameter, such as illness absence days.

Of the total absences in the 5 weeks of the study for the sanitizer-using group, 29.4% were due to gastrointestinal illness and 70.6% were caused by respiratory illness. This distribution was comparable to the control group where 30.2% were caused by gastrointestinal illness and 69.8% were related to respiratory illness.

As shown in Table 3, the total number of days of illness-absence was significantly lower in the study group (31.1%; $p < .001$) than in the placebo group. Absence-incidence in the study group was approximately 33.8% ($p < .001$) lower than the control group. Total gastrointestinal and respiratory-related absences were decreased by 32.8% ($p < .01$) and 30.3% ($p < .001$), respectively, compared with the control group. Similar decreases in gastrointestinal and respiratory absence-incidences were observed in the study group by 38.6% ($p < .01$) and 31.7% ($p < .01$), respectively, as compared with the placebo group (see Figure 1). The relative risk of illness absence incidence and illness absence duration decreased by approximately 30% in the treatment group as compared with the placebo group (Table 4).

Throughout the study, students were monitored by teachers and parents on at least a weekly basis for adverse reactions to the instant hand-sanitizer such as edema, rash, or erythema. Participants were instructed to discontinue product use if there was any indication of adverse reaction. Seven students were removed from the study after teachers or parents reported changes in skin condition such as chapping and/or redness.

DISCUSSION

The results from this study indicated the SAB sanitizer use, in conjunction with at-will hand washing with nonmedicated soap, significantly decreased illness-absenteeism in terms of total absence days and absence incidence. Furthermore, the relative risk of absence for students in the sanitizer group was 31.1% lower than that of students in the placebo group. Use of the SAB sanitizer was demonstrated to be equally effective in decreasing both respiratory- and gastrointestinal-related absences.

In an ideal world, people would understand the importance of hand washing and would be able to wash their hands as often as necessary. Previous investiga-

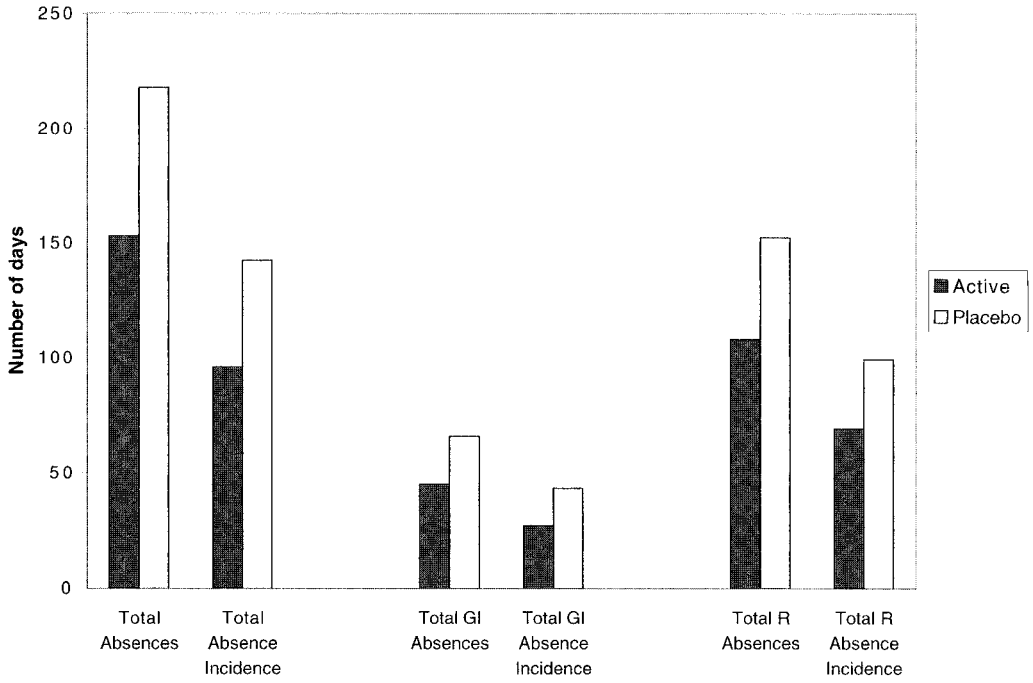

Figure 1. Combined absences and absence incidences. Light bars indicate control group; dark bars indicate SAB hand-sanitizer use group. All SAB sanitizer use group measures were statistically significant ($p \leq .05$; see text).

Table 4. Relative Risk of Illness Absence Incidence and Illness Absence Duration

	Relative Risk of Absence (SAB vs. Placebo)	SAB Advantage Over Placebo (%)
Illness absence duration		
GI illness	0.68	32
R illness	0.71	29
Total	0.70	30
Illness absence incidence		
GI illness	0.62	38
R illness	0.69	31
Total	0.67	33

Note. SAB = alcohol-free hand sanitizer; GI = gastrointestinal; R = respiratory.

tors have found that basic soap-and-water hand washing prevents the spread of infection and should be encouraged as a standard infection control measure (Master et al., 1997). They found that programmed hand washing significantly decreased overall illness absenteeism (25% reduction; $p \leq .05$). In spite of this and other similar findings, hand washing is not consistently practiced or promoted in public schools (Black et al., 1981; Gwaltney, Moskalski, & Hendly, 1978; Master et al., 1997; Monsma et al., 1992; Pete, 1986). The main reasons include (a) a lack of proper and convenient washing facilities, such as sinks in classrooms, soap, and paper towels consistently available; (b) the time requirement for proper hand washing; and (c) ambivalence toward hand washing (Black et al., 1981; Gwaltney et al., 1978; Master et al., 1997; Monsma et al., 1992; see Table 5). Misunderstandings about the importance and benefits of hand washing are not limited to the school environment. Surprisingly, even among healthcare professionals with specific education about the importance of hand washing, failure to wash adequately is prevalent. For example, a 6-week observational study of hand washing and infection control practices in a community teaching hospital revealed that hand washing compliance was approximately 56% in surgical units, 39.2% in medical intensive care units, 30% in intermediate care units, and 22.8% in general units (Watanakunakorn, Wang, & Hazy, 1998). Another study found hand washing compliance among hospital medical staff to be between 10.6 and 12.4% (Tibballs, 1996). To improve general hygiene and health, the issue of societal ambivalence toward hand washing must be addressed.

LIMITATIONS OF THE STUDY

Limitations of the study included a lack of a crossover confirmation where there would have been a "washout" period followed by a reversal of the study and placebo groups, and a loss of a large portion of the original study participants due to a lack of compliance in many of the study classrooms. Of the nearly 1,700 possible participants, only 769 were actually used for data collection.

Furthermore, soap and water hand washing was not monitored. It is therefore possible the results yielded in this study were in part due to children only using the active or placebo hand sanitizer without soap and water washing versus using both methods of hand hygiene. In both study groups, however, at-will hand washing with soap and water was recommended

Table 5. Barriers and Solutions for Hand Washing in Schools

Barrier	Solution
Inadequate washing facilities/materials	• Increased school funding and/or space. • Education on benefits of hand washing. • Education on proper use of facilities. • Proper placement of materials to decrease accidents and misuse. • Facilities monitors (student germ patrol) promotes respect for facilities. • Appropriate (effective alcohol-free) instant sanitizer can be used when facilities are lacking.
Inadequate time for proper hand washing	• Build time into school day to accommodate hand washing. • Use an appropriate (effective alcohol-free) instant hand sanitizer.
Attitudes/lack of understanding about the importance of hand washing	• Emphasize the benefits of good hand washing, including: **health benefits** (improved personal health [and family members], breaking infection/reinfection cycle in classroom); **scholastic benefits** (increased student attendance facilitates covering required curriculum—could allow time for electives, improve standardized test scores for class as a whole); and **financial benefits** (decreased costs for sick teacher and substitute teacher compensation, decreased costs for remedial education, and increased revenue from reimbursement for attendance funds).

equally and simultaneously and reinforced by providing educational material on the importance of hand washing. Also, soap and water hand washing compliance in school populations has been shown to range from 8 to 28% (Guinan, McGuckin-Guinan, & Sevareid, 1997). Furthermore, control group baseline absences in the present study were similar to those reported previously (Master et al., 1997). Therefore, it is likely that unmonitored soap and water hand washing was similar and minimal for both groups in this study.

Many of the teachers were convinced that their class had the placebo product and seemed to become discouraged and tired of the research study. Because teachers have so much to accomplish in a very short time, many of them viewed the study as an imposition. A better understanding of the reasons people develop the attitudes they have about hand washing would help school nurses and health educators know how best to address these attitudes and promote hand washing as an important life-long habit.

IMPLICATIONS FOR SCHOOL NURSING PRACTICE

At a time when many schools are reimbursed only for students who are actually in attendance and when test scores are weighted so heavily, the opportunity to demonstrate that nurses can have an impact on attendance and academic performance is of extreme importance to the specialty of school nursing. Anything that will improve student health and maximize learning by having healthy students in attendance is well worth the commitment of time and energy. Demonstrating that school nurses can positively affect a district financially and academically by providing a way to help students, teachers, and their families enjoy optimal health is of great significance when many districts view nursing services as optional or dispensable during times of budgetary crises.

The goal of having students and the adults who work with them understand the simplicity and value of hand washing is practical and reasonable. Health education programs that teach an appreciation for this effective health practice after using the restroom; after coughing, sneezing, or blowing their nose; before preparing or eating food; after handling animals; and when hands are obviously soiled, are essential. Empowering people to be bold in holding themselves and others accountable for good hand hygiene practices will maximize health in the school environment and deserves high priority in the delivery of school nursing services.

The effectiveness of hand washing has been proven. Utilizing the findings of this study will assist school nurses to apply their efforts and resources where they can do the most good for the greatest number of students. Instructing, encouraging, reinforcing, and role modeling are all skills basic to nursing. Perhaps a simple remedy to the problem is seen as just that—too simple. With hand hygiene, however, simple is effective and needs to be reinforced frequently. Certainly the question of how much reinforcement is needed to produce a life-long habit is a topic for further study, but sufficient information is available so school nurses can confidently promote one of the first lessons learned in nursing school—wash those hands!

This study brought the research process into the classroom. It demonstrated there are simple ways to overcome obstacles to adequate hand washing in the schools, and there is a safe, effective product available when time or facilities do not permit regular hand washing.

SUMMARY

The school nurse, as the health liaison to the school community, has the opportunity to educate and inform key individuals—such as school board members, administrators, teachers, staff, parents, and students—

about issues related to student health and well-being. Improved health practice in everyday life is the goal of everyone's cooperative efforts. The benefits of good hand hygiene simply cannot be ignored.

Obstacles to adequate soap and water hand washing in schools are numerous. Although changing attitudes toward hand washing requires focused effort, education, and time, the limitations of class time and facilities are more easily overcome. This study determined that use of the alcohol-free SAB instant hand sanitizer with current at-will soap and water hand washing significantly decreased absences due to common communicable illness. These results demonstrate that the use of an alcohol-free SAB instant hand-sanitizer optimizes student attendance with minimal detraction from instruction time. Furthermore, when standard hand washing facilities are not available or readily accessible, this study shows that an efficacious alcohol-free instant hand sanitizer can be used in the school setting. Students, schools, and the community can benefit from improved health and increased attendance that good hand hygiene provides.

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