

Knowledge, Attitude and Practice of Personal Hygiene among adolescent in Bangkok, Thailand: A cross sectional study

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Abstract: Background: Personal hygiene is one of the key foundations of infection prevention and control. Poor personal hygiene attributed to inadequate knowledge.

Purpose: To assess personal hygiene knowledge, attitude, and practice

Methodology: This was a cross-sectional observational study. An online questionnaire was purposely developed and made available through Google Form between 1 Jun 21 and 30 Jun 21.

Findings: A total of 158 responses, all were male participants, and most participants were studying in grade 12 (n=88,55.7%). Participants showed a moderate level of personal hygiene knowledge, correctly answering on the average score of 10.91 (SD=2.14). Participants revealed a favourable attitude toward personal hygiene at an average score of 4.63 (SD=0.67). Participants reported a moderate level of personal hygiene engagement at an average score of 50.18 (SD=6.21) from 14 hygiene practices analysed. Grade 10 students had the highest average knowledge, attitude, and practice average scores of 11.16 (SD=1.78), 4.63 (SD=0.67) and (M=51.87, SD=6.07) respectively.

Having a positive attitude toward personal hygiene predicted the adoption of those personal hygiene (EXP B= 0.201, p<0.01).

Conclusion: Participants revealed moderate knowledge about personal hygiene, favourable attitude, and moderate level of personal hygiene practice. There was a statistically significant positive correlation between hygiene practice and knowledge and attitude toward personal hygiene. Attitude toward personal hygiene was a predictive factor for personal hygiene practice adoption. Hence, in order to improve personal hygiene practice among students, personal hygiene practice should be promoted by enhancing students' knowledge and attitude through classes or activities both at schools and by their parents at their homes as students are more receptive to learning and are very likely to adopt healthy behaviors at a younger age.

Keywords: Personal hygiene, adolescent, secondary school students.

1. INTRODUCTION

Personal hygiene plays a major role in promoting a healthy life. Personal hygiene has long been a major public health issue. Hygiene refers to practices associated with ensuring good health and cleanliness. Personal hygiene is the practice of keeping the body clean. Good hygienic care as well as practices in terms of personal hygiene contributes to a large extent on factors relating to healthful living and prevention of hazards from diseases. These health risk factors are directly related to some important daily activities implicated with worthy operational actions and obligatory responsibilities, such as washing hands before meals and after defecation with soap, brushing teeth at least twice a day specially after breakfast and after meals, taking bath with soap regularly, keeping nails short and taking regular exercise (1).

The foundations of lifelong responsibility for the maintenance of personal hygiene are laid down in childhood, which is important for a healthy childhood, for a healthy adulthood, and for the development of positive values about health and the use of health services. Personal hygiene is one of the key foundations of infection prevention and control. Diarrheal diseases, skin diseases, worm infestations, and dental diseases are most commonly associated with poor personal hygiene. Several studies have shown that poor personal hygiene contributes to cross transmission of microorganisms, gum infections, increased rate of infectious illnesses, incidence of food outbreaks and reproductive tract infections. These have been attributed to inadequate knowledge of personal hygiene and its practices (2). Personal hygiene deficiency diseases have been found to continue to be a serious public health problem especially during the COVID-19 pandemic and often affected school students (3,4,5).

Moreover, limited studies focused on young students have been found in the literature and there was no formal study conducted concerning personal hygiene knowledge of secondary school students in Bangkok, Thailand. Therefore, this study aimed at assessing personal hygiene knowledge and practices among senior secondary school students in Bangkok, Thailand.

2. METHODS

Participants and procedure

A descriptive cross sectional study was conducted on personal hygiene knowledge and practices of senior secondary school students of Suankularb School in Bangkok, Thailand. The study was carried out in Suankularb School, a well-known and reputable public boy school in Bangkok, Thailand. The study population consisted of the secondary school students' boys only in the grade 10-12 of the school. All grade 10-12 students of Suankularb School in Bangkok were eligible and were invited to participate in the study. The invitation was sent to school social media groups. The students have access to school social media groups, so they all receive an invitation. In this invitation, information about the objectives of the study as well as the ethical guarantee of confidentiality and anonymity in the data collected as stated in the informed consent were explained. Participation was completely free and voluntary, and no personal data were collected from any participant. Of the 339 students, a total of 158 students/who participated in the study (response rate: 46%).

Instrument

The questionnaire was developed based on a literature review including (1) Infection control, chain of infection, personal hygiene WHO, Ministry of Public Health, Thailand (2) studies performed on the same topics were several common items were used to assess each of the dimensions analyzed in this study. A preliminary version of the instrument was reviewed by 3 experts in the field to validate its content. A pre-test was then performed with a small sample of high school students to test for comprehension and difficulty. All the questions remained without modifications. The psychometric characteristics of the questionnaire were tested, as described in the statistical analysis subsection.

The final version of the questionnaire contained 32 questions; 2 about demographic data (class level and study program) and 30 items divided into 3 sections

Knowledge about Personal hygiene and Infection control: this scale consisted of 15 questions related to hygiene knowledge, infection prevention, and protective equipment. The participants were asked to choose the correct answer from multiple choices of 4. One point was assigned to each correct answer, while providing an incorrect answer received zero points. The sum of all items was made hence higher scores corresponded to a higher level of knowledge.

Attitude toward personal hygiene: this scale was composed of 1 item, and response categories consisted of a five-point likert scale (from 1-strongly disagree, to 5 agree) with the highest score corresponding to more positive attitudes toward personal hygiene. Some items on the scale were inverted for the analysis. A sum of all the items was made to obtain a score. The "Attitude toward personal hygiene" factor consisted of 1 item and varied from 1 to 5 and the higher values corresponded to a more positive attitude toward personal hygiene

Personal Hygiene Practice: this scale referred to the number of preventive behaviors adopted and included 14 items; body hygiene, hand washing, protective equipment and oral hygiene. The data analysis reports 14 items. Each item was answered using a five-point scale (From 1-Never to 5-Always), with one point assigned to each behavior that was always practiced. The number of behaviors practiced was added up. A high score on this scale indicated good preventive behaviors, ranging from 14 to 70.

Statistical analysis

The analysis was performed using SPSS for windows, version 26. To analyse psychometric characteristics of the scales, an exploratory factor analysis, using principal component analysis with varimax rotation, was carried out. Reliability was analyzed through the calculation of item-total correlation coefficients and Cronbach's alpha (α) for the scales of the questionnaire. The descriptive analysis were presented in absolute (n) and relative (%) frequencies, mean (M) and standard deviations (SD). To assess the differences between the outcome variables (Knowledge, attitudes and practice) and the sociodemographic characteristics, considering the sample size, independent t-test and the ANOVA were used as appropriate. The correlations between the outcomes of the study were calculated by Pearson's correlation. Lastly, a generalized linear model was calculated to determine the predictive variables of the preventive behaviors. Exp (β) and the respective 95% confidence intervals (95% IC) were presented. Statistical significance was defined as $p < 0.05$.

Ethical Considerations

This research uses an anonymous data collection method to collect data from grade 10-12 Students of Suankularb Wittayalai School, Bangkok, Thailand, by using Google form. The invitation was sent to the school's social media groups. In these invitations, information about the study's objectives and the ethical guarantee of confidentiality and anonymity in the data collected as stated in the informed consent was explained. Participation was completely free and voluntary, and no personal data were collected from any participant.

3. RESULTS

This study comprised a total of 158 high school students. The sociodemographic characteristics of the sample are presented in Table 1. All high school students were male and most students were in grade 12 (n=88, 55.7%) and were studying Science-Mathematics program (n=67, 42.4%) and Gifted program (n=52, 32.9%).

Students revealed moderate knowledge about personal hygiene answering a mean of 10.91 (SD=2.14). There were differences in level of knowledge according to grade level and study program: grade 12 showed the highest level of knowledge, followed by grade 12 and grade 11, respectively. Gifted (M=11.17, SD=2.41) and Science-Mathematics program (M=10.76, SD=1.98) showed the highest level of knowledge. The item "What is the first thing you should do after a knife cut?" had the lowest proportion of correct responses (46.8%).

Regarding attitude toward personal hygiene, students reported favorable attitudes toward personal hygiene, these being high among grade 10 students, Science-Mathematics and English-Mathematics programs.

Concerning personal hygiene behavior, considering 14 behaviors studied, students had a moderate average score of 50.8 (SD=6.21). An analysis by grade level showed that grade 10 students (M=51.78, SD=6.07) were the most frequently engaged in personal hygiene behaviors among all grade levels while students who studied Language-Art program (M=50.69, SD=5.62) were the most frequently engaged in personal hygiene. (Table 1).

Table 1: Differences in outcomes according to the sociodemographic characteristics of participants (N = 158)

Sociodemographic characteristics	N (%)	Personal Hygiene Knowledge (Range 0-15) M (SD)	Attitude toward Personal Hygiene (Range 1-5) M (SD)	Personal Hygiene Behavior (Range 14-70) M (SD)
Grade Level				
Grade 10	45 (28.5)	11.16 (1.78)	4.76 (0.48)	51.87 (6.07)
Grade 11	25 (15.8)	10.68 (1.70)	4.44 (0.87)	49.80 (5.92)
Grade 12	88 (55.7)	10.84 (2.41)	4.61 (0.69)	49.42 (6.26)
Study Program				
Gifted Program	52 (32.9)	11.17 (2.41)	4.56 (0.89)	50.19 (7.53)
Science-Mathematics	67 (42.4)	10.76 (1.98)	4.69 (0.50)	49.87 (5.27)
English-Mathematics	23 (14.6)	10.70 (2.32)	4.65 (0.57)	50.70 (6.15)
Language- Arts	16 (10.1)	10.94 (1.65)	4.56 (0.63)	50.69 (5.62)
Total	158 (100)	10.91 (2.14)	4.63 (0.67)	50.18 (6.21)

The analysis of the correlation between the outcomes of the study - knowledge, attitude, and personal hygiene behaviors - revealed the existence between personal hygiene behaviors and personal hygiene knowledge ($r=.210^{**}$, $p<0.01$) and attitude toward personal hygiene ($r = .387^{**}$, $p < 0.01$). (Table 2).

Table 2: Pearson’s correlation coefficient between the study outcomes

Variables	Year Level	Personal Hygiene Knowledge	Attitude toward Personal Hygiene	Personal Hygiene Behavior
Year Level	1			
Personal Hygiene Knowledge	-0.057	1		
Attitude toward Personal Hygiene	-0.075	.334**	1	
Personal Hygiene Behavior	-.166*	.210**	.387**	1
**Correlation is Significant at the 0.01				
*Correlation is Significant at the 0.05				

Results from the generalized linear model indicated that the attitude toward personal hygiene had a statistically significant effect on the personal hygiene behavior adopted. Hence level of attitude toward personal hygiene predicted the adoption of personal hygiene behavior ($\text{Exp}(B) = .201$, $p < 0.05$). (Table 3).

Table 3: Generalized linear model predicting personal hygiene behaviors.

Variable	B	SE	EXP (β)	Sig	95% IC	
					Lower	Upper
Year Level	-1.198	0.487	-0.17	0.015	-2.16	-0.236
Study Program	-0.095	0.453	-0.014	0.834	-0.991	0.8
Personal hygiene knowledge	0.327	0.21	0.113	0.12	-0.087	0.742
Attitude toward hygiene behaviors	1.853	0.714	0.201	0.01	0.442	3.263

4. DISCUSSION

This study was conducted to assess personal hygiene knowledge, attitude toward personal hygiene and personal hygiene practice among high school students, boy school. The results regarding personal hygiene related knowledge revealed a moderate understanding of personal hygiene as well as its behaviors while attitude toward personal hygiene was at a good level. Grade 10 students presented the highest level of knowledge, attitude, and practices among all grade levels. This could be attributed from being young and still paying attention to what had been taught about personal hygiene in health education class and from parents. While grade 11-12 students were more independent than grade 10 students tended to neglect some personal hygiene issues in daily life. The question item “Where in the house is the breeding ground for germs?” participants answered the most correctly ($n=152$, 96.2%) and “What does not prevent the spread of the disease?” ($n=144$, 91.7%). This due to during period of the study period was the COVID-19 pandemic, information about disease spreading prevention had been promoted to the public extensively so the students had understanding in this regard. While other hygiene related questions such as the question item “What is the first thing you should do after a knife cut?” ($n=74$, 46.8%) and “Toothbrushes should be replaced every few months” ($n=101$, 63.9%) were answered the least correctly. Participants indicated having a favourable attitude toward personal hygiene this may be because students were aware of personal hygiene and understood its importance. Attitude toward personal hygiene was a predictive factor for hygiene behavior adoption. In Thailand, students were taught about personal hygiene in Health Education class as well as they learned from their parents. Moreover, most public places were provided with hygiene facilities such as sink and soap and especially during the COVID-19 pandemic that additional hygiene items such as alcohol gel, grove and mask were extensively supplied. Participants reported a moderate level of engagement in personal hygiene practice. This could be attributed to being a boy tend to less care about personal hygiene. The question item “Students wash their hands after going to the bathroom” was the most engaged ($n=108$, 68.4%), followed by “Students always brush their teeth before going to bed, even secretly coming to eat late at night” ($n=98$, 62%). While the least engaging practice was “Students take care of the cleanliness of all parts of their bodies” ($n=77$, 48.7%).

Vathanakitanond S et al. (6) conducted a study on Knowledge, attitudes, and preventive behaviors toward pathogens transmission: A study among Grade 10–12 students of Mahidol University International Demonstration School at Nakhon

Pathom, Thailand, found that students had a poor knowledge about infection prevention, a moderate level of attitude toward prevention and practice. In Thailand, most international school students were brought up in a different environment from Thai school students. Most of them were more independent and could have more rebellious behaviors toward guidelines. Temyord W. (7) studied Knowledge, awareness, and attitude regarding infection prevention and control among the undergraduate students in public universities in Bangkok, Thailand, found that university students had a moderate knowledge regarding infection prevention and control, moderate attitude and behaviors. Petpaiboon T. (8) studied Knowledge, attitude and preventive behaviors toward Coronavirus disease-19 among high school students in Bangkok, Thailand found that students had a moderate level of knowledge, attitude and preventive behaviors. This can be explained by knowledge about personal hygiene, infection control was partially in academic context, and it was not students' main focus at their ages, however personal hygiene had been taught in health education class and from their parents that participants had a moderate level of knowledge which influenced the level of personal hygiene practice. In contrast with Jitendra Kumar et al. 's (2) Studied Knowledge and Practice of Personal Hygiene among Senior Secondary School Students of Rural Areas in India found that literacy was the root cause of personal hygiene problems. While Ilesanmi Oluwafemi Temitayo (9) conducted a study about Knowledge and Practices of Personal Hygiene among Senior Secondary School Students of Ambassadors College, Ile- Ife, Nigeria found that secondary school student participants had a high level of personal hygiene knowledge and practice because they learned from school and their parents as well as for social reasons.

To improve the level of personal hygiene practice for students, personal hygiene practice should be promoted by enhancing students' knowledge and attitude through classes or activities both at schools and by their parents at their homes as students are more receptive to learning and are very likely to adopt healthy behaviors at a younger age.

Limitation

The study is based on self- reported information and thus is subject to self- report bias. To correct this, effort was made to reduce the impact of this bias by making the questionnaire a guided self- administered process. Second, the students used for this study were drawn mainly from a boy high school in Bangkok, Thailand therefore the outcome of the study cannot be generalized as they are not true representatives of all the secondary school students in Bangkok, Thailand. And third, the study was conducted during the COVID-19 pandemic therefore it was conducted via online google form which could limit for only the participants who have access to the internet.

5. CONCLUSIONS

Participants revealed moderate knowledge about personal hygiene, favourable attitude, and moderate level of personal hygiene practice. There was a statistically significant positive correlation between hygiene practice and knowledge and attitude toward personal hygiene. Attitude toward personal hygiene was a predictive factor for personal hygiene practice adoption. Hence, in order to improve personal hygiene practice among students, personal hygiene practice should be promoted by enhancing students' knowledge and attitude through classes or activities both at schools and by their parents at their homes as students are more receptive to learning and are very likely to adopt healthy behaviors at a younger age.

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