

The Effect of Hand Washing Poster and Voice Message on the Hand Washing Behaviors

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purpose

This study was done to test the effectiveness of the use of intervention strategies of handwashing poster and voice message to improve the handwashing behaviors in college students.

Methods

This study was conducted in September, 2016 at University In South Korea. 300 students who used restroom were divided into 3 groups of 100 (M:50; F:50), non-intervention Group(NIG), poster group(PG), and voice message group (VMG). The subjects were observed in different restrooms and different buildings. The research focused on whether the students washed hands using soap for at least 20 seconds(as called handwashing compliance), performed 6-step technique, and the duration of hand washing.

Results

- Hand washing behavior using soap for over 20 seconds was significantly different between gender. (M: 17.3%; F: 34.7%, $\chi^2=11.7$, $P=.001$)
- The handwashing compliance of male students was not different among three groups; NIG(10%), PG(24%), and VMG (18%)($\chi^2=3.4$, $P=.179$), but it was different in female students, respectively NIG(22%), PG(32%), and VMG(50%). ($\chi^2=8.9$, $P=.012$)
- Only 1 female student(2.4%) from VMG practiced 6-step handwashing procedure.
- 40% of male students in PG performed three steps or more, 25.6% in VMG, and 20.6% in NIG, but there was no significant difference($\chi^2=3.4$, $p=.175$). 63.4% of female students in VMG, 36.4% in PG, and 33.3% in NIG performed three or more procedures, and there was a significant difference. ($\chi^2=9.1$, $p=.011$)
- The interaction of gender and intervention strategies was significant in the time spent handwashing($F=4.8$, $p=.009$). Female students who heard a voice message washed their hands the longest(15.9 ± 10.2 seconds), and non-intervention male group washed hands the shortest(5.6 ± 6.1 seconds).

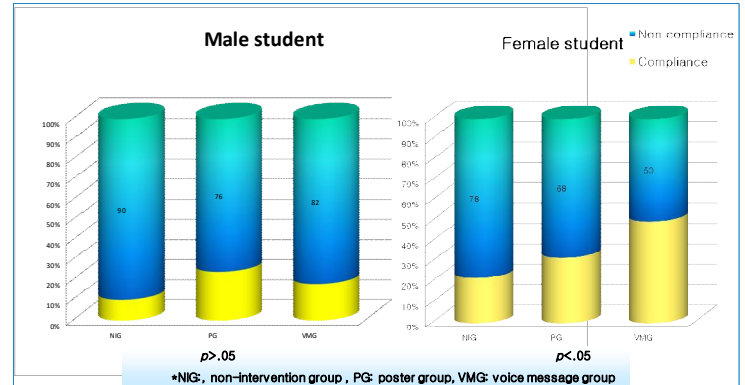


Figure 1. Hand Washing Compliance according to Intervention

Table1. Duration of Hand Washing by Gender & Intervention

variables	Duration of hand washing (seconds)			
	NIG	PG	VMG	F(p)
Gender Male	5.6±6.1	12.6±11.2	11.5±13.1	4.8 (.009)
Female	8.7±9.2	8.2±6.6	15.9±10.2	

+ Including data of the subjects washing hands for less than 20 seconds

Table 2. Number of Hand Washing Steps Performed

Hand washing step	Male n(%)			Female n(%)		
	NIG	PG	VMG	NIG	PG	VMG
1 step	11(32.4)	9(25.7)	10(23.3)	13(33.3)	13(29.5)	7(17.1)
2 steps	16(47.1)	12(34.3)	22(51.2)	13(33.3)	15(34.1)	8(19.5)
3 steps	5(14.7)	7(20.0)	7(16.3)	11(28.2)	8(18.2)	15(36.6)
4 steps	2(5.9)	5(14.3)	4(9.3)	0(0.0)	3(6.8)	6(14.6)
5 steps	0(0.0)	2(5.7)	0(0.0)	2(5.1)	5(11.4)	4(9.8)
6 steps	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	1(2.4)

+ Including subjects washing hands for less than 20 seconds

Table 3. Type of Dry after Washing Hands

Type of dry	Male n(%)			Female n(%)		
	NIG	PG	VMG	NIG	PG	VMG
No dry	19(52.8)	11(31.4)	12(26.7)	15(34.1)	10(21.7)	3(6.8)
Using paper towel	11(30.6)	13(37.1)	24(53.3)	17(38.6)	17(37.0)	23(52.3)
Using tissue	6(16.7)	11(31.4)	5(11.1)	11(25.0)	19(41.3)	18(40.9)
Using hand dryer	0(0.0)	0(0.0)	4(8.9)	1(2.3)	0(0.0)	0(0.0)

$P < .05$ $P < .05$

+ Including subjects washing hands for less than 20 seconds

Conclusions

There was a difference in the handwashing behavior according to the intervention strategy in each gender. Voice message strategy was effective for female students, while the effects of poster or voice message in male student was not significant. Therefore, it is necessary to use an effective handwashing promotion strategy for each subject rather than a uniform method.