

High School Students' Knowledge and Practice of Respiratory Hygiene/Cough Etiquette Following Education

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Abstract

The purpose of this study was to investigate knowledge and practice level of respiratory hygiene/cough etiquette following education. A total of 264 questionnaires were collected adequately and analyzed using Cochran-Mantel-Haenszel test and ANCOVA. Respiratory hygiene/cough etiquette practice level was significantly higher in the educational experience group. No significant difference of respiratory hygiene/cough etiquette knowledge was observed between the educational experience group and non-experience group. Constant education needed to be developed to encourage the practice level of respiratory hygiene/cough etiquette followed by better droplet infection control.

Keywords: *Respiratory, Hygiene, Education, Knowledge, Practice*

1. Introduction

Respiratory infection is transmitted through droplets of the infected person. Adolescents, who spend much time in school, are vulnerable to respiratory infection [1]. Respiratory hygiene/coughing etiquette is important in prevention of respiratory infection in the community [2][3]. Because the practice rate of respiratory etiquette is low in high school students, it is important to make the strategy to improve the practice rate [4][5].

The object of this study is to measure the knowledge and the practice rate of respiratory hygiene/cough etiquette. This study will contribute the development of education material.

2. Methods

2.1. Research subjects

Subjects were recruited from high school between February and June 2016. Only those to agree to participate signed the written consent form on the front page of the questionnaire and answered the questions. A total of 264 questionnaires were answered adequately and included as valid data. The sample number of the study was calculated based on the fact a total of 119 subjects were required to achieve effect size of 0.25, power of test .90 and alpha level of .05 in the t-test using G*power program [6].

2.2. Instruments

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Respiratory hygiene/cough etiquette knowledge were performed with the permission of the author as a tool of Choi [7], the answer is 1 point, wrong answers consisted of 13 questions to 0 points, 0 points do not know. The Chronbach’s alpha reliability for the study sample was 0.84.

Respiratory hygiene/cough etiquette practice was a total of four questions four-point scale based on the items listed in the CDC guidelines [8].

2.3. Data analysis

The data were analyzed by the SPSS/WIN 18.0 program. The difference in respiratory hygiene/cough etiquette knowledge and practices of the educational experience was performed ANCOVA, differences in question respiratory hygiene/cough etiquette knowledge was performed the Cochran-Mantel-Haenszel test. In addition, the differences in question respiratory hygiene/cough etiquette practice in accordance with CDC guidelines was performed ANCOVA.

3. Results

3.1. The difference of respiratory hygiene/cough etiquette knowledge and practice of the educational experience

The subject of respiratory hygiene/cough etiquette of the educational experience was 103 (39.0%) and the non-experience group was 161 (61.0%).

There was no statistically significant difference between educational experience group and non-experience group in the respiratory hygiene/cough etiquette knowledge. The mean of the respiratory hygiene/cough etiquette knowledge in the educational group was 0.79 ± 0.24 and the non-experience group was 0.78 ± 0.21 ($F=1.93, p=.148$).

There was a statistically significant difference between educational experience group and non-experience group in the respiratory hygiene/cough etiquette practice. The mean of the respiratory hygiene/cough etiquette practice in the educational group was 2.82 ± 0.47 and the non-experience group was 2.56 ± 0.52 ($F=9.50, p<.001$) [Table 1].

Table 1. The difference of respiratory hygiene/cough etiquette knowledge and practice of the educational experience (N=264)

Variables	Educational experience group (n=103) Mean±SD	Non-experience group (n=161) Mean±SD	F	p
Knowledge	0.79±0.24	0.78±0.21	1.93	.148
Practice of CDC guideline	2.82±0.47	2.56±0.52	9.50	<.001

3.2. Percentage of correct answer in respiratory hygiene/cough etiquette according to the educational experience

There was a statistically significant difference between educational experience group and non-experience group ($\chi^2=9.24, p=.002$). The correct answer rate for “It’s all right not to cover when coughing as long as you don’t cough on others” was 80.6% in educational group, 78.3% in non-experience group.

There was a statistically significant difference between educational experience group and non- experience group ($\chi^2=5.15, p =.023$). The correct answer rate for “Cover with a hand when coughing.” was 61.2% in educational group, 42.9% in non-experience group.

There was a statistically significant difference between educational experience group and non- experience group ($\chi^2=5.65, p =.018$). The correct answer rate for “After coughing, there is no need to wash hands if they are clean.” was 84.5% in educational group, 79.5% in non-experience group.

There was a statistically significant difference between educational experience group and non- experience group ($\chi^2=5.34, p =.021$). The correct answer rate for “If a large amount of sputum comes out, spit it out into a trash bin.” was 47.6% in educational group, 38.5% in non-experience group [Table 2].

Table 2. Percentage of correct answer in respiratory hygiene/cough etiquette according to the educational experience (N=264)

Question	Educational experience group (n=103) n(%)	Non-experience group (n=161) n(%)	χ^2/p
Cover only the nose when coughing	85(82.5)	138(85.7)	0.21(.648)
Cover only the mouth when coughing	80(77.7)	127(78.9)	0.93(.336)
It's all right not to cover when coughing as long as you don't cough on others	83(80.6)	126(78.3)	9.24(.002)
Cover both the nose and the mouth when coughing	91(88.4)	142(88.2)	0.60(.438)
Cover with a hand when coughing	63(61.2)	69(42.9)	5.15(.023)
Cover with a tissue or handkerchief when coughing	91(88.4)	148(91.9)	0.03(.869)
Cover with a sleeve when coughing, if a tissue or handkerchief is not available	95(92.2)	144(89.4)	1.60(.206)
Wear a mask as much as possible when coughing	87(84.5)	151(93.8)	0.51(.473)
After coughing, there is no need to wash hands if they are clean	87(84.5)	128(79.5)	5.65(.018)
After coughing, wash hands with soap in running water for 20 seconds	90(87.4)	144(89.4)	0.02(.878)

After coughing, if the hands are contaminated with saliva, apply alcohol-based handrubs thoroughly over the hands	66(64.1)	120(74.5)	0.38(.535)
If a large amount of sputum comes out, spit it out into a trash bin	49(47.6)	62(38.5)	5.34(.021)
When needing to cough out sputum, spit it out onto a tissue	87(84.5)	137(85.1)	0.06(.803)

3.3. The difference of respiratory hygiene/cough etiquette practice score for each question according to the educational experience

For the question “Cover your mouth and nose with a tissue when coughing or sneezing”, the practice score in the educational experience group (2.47 ± 0.68) was significantly higher than in the non-experience group (2.21 ± 0.79) ($F=4.86, p =.009$). For the question “If you don’t have a tissue or handkerchief, cough or sneeze into your upper sleeve”, the practice score in the educational experience group (2.82 ± 0.71) was significantly higher than in the non-experience group (2.54 ± 0.87) ($F=3.80, p =.024$).

For the question “Use in the nearest waste receptacle to dispose of the tissue after use”, the practice score in the educational experience group (3.31 ± 0.66) was significantly higher than in the non-experience group (3.15 ± 0.76) ($F=5.33, p =.005$). For the question “Perform hand hygiene after having contact with respiratory secretions and contaminated objects”, the practice score in the educational experience group (2.67 ± 0.81) was significantly higher than in the non-experience group (2.34 ± 0.80) ($F=5.77, p =.004$) [Table 3].

Table 3. The difference of respiratory hygiene/cough etiquette practice score for each question according to the educational experience (N=264)

Question	Educational experience group (n=103) Mean±SD	Non-experience group (n=161) Mean±SD	F	p
Cover your mouth and nose with a tissue when coughing or sneezing	2.47±0.68	2.21±0.79	4.86	.009
If you don’t have a tissue or handkerchief, cough or sneeze into your upper sleeve	2.82±0.71	2.54±0.87	3.80	.024
Use in the nearest waste receptacle to dispose of the tissue after use	3.31±0.66	3.15±0.76	5.33	.005
Perform hand hygiene after having contact with respiratory secretions and contaminated objects	2.67±0.81	2.34±0.80	5.77	.004

4. Conclusion

Education for the high school students should be focused on the recognition of the importance of respiratory etiquette and habituation.

References

- [1] J. S. Choi and N. Y. Yang, "Perceived knowledge, attitude, and compliance with preventive behavior on influenza a (H1N1) by university students," *Journal of Korean Academic Adult Nursing*, vol.22, no.3, pp.250-259, (2010)
- [2] Centers for Disease Control and Prevention. "CDC web site on seasonal influenza (flu)," respiratory hygiene/cough etiquette in healthcare settings, <http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.html>, (2012)
- [3] O. S. Kim, J. H. Oh, and K. M. Kim, "Knowledge and compliance with cough etiquette among nursing and allied health college students," *Korean Journal of Nosocomial Infection Control*, vol.17, no.2, pp.61-69, (2012)
- [4] J. S. Choi, J. Y. Ha, J. S. Lee, Y. T. Lee, S. U. Jeong, D. J. Shin, J. H. Han, C. Lee, and D. U. Seo, "Factors affecting MERS-related health behaviors among male high school students," *Journal of the Korean Society of School Health*, vol.28, no.3, pp.150-157, (2015)
- [5] Y. N. Kim, "Cover your mouth and nose with a handkerchief and tissue when coughing," *Yonhap News*, June 8, Sector 01, (2015)
- [6] F. Faul, E. Erdfelder, A. G. Lang, and A. Buchner, "G*Power 3: a flexible statistical power analysis power analysis program for the social, behavior, and biomedical sciences," *Behavior Research Methods*, vol.39, no.2, pp.175-191, (2007) DOI: 10.3758/BF03193146
- [7] J. S. Choi and K. M. Kim, "Predictors of respiratory hygiene/cough etiquette in a large community in Korea: A descriptive study," *American Journal of Infection Control*, Publication stage, In Press Corrected Proof published online, June 24, 2016, (2016) DOI: 10.1016/j.ajic.2016.04.226
- [8] Centers for Disease Control and Prevention, "Respiratory hygiene/cough etiquette in healthcare settings [Internet]," Atlanta: Center of Disease Control, Available from: <http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>, (2012)

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