



Original Article

Recognition and Performance on Management for Nosocomial Infections among Nursing Students

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Abstract

Purpose: This study was designed to identify recognition and the performance level for nosocomial infections amongst student nurses and to provide data for preparing on efficient policy and control program for nosocomial infections. **Method:** 191 senior nursing student participated in this research from 5 nursing college which allowed data collection, in the city of Seoul. The questionnaire was composed of 73 items(likert scale) about eight areas; aseptic technique, disinfection, precaution, hand washing, urinary tract infection, respiratory infection, catheter related infection, and self care about nosocomial infections. **Results:** The mean score of recognition and performance level for management of nosocomial infection were 4.29 and 3.41 respectively. The mean score of the recognition level was significantly lower than the performance level in the eight areas. The mean score of both recognition and performance were highest in the area of disinfection. However, the mean score of recognition was lowest in the area of aseptic technique and the mean score of performance was lowest in the area of catheter related infections. The

correlationf of recognition and performance level was statistically significant. **Conclusions:** These research findings should be useful in promoting an intensive and continuous educational program on nosocomial infection for nursing students and to establish an efficient policy for preventing nosocomial infections.

Key words : Nosocomial infection, Recognition, Performance

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(Kim, & Cho, 1997).

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(Korean Society for Nosocomial Infection Control, 1996).

1996 (KOSNIC) 15
100 3.7
30.3%, 17.2%, 1.
15.5%, 14.5%, 22.5% (Kim et al., 1997).

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(CDC)
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• 315 261 82.8%

<Table 3> Recognition and performance on aseptic technique

Items	Recognition M ± SD	Performance M ± SD	t	p- value
Keeping clean and dry for aseptic area	4.64±0.67	3.99±1.02	8.39	0.000
Do not leave before finishing the preparation of aseptic area	4.17±0.94	3.56±1.15	6.54	0.000
Open the package slowly	3.10±1.14	3.20±1.17	1.06	0.289
Change mask within 2 hours	3.26±1.06	2.51±1.29	7.39	0.000
Using fittable gloves and changing gloves for each region	4.31±0.93	3.57±1.35	7.34	0.000

2 '가 가 (3.26). 4)

4 '가 가 (4.81), '가 (4.79) ' (4.75)

가 (p<.05)<Table 3>.

2) '(4.04)가 가

'가 가 (4.82) '가 가 (4.26), '가 가 (4.29), ' (4.39), ' (4.27)

(4.45) '가 가 (3.77). 6 ' (3.32)

가 23

(p<.0001)<Table 4>.

가 (P<.05)<Table 6>.

3) 5)

'가 가 (4.28, 3.92), '(4.67)가 가 , '가 (3.82) '(3.68) 가

(3.75)가 가 3가 '(4.51)가 가

가

(P<.05)<Table 5>.

'가 가 (3.28).

<Table 4> Recognition and performance on disinfection

Items	Recognition M ± SD	Performance M ± SD	t	p- value
Verify the chemical indicator	4.70±0.66	4.45±0.91	4.05	0.000
Verify the expire date	4.77±0.54	4.43±0.91	5.22	0.000
Do not using the wet material	4.54±0.76	4.21±0.99	4.46	0.000
Washing the contaminated equipment	4.26±0.87	3.77±1.28	4.59	0.000
Isolate used equipment of patient separately	4.82±0.48	4.41±0.98	5.39	0.000
Isolate clean and dirst equipment	4.80±0.52	4.43±0.76	6.67	0.000

<Table 5> Recognition and performance on precaution

Items	Recognition M ± SD	Performance M ± SD	t	p- value
Universal precaution	3.82±1.08	3.81±1.07	0.97	0.366
Airborne precaution	3.92±0.97	3.75±0.98	2.62	0.010
Droplet precaution	4.08±0.91	3.76±0.97	3.61	0.000
Contact precaution	4.28±0.78	3.92±1.00	4.63	0.000

<Table 6> Recognition and performance on handwashing

Items	Recognition M ± SD	Performance M ± SD	t	p- value
Before aseptic procedure	4.79±0.53	4.39±1.02	5.18	0.000
After aseptic procedure	4.66±0.64	4.27±1.02	4.81	0.000
Before and after gloving	4.59±0.74	4.25±1.06	3.90	0.000
Wear gloves while caring the infected patient	4.75±0.52	4.38±0.99	4.99	0.000
Before contacting secretion of infected patient	4.54±0.76	4.29±1.18	2.80	0.006
After contacting of infected patient	4.81±0.47	4.47±1.01	4.36	0.000
Before contacting immunocompromised patient	4.75±0.51	4.22±1.10	6.19	0.000
Before blood sampling	4.34±0.90	3.59±1.30	5.67	0.000
After blood sampling	4.28±0.94	3.65±1.44	4.68	0.000
Before injection	4.07±1.02	3.38±1.31	7.42	0.000
Before medication	4.12±0.99	3.45±1.26	6.60	0.000
Before IV catheterization	4.34±0.87	3.48±1.35	7.86	0.000
After IV catheterization	4.27±0.89	3.38±1.35	7.90	0.000
Before contact wound	4.56±0.74	3.80±1.28	7.75	0.000
After contact wound	4.58±0.67	4.09±1.13	5.60	0.000
Before suction	4.37±0.87	3.64±1.39	6.77	0.000
After suction	4.42±0.87	3.99±1.16	4.93	0.000
Before handling ventilator circuit	4.04±0.96	3.32±1.23	7.37	0.000
After handling ventilator circuit	4.13±0.91	3.39±1.30	6.90	0.000
Before urinary catheterization	4.68±0.70	3.92±1.29	7.61	0.000
After urinary catheterization	4.66±0.66	4.14±1.11	6.53	0.000
Inserting of indwelling catheter	4.56±0.72	3.96±1.19	6.67	0.000
With soap for 10~15 seconds	4.51±0.72	4.07±1.10	5.29	0.000

<Table 7> Recognition and performance on urinary tract infection

Items	Recognition M ± SD	Performance M ± SD	t	p- value
Regularly empty urine-bag	4.44±0.73	3.96±1.12	5.18	0.000
Maintain closed sterile drainage	4.45±0.74	4.30±0.88	1.83	0.069
Maintain unobstructed urine flow	4.47±0.76	4.26±1.01	2.22	0.027
Change of catheter when abnormal urine patency	4.05±0.90	3.72±1.66	2.47	0.015
Locate urine bag below the bladder	4.67±0.67	4.51±0.97	2.03	0.044
Use collecting container for emptying urine-bag individually	4.09±1.00	3.66±1.35	4.02	0.000
Cleansing with a disinfectant around distal end of the urine-bag after emptying urine-bag	3.96±1.08	3.28±1.41	5.36	0.000
Use smallest suitable bore catheter	3.68±1.16	3.39±1.14	3.01	0.003
Use aseptic technique when collecting specimen	4.31±0.92	3.93±1.24	4.25	0.000

가 (P<.05)<Table 7>. 가 가 (4.52) , 가 (2.15) . 가 가 (4.59, 4.34) 가 가 (4.29) 가 가 (2.72) (4.07, 3.61). 가 (P<.05)<Table 8>. <Table 9>.

<Table 8> Recognition and performance on respiratory infection

Items	Recognition M ± SD	Performance M ± SD	t	p- value
Sterilize all equipments and devices	4.51±0.70	3.97±1.19	5.35	0.000
Use sterilized ambu-bag for each patient	4.27±0.89	3.79±1.42	4.47	0.000
Use sterilized suction catheter	4.49±0.81	4.11±1.09	4.41	0.000
Use gauze and bottle for each patient	4.59±0.65	4.34±0.96	3.46	0.000
Not suction routinely	4.32±0.84	4.18±1.00	1.85	0.001
Use sterile saline for every suction	4.15±0.99	3.64±1.31	5.00	0.065
Wear gloves for suction	4.27±0.98	3.79±1.31	4.87	0.000
Fill sterilized water for humidifier	4.12±0.91	3.66±1.45	4.37	0.000
Fill sterilized water for bubbling humidifiers before using	4.37±0.87	3.61±1.15	6.78	0.000
Change ventilator circuit every 48 hours	4.07±0.89	3.61±1.32	4.12	0.000
Prevent to draining backward to the patient	4.57±0.71	4.22±1.15	3.64	0.000

<Table 9> Recognition and performance on venous catheter related infection

Items	Recognition M ± SD	Performance M ± SD	t	p- value
Changing peripheral venous catheter every 72 96 hours	4.36±0.83	4.11±0.91	2.37	0.019
Changing IV tube every 24 72 hours	4.32±0.80	4.11±0.97	2.12	0.035
Replace used tube to transfusion blood for each bag	4.52±0.71	4.17±1.19	2.58	0.011
Changing IV tubing for central venous catheter every day	4.20±0.95	4.06±1.20	1.30	0.194
Wear gloves while IV catheterization	4.39±0.87	3.57±1.36	5.96	0.000
Record insertion date	4.46±0.75	4.29±1.03	2.16	0.033
Pass sterilized saline when abnormal catheter patency	2.15±1.11	2.72±1.56	-4.67	0.000
Cleans the diaphragm of fluid bottle with disinfectant	4.09±0.91	3.90±1.17	2.15	0.033
Check the leakage and foreign body in fluid	4.34±0.82	3.92±1.19	5.09	0.000
Infusion mixed fluid within 24hours	2.66±1.35	3.32±1.48	-4.80	0.000

8)

가 가
(r=.307, p=.00).

가 가 (4.48, 4.28), 가
(4.22, 3.89)가 가

가 30 40%
가 가
(P<.05)<Table 10>.

가

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<Table 10> Recognition and performance of infection control for self care

Items	Recognition M ± SD	Performance M ± SD	t	p- value
Check-up on health Routinely	4.29±0.87	4.08±0.96	2.46	0.015
Vaccination for infection prevention	4.45±0.76	4.11±0.92	3.45	0.001
Visit nosocomial infection management team for health care worker if problem occurred	4.22±0.95	3.89±1.24	2.70	0.008
Policy for needle stick injury	4.44±0.82	4.23±1.10	1.85	0.067
Dispose the used needle in puncture resistant container	4.48±0.94	4.28±1.22	2.16	0.032

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39 44.1% 가 (Yoo, Ha, & Pai, 2001).
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2003 6

References

- (Beekmann et al., 1994),
(Gershon et al., 1995).
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Beekmann, S. E., Vlahov, D., Koziol, D. E., Mcshalley, E .D., Schimitt J. M., & Henderson D. K. (1994). Temporal association between implementation of universal precautions and sustained, progressive decrease in percutaneous exposures to blood. *Clin Infect Dis*, 18(4), 562-569.
Bennett, J. V., & Brachman, P. S. (1992). *Hospital Infection*. Little, Brown and Com Boston/Tronto/London.
Cho, H. S. (2000). *A study on the level of recognition and performance of the clinical nurses about the prevention of nosocomial infection*. Unpublished master's thesis, Soonchunhyang University, Chunan.
Choi, M. A. (2002). *A study on the level of recognition and performance of the clinical nurses about the management of nosocomial infection*. Unpublished master's thesis, Chung-Ang University, Seoul.
Choi, S. J. (1998). *A Study on the awareness of importance and practice on the nosocomial infection control*. Unpublished master thesis, Korea University, Seoul.
Choi, S. J., Cheong, H. J., Woo, H. J., Kim, W. J., Park, S. C., & Park, C. H. (1998). A prospective study on the incidence of intravenous catheter-related complication. *Korean J Nosocomial Infection Control*, 3(2), 101-112.
Eickhoff, T. C. (1981). The future of hospital infection control in the 1980s. *Am J Med*, 70, 980-981.
Gershon, R. R., Vlahov, D., Felknor, S. A., Vesley, D., Johnson, P. C., Delclos, G. L., & Murphy, L. R. (1995). Compliance with universal precautions among health care

- workers at three regional hospitals. *Am J Infect Control*, 23(4), 225-236.
- Kim, H. J. (2000). *Evaluation on recognition & performance levels for the prevention of nosocomial infection among nurses*. Unpublished master's thesis, Soonchunhyang University, Chunan.
- Kim, J. M., Park, E. S., Jung, J. S., Kim, K. M., Kim, J. M., Ho, H. S., Yoon, S. W., Bea, J. H., Lee, S. I., Lee, M. S., Song, J. H., Kang, M. W., Choe, K. W., & Park, S. C. (1997). 1996 national nosocomial infection surveillance in Korea. *Korean J Nosocomial Infection Control*, 2(1), 157-176.
- Kim, N. C., & Choi, K. O. (1999). A comparative study on the nurse and nurses aids' perception and performance level for nosocomial infection control. *J Korean Acad Adult Nurs*, 11(4), 684-691.
- Kim, S. O., & Cho, S. H. (1997). A study on clinical nurses level of perception of importance, performance and satisfaction in the control of nosocomial infection. *J Korean Acad Nurs*, 27(4), 765-776.
- Kim, Y. H. (2002). *Nursing students' performance and confidence in basic nursing skills after the completion of clinical practice :focused on basic nursing skills of low performance*. Unpublished master's thesis, Keimyung University, Taegu.
- Kim, Y. S., Chun, C. Y., Kim, C. J., & Park, J. W. (1990). A study on the awareness level and the performance level of the guidelines for the prevention of nosocomial infection. *Infection*, 22(3), 131-146.
- Korea Institute for Health and Social Affairs. (1996). *Goal and strategy of health promotion*. Korea Institute for Health and Social Affairs.
- Korean Society for Nosocomial Infection Control. (1996). *Nosocomial infection control guidelines*. Seoul: Euisul.
- McCann, T. V., & Sharkey, R. J. (1998). Educational intervention with international nurses and changes in knowledge, attitudes and willingness to provide care to patients with HIV/AIDS. *J Adv Nurs*, 27, 267-273.
- Oh, H. S., Choi, Y. K., Lee, B. N., Shim, M. Y., Choi, H. S., Kim, E. C., & Choe, K. W. (2000). A prospective study of the incidence of ventilator-associated pneumonia in patients with circuit changes every 3 days versus weekly changes. *Korean J Nosocomial Infection Control*, 5(1), 2-21.
- Sine, S. H. (2002). *A study on the level of recognition and performance of the clinical nurses about the management of nosocomial infection*. Unpublished master thesis, Daejun University, Daejun.
- Song, J. H., Kim, S. M., Kim, K. M., Choi, S. J., Oh, H. S., Park, E. S., Jeong, J. S., Choi, J. H., Shin, W. S., Cheong, H. J., Kim, W. J., Ha, M. N., Pai, H. J., Yoo, S. M., Yoon, S. W., Kim, O. S., Oh, M. D., Lee, S. I., Kim, J. M., Kang, M. W., Park, S. C., Pai, C. H., & Choe, K. W. (1999). Prospective estimation of extra health care costs and hospitalization due to nosocomial infections in Korean hospitals. *Korean J Nosocomial Infection Control*, 4(2), 157-165.
- Song, M. S. (2001). *A study on awareness and practice of the nurses on the nosocomial infection*. Unpublished master's thesis, Dankook University, Chunan.
- Yoo, S. M., Ha, M. A., & Pai, H. J. (2001). Effectiveness of surveillance of central catheter related bloodstream infection in an ICU in Korea. *Infect Control Hospital Epidemiology*, 22, 433-436.
- Winzel, P. R. (1993). *Prevention and control of nosocomial infection* (2nd ed). Baltimore: William & Wilkins, 580-599.