

Factors influencing peripheral intravenous catheter practice of nurses in small & medium sized hospitals

J.H. KIM¹, I. HWANG² and E.M. KIM²

1 Department of Nursing Science, Shinsung University, Chungnam, Republic of Korea,

2 Department of Nursing Science, Sun Moon University, Chungnam, Republic of Korea

P100

INTRODUCTION

The peripheral intravenous catheter (PIVC) is the most-used invasive medical device in hospitals, and the importance of its effects on patient safety is increasing [1]. PIVC insertion is a task commonly performed by nurses that consumes a significant amount of nursing time [2]. Identifying how nurses perform PIVC practices forms the basis for ensuring patient safety by helping to improve the invasive procedures. However, there has been little research into how nurses perform PIVC nursing practices in hospitals, especially in small and medium-sized ones.

AIM

The purposes of this study were as follows

- to identify the knowledge of PIVC nursing, PIVC nursing practices level, patient safety-culture perception and nursing working environment among nurses in small and medium-sized hospitals
- to identify differences in PIVC practices according to the general characteristics of the participants
- to identify factors that affect the PIVC nursing practices.

RESULTS

- The mean total score of practical knowledge of PIVC nursing was 28.77, and the mean score of PIVC nursing practices was 4.46.
- The characteristic that significantly affected the level of PIVC nursing practices was the length of clinical experience ($F=2.72$, $p=.032$), with this being better for 11–15 years of experience than for <1 year of experience.
- Length of clinical experience, practical knowledge of PIVC nursing and patient safety-culture perception were significant factors affecting the PIVC practices, with these variables explaining 26.2% of the variance therein (Table 1).

Table 1 Factors influencing the PIVC nursing practices (n=149)

Variables	Model 1					Model 2				
	B	SE	β	t	p	B	SE	β	t	p
Constant	4.39	.07		60.31	<.001	1.41	.46		3.06	.003
Clinical experience (reference <1 year)										
1–5 years	.04	.09	.06	.47	.639	.00	.08	.00	.01	.995
6–10 years	.01	.10	.01	.08	.937	.03	.09	.03	.34	.736
11–15 years	.29	.10	.29	2.76	.007	.15	.10	.15	1.57	.119
>15 years	.10	.10	.11	1.00	.322	.04	.09	.04	.40	.687
Practical knowledge of PIVC nursing						2.57	.48	.40	5.30	<.001
Patient safety-culture perception						.19	.05	.28	3.87	<.001
Adjusted R ²	.044					.262				
R ²	.070					.292				
R ² variation	-					.221				
F(p)	2.72 (.032)					9.74 (<.001)				
F variation (p)	-					22.19 (<.001)				

Durbin-Watson statistic=1.776, tolerance=.419–.940, VIF=1.063–2.389

METHOD

- This study had a descriptive research design to identify the factors affecting PIVC nursing practices in small and medium-sized hospitals.
- Questionnaires returned by 149 nurses collected data on general characteristics, practical knowledge of PIVC nursing, nursing working environment, patient safety-culture perception, and PIVC nursing practices.
- Ethical approval for this study was obtained from the institutional review board of SM University.
- The questionnaire data were analysed using descriptive statistics, the independent *t*-test, one-way ANOVA, Scheffé’s test, Pearson correlation, and hierarchical regression analysis.

CONCLUSIONS

It was found that PIVC practice knowledge and patient safety-culture perception were significant factors affecting the PIVC nursing practices of nurses in small and medium-sized hospitals. To improve the PIVC nursing practices, it is necessary to provide education and training based on the latest scientific evidence to acquire knowledge and skills, and to establish and support an institutional safety culture.

REFERENCES

- Nickel B. Peripheral Intravenous Access: Applying Infusion Therapy Standards of Practice to Improve Patient Safety. *Critical Care Nure*. 2019;30(1):61-71. <https://doi.org/10.4037/ccn2019790>.
- Kim JI, Lee JH, Chang OJ. Perceived Importance and Performance of Intravenous Fluid Therapy by Nurses in Small-Medium General Hospitals. *Journal of Korean Acad Fundam Nurs*. 2013 Nov;20(4):372-80. <http://doi.org/10.7739/jkafn.2013.20.4.372>

ACKNOWLEDGEMENT

This research was supported by a grant from the National Research Foundation of Korea (NRF-2022R1A2C1009890)

CONTACT INFORMATION

E.M.KIM: kem7355@hanmail.net