

Knowledge and Attitude towards Needle-stick and Sharp Injuries among Nurses

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INTRODUCTION

Needle-stick injuries (NSIs) risk transmission of blood-borne infections to healthcare workers¹. Besides infections, the long-term outcome of health care workers who sustained needle stick injury include substantial psychiatric morbidity such as depression and adjustment disorder (AD)².

Our study aimed to validate a self-administered questionnaire (CRC-NSI) assessing knowledge and attitude of nurses when dealing with NSI, identify potential predictors of NSI, and determine association between years of working experience and NSI cases among nurses.

METHODS

This is a cross-sectional study involving the development and validation of a self-administered questionnaire (CRC-NSI) to measure knowledge and attitude among nurses in handling NSI cases in Hospital Tuanku Fauziah (HTF), Perlis.

Development of the questionnaire was guided by previous published articles on NSI incidences among healthcare workers. Questionnaires were designed with face and construct validity in mind and evaluate the key themes of study interest at the same time. The questionnaire was distributed from 6 September 2018 till 1 November 2019 among staff nurses in HTF. Convenient sampling was used.

Inclusion Criteria

Registered nurses who had at least 1 year of clinical experience in the ward, with/without NSI experience.

Exclusion Criteria

Nursing staff who were in general administrative positions or dealing with public health issues, as well as those who were on leave (maternity, annual, sick or study leave) during the study period.

RESULTS

There was a total of 162 study respondents. Majority were female (n=143, 88.3%), Malay descent (n=158, 97.5%), of grade U29 (n=122, 75.3%), and with Diploma as the highest education level (n=137, 84.6%).

The mean age of the study respondents was 32.3 ± 5.82 years old with the majority having working experience of more than 6 years (n=90, 55.6%). A vast majority of them were from medical-based wards (n=112, 69.1%) with the mean of 30.1 ± 5.75 number of beds. Majority (n=152, 93.8%) had received Hepatitis B immunization prior to working and most of them have never experienced needle-stick injury (n=148, 91.4%).

Among those with prior NSI history (n=11), majority were from medical-based ward (n=7, 63.6%) and most were grade U32 (n=6, 54.5%). Additionally, 4 (9.1%) did not report the incident to the ward manager due to self-perceived low risk of blood-borne infections.

The questionnaire attained good reliability score (Table 1). The median knowledge score among all study respondents was 8.0 (IQR=1.00).

Table 1: Reliability scoring of CRC-NSI questionnaire.

| Section | Cronbach's alpha |
|---------------------------------|------------------|
| Knowledge section (8 questions) | 0.35 |
| Attitude section (12 questions) | 0.63 |

The total number of beds in the ward and working experience did not significantly predict the occurrence of NSIs (Table 2).

Table 2: Simple logistic regression for factors predicting NSIs occurrence.

| Variable(s) | Odd ratio (95% CI) | p-value |
|-------------------------------|--------------------|---------|
| Age | 1.14 (0.94, 1.37) | 0.178 |
| Working experience | | 0.444 |
| 1-3 years | 5.5 (0.43, 69.16) | |
| >3 years | 5.0 (0.53, 46.64) | |
| Total no. of beds in the ward | 1.03 (0.88, 1.21) | 0.681 |
| Position | | 0.438 |
| U29 | 1.80 (0.05, 68.63) | |
| U32 | 6.1 (0.22, 169.80) | |
| Knowledge score | 0.40 (0.04, 3.95) | 0.762 |

There was also no association between NSI incidence and self-perceived heavy nursing workload (p=0.718) and years of nursing experience (p=0.469).

DISCUSSION AND CONCLUSION

1. Our study showed that the incidence of needle stick injury majority experienced by senior staff that had been working for more than 6 years.
2. Apart from 11 patient that had been injured, 4 of them are not reported the incidence to their ward manager, this is clearly show the awareness of reporting the sharp injuries are still low.
3. In view of the low Cronbach's alpha obtained for the knowledge section, revision of the questionnaire is warranted for a better reliability assessing the knowledge of NSIs among nurses.
4. Our study highlights the poor attitude with regards to NSI reporting despite years of working experience. Therefore, it is important to instill vigilance and awareness to maintain good clinical practice among nurses.
5. Regular education program and awareness campaign regarding the importance of proper reporting of NSI cases are warranted to aware the nurses about their responsibility to report the event of sharp injury.
6. All patients must be regarded as risk of blood – borne infection transmission despite not being diagnosed.

REFERENCES

1. Smith, D. R., Mihashi, M., Adachi, Y., Nakashima, Y., & Ishitake, T. (2006). Epidemiology of needlestick and sharps injuries among nurses in a Japanese teaching hospital. *Journal of hospital infection*, 64(1), 44-49.
2. Kubitschke, A., Bader, C., Tillmann, H. L., Manns, M. P., Kuhn, S., & Wedemeyer, H. (2007). Injuries from needles contaminated with hepatitis C virus: how high is the risk of seroconversion for medical personnel really?. *Der Internist*, 48(10), 1165-1172.