NEEDLE-STICK INJURIES AND OVERWORKING SIGNIFICANT OCCUPATIONAL HEALTH RISK

Introduction

Nurses encounter a variety of occupational risks during their career. Needle-stick injuries (NSI's) are a significant health hazard to nurses, due to the risk of contracting blood-borne pathogens. Such hazards can cause serious health and psychological impacts (Prüss-Üstün, Rapiti and Hutin, 2003). The literature review I undertook was to unearth the cause of NSI's and prevent harm to nurses.

"When nurses are overworked in an acute hospital is there an increase in needlestick injuries?"

The World Health Organization (2003) reported that approximately **3 million** healthcare workers are affected by NSI's annually (Prüss-Üstün, Rapiti and Hutin, 2003). It was found in Waikato, New Zealand, that **7.6% of nurses** had sustained one or more NSIs in the past year (Fullerton and Gibbons, 2011). Nurses are known to work hard within their profession. Could long hours, shift work and heavy workloads have contributed to this high incidence?

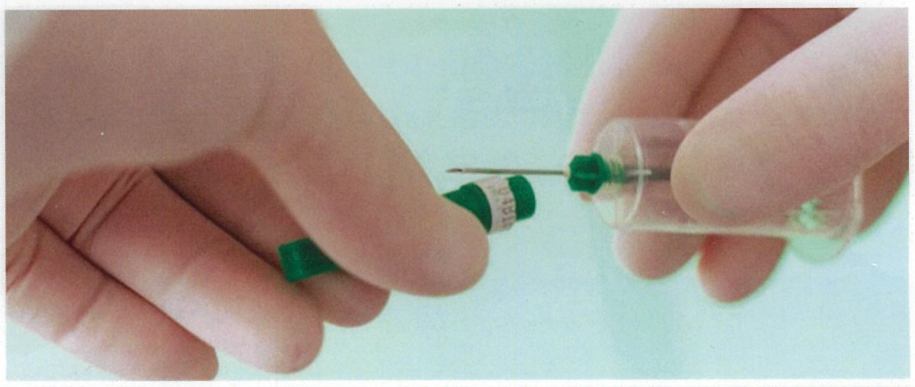
How does overworking increase NSI's?

Overworking is defined as a job's demands exceeding an individual's ability to cope and is a key-contributing factor to stress and fatigue within the nursing population (Kirch, 2008).

As a result cognitive effects can be triggered such as increased inattention and slower reaction times among nurses, which is dangerous for them and their patients (Gholami, Borji, Lotfabadi, Asghari, 2013).

A recent study reported that **stress and tiredness** were the most common contributors to NSI's. Furthermore 40.7% of respondents stating that 'working under immense time pressure' was the cause of obtaining their NSI (Wicker, Stirn, Rabenau, Gierke, Wutzler and Stephan, 2014).

Concurrently Ilhan et al. (2006) recommends nurses work no more then **8 hours a day**, as they found that nurses had a **13%** higher NSI incidence when working over 8 hours.



Implications to practice

One brief needle handling error can put a nurse at risk, which can lead to extreme implications on a nurse's life. More than **25 blood-borne viruses** have been recorded following NSIs, including HIV and Hepatitis B (Prüss-Üstün, Rapiti, and Hutin, 2003). Hence the **psychological impacts** to a nurse's health are immense, anxiety commonly increases along with the development of phobias and elevated stress (Wicker et al., 2014).

Recommendations

1. Firstly an improvement in the **culture of safety** needs to be implemented in all healthcare facilities to influence the attitudes and behaviours of nurses. This will ensure that nurses will take the steps necessary to protect themselves.
2. **Reducing** the amount of **overworking** within the nursing population should be prioritized. This can be achieved through following the suggestions of NZNO.
3. Incorporate **education** on the importance of recognizing and responding appropriately to **stress and fatigue**, produced by overworking or other means within needlestick prevention education sessions.

Conclusion

NSI's and the harm they produce are preventable. Psychological factors that increase NSI's need to be mitigated and managed keep nurses safe.

Grace Emeny

References:

Fullerton, M., & Gibbons, V. (2011). Needlestick injuries in a healthcare setting in New Zealand. New Zealand Medical Journal, 124(1335), 33-39.

Gholami, A., Borji, A., Lotfabadi, P., & Asghari, A. (2013). Risk factors of needlestick and sharps injuries among healthcare workers. International Journal of Hospital Research, 2(1), 31-38

Ilhan, M. N., Durukan, E., Aras, E., Türkçüoğlu, Styles., & Aygün, R. (2006). Long working hours increase the risk of sharp and needlestick injury in nurses: The need for new policy implication. Journal of Advanced Nursing, 56(5), 563-568.

Kirch, W. (2008). Encyclopaedia of public health (Vol. 1). New York: Springer.

Prüss-Üstün, A., Rapiti, E., & Hutin, Y. (2003). Estimation of the global burden of disease attributable to contaminated sharps injuries among health-care workers. Geneva: World Health Organization

Sharps injuries [Photograph]. (2014). Retrieved May 10, 2016, from www.healthcare-onnews.com

Wicker, S., Stirn, A. V., Rabenau, H. F., Gierke, L. V., Wutzler, S., & Stephan, C. (2014). Needlestick injuries: Causes, preventability and psychological impact. Infection, 42, 549-552.

Rationale/Summary

Topic: "When nurses are overworked in an acute hospital is there an increase in needlestick injuries?"

I chose to transfer my knowledge of needlestick injuries (NSI's) through the means of a poster presentation, as it provides the chance to share my work in a concise, visually orientated manner that is accessible and interactive (Perrin, 2012). This form of presentation appealed to me as it acts as a combination of visual written research and an informal oral presentation, which can effectively convey knowledge to a variety of interested spectators (Ilic & Rowe, 2013). This format, due to its interactive nature, also allows for critical discussions on my research topic that can potentially enhance my knowledge and others. The audience may have ideas on how to apply my work further or raise new questions not yet considered, creating the opportunity to question and critique my research (Miller, 2007). Through this interaction I will be able to enhance and broaden my understanding on needlestick injuries and convey my knowledge to a large quantity and variety of people.

The clear take-home message I hope to portray through my presentation is the importance of reducing overworking within the nursing profession, to improve the health of nurses. After reviewing the evidence-based literature it prominently shows that overworking can increase stress and fatigue, which puts nurses at a high risk of a NSI's, resulting in severe physical and psychological complications (Ilhan, Drurukan, Aras, Türkçüoğlu and Aygün, 2006). Due to these serious health risks, prevention methods focusing on needle usage education and safety devices are in place but there is no emphasis on the psychological factors that increase the occurrence of NSI's. This is where change needs to occur.

References

Ilhan, M. N., Durukan, E., Aras, E., Türkçüoğlu, S., & Aygün, R. (2006). Long working hours increase the risk of sharp and needlestick injury in nurses: The need for new policy implication. Journal of Advanced Nursing, 56(5), 563-568.

Ilic, D., & Rowe, N. (2013). What is the evidence that poster presentations are effective in promoting knowledge transfer? A state of the art review. *Health Information & Libraries Journal*, 30(1), 4-12. doi:10.1111/hir.12015

Miller, J. E. (2007). Preparing and presenting effective research posters. *Health Services Research, 42*(1p1), 311-328. doi:10.1111/j.1475-6773.2006.00588.x

Perrin, R. (2012). Pocket guide to APA style. *Poster presentations*. (4th ed.). Boston: Wadsworth.

PECOT Model

PECOT category	Information relation to question	Explanation
Population	Nurses working in acute hospital settings.	Nurses are prone to needlestick injuries due to being directly involved in patient care. Nurses working within an acute hospital have the highest incidence of needle use.
Exposure	Nurses who are overworking in an acute hospital setting acquiring a needlestick injury.	We will look for articles that have studied the occurrence of needlestick injuries and the circumstances under which they occur. We will also find articles that explore the affect that overworking has in the nursing population. To study the effect of overworking on nurses in acute hospitals and whether it impacts on the incidence of NSIs.
Comparison/ Control	Nurses who are not overworked in an acute hospital acquiring a needlestick injury.	We are interested in finding out if nurses still acquire needlestick injuries when they are not overworking. If so what are the various factors responsible for needle stick injuries and the circumstances under which they occur?
Outcome	To find out if the amount of needlestick injuries increases when nurses are overworked in an acute hospital or if alternative circumstances are more likely to produce NSI.	We want to know if a nurse who is overworking receives more needlestick injuries then a nurse who is not overworking. This knowledge is valuable as then we can accurately put prevention strategies in place, with focus on New Zealand nurses.
Time	N/A	N/A

This PECOT model assisted the development of my research question to "When nurses are overworked in an acute hospital is there an increase in needlestick injuries?" Through reviewing the relevant evidence-based literature I have produced the following poster displaying the relationship between NSIs and nurses who overwork in acute hospitals. This gave me the base to unearth the following recommendations or prevention strategies that will benefit my future colleagues and myself in our nursing career.