



Mini Review

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# Needle Stick Injuries Among Student Nurses: A Neglected Occupational Hazard with Significant Repercussions in Health Care Settings

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## Introduction

Needle Stick Injuries (NSI) present one of the most common and important occupational health problems in health care. These injuries are a serious threat to the health of health care workers, nurses, and student nurses as they expose them to infectious diseases [1]. NSI is a nonintentional penetration of the skin by a needle [2]. Nurses have been found when compared to other health care workers to be preponderantly affected by NSI due to the nature of their work [2]. Student nurses are at elevated risk of NSI during their practice in the clinical setting [3] with reported prevalence rates ranging from 8.7% to 91.85% [3-8] and pooled prevalence rates ranging between 27% and 40.5% [1,9,10]. Consequently, they are at high risk of various bloodborne infections such as Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) and Human Immunodeficiency Virus (HIV) [3]. Clinical practice is the only way that student nurses gain experience and therefore face various occupational hazards during this time [9]. Students learn various nursing skills, including injection techniques, taking blood samples and monitoring blood sugar levels with glucometers [1]. Activities such as drug administration, drug preparation, recapping, carrying syringes without proper receptacles, improper needle disposal, opening needle cap, sudden movement during patient injection, blood sampling and suturing place them at increased risk of NSI [1,2]. Student nurses can suffer from mental distress, anxiety, depression, and post-traumatic stress disorder due to NSI [1].

While extensive research has been conducted on NSI among health care workers, there is paucity of studies that investigated NSI

among student nurses. Student nurses are, however, more vulnerable to NSI than nurses due to limited experience and proficiency in nursing care skills [11,12]. Limited literature on NSI among student nurses suggests that these injuries are associated with several factors such as recapping needle [2,13], opening needle cap, opening ampoules, injection [3,7,14], intravenous cannulation, blood sampling, medication and disposing needle cap [3], and unexpected patients' movement [2,12].

Despite student nurses' knowledge that NSI can lead to increased risk of over twenty types of infection transmissions among health care workers and aware that these injuries must be reported immediately they occur [15], the prevalence of nonreporting of these injuries is high among student nurses, ranging between 43% and 96.2% [1]. Being worried and afraid and not knowing incident reporting procedures [7,13], not being worried because the item was unused and incident minor and feeling embarrassed [7] have been advanced as reasons for not reporting NSI in clinical settings. Student nurses have also reported that they did not take any measures after needle pricking [2,12] or ignored the injury [5]. It is evident that nonreporting of NSI is a serious area of concern and therefore needs to be addressed to safeguard the health and safety of student nurses and consequently of health care workers in clinical settings.

Studies exploring student nurses' knowledge on NSI have found moderate knowledge of NSI prevention among this group [2]. Adherence to standard precautions has been significantly associated

with level of knowledge. Thus, the lower the level of knowledge the poorer adherence to NSI prevention and the greater the NSI incidence [2]. Nurses have been found to be at risk of NSI hence occupational health and safety training of student nurses especially on workplace hazards that they are exposed to, their effects and measures in place for prevention and control should form part of nursing curriculum.

Future research should be conducted in developing countries to investigate the prevalence and risk factors in their context as there is a dearth of such studies in low- and middle-income countries. Furthermore, on account of high prevalence rates of nonreporting of NSI and potential infections, it is important that future qualitative research are conducted to explore reasons for nonreporting. The mental impacts of NSI on student nurses should also be investigated to protect them as students and later as health care workers as these can lead to work absence and lost workdays. These will help understand NSI problems and tailor-made prevention strategies put in place to alleviate the burden of NSI among this important group.

### Acknowledgement

None.

### Conflict of Interest

None.

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