
Needle Prick Injuries as a risk factor for hospital-acquired infection among nurses in a Gauteng hospital

Geoffrey Setswe DrPH & Lindiwe Zungu PhD

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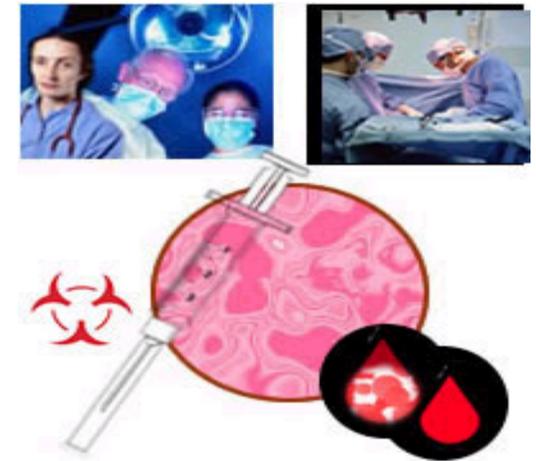
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In this presentation

- Introduction and research on NPI among HCWs
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Introduction

- Health care workers and students involved in treating patients are at risk of acquiring blood borne infections from the workplace
- Needle prick injuries (NPI) are the commonest route by which infections are transmitted to healthcare providers.
- Nursing students in training are no exception as they get exposed to accidental needle pricks and contamination during their hospital activities.



Research on NPI among HCWs

- Needle prick injuries (NPI) are the commonest route upon which blood borne viruses and/or infections such as HIV, hepatitis B and C are transmitted from patients to healthcare workers (HCWs).
 - The risk of contracting acute hepatitis C infection due to a NPI is estimated at 1% to less than 5%.
 - The risk of contracting hepatitis B infection due to a needle prick injury is 100 times higher than that of contracting HIV.
 - The prevalence of occupational HIV is 0.3% after parenteral exposure, as opposed to 0.09% after mucosal exposure
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Objectives

The objectives of this study were to:

- Assess student nurses' **knowledge of NPI policies and procedures**;
- Identify and describe factors and **risky procedures** that contribute to the occurrence of NPI among nursing students;
- Describe the **prevalence of needle prick injuries** among nursing students.



Methods

- A **cross-sectional quantitative survey** was conducted among 121 nursing students registered for 2nd to 4th year at the university in 2007;
- Questionnaires were hand delivered to a **convenient sample of nursing students** attending mandatory nursing classes
- Those who accepted signed a **consent form**;
- Data were collected on **knowledge of NPI guidelines**, policies and protocols, **factors contributing to NPI** and **prevalence of NPI** among nursing students



Results

- A **response rate** of 96 (79%) was achieved.
 - 25 (21%) were **absent or sick** and did not attend class on the day of the survey
 - Average **age** was 23 years [CI 18-35 years];
 - **Gender distribution**: 80.2% were females and 19.8% were males.
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Knowledge of NPI policies & protocols

- 61.5% of respondents rated the **lack of knowledge** about NPI (policies and protocols) at institutions for clinical training as an extremely high risk
- 43.8% said they lacked **accompaniment and in-service training** on NPI

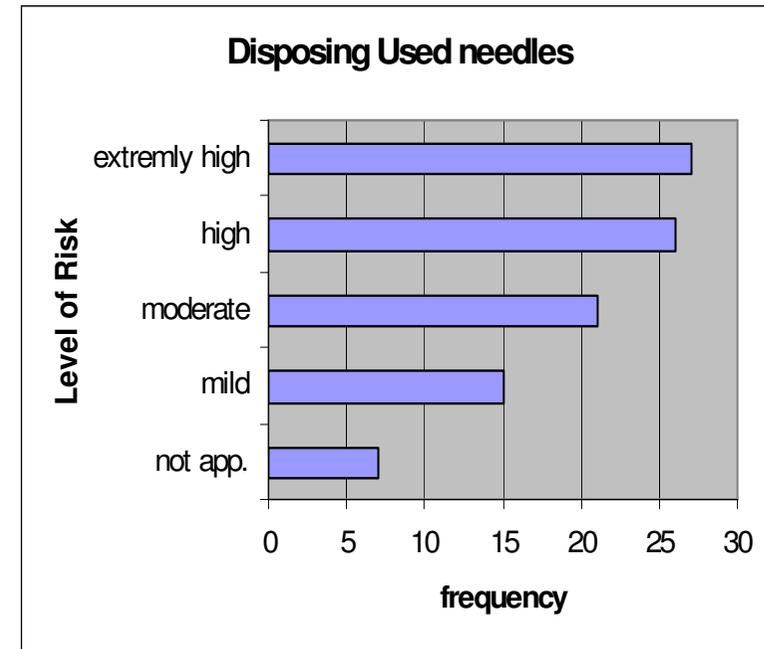
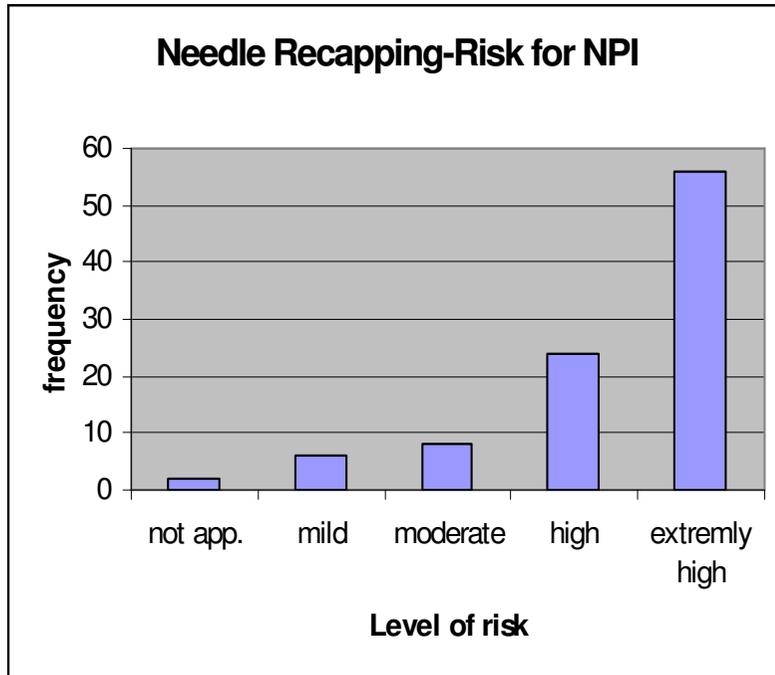


Risky procedures for NPI in hospital

- **Extremely high risk procedures** were rated as follows: needle recapping (56%) , disposing used needles (28.1%) and cleaning of sharp instruments (56.3%).
- **High risk procedures** to NPI were rated as suturing (30.2%) and blood taking (33.3%)
- Activities that are highly **associated with the risk of NPI** were lack of adequate sharps disposal containers (74.8%), blood transfusion (35.5%) and administering injections (25%).



Extremely high risk procedures for NPI



Exposure to NPI

- Only 16.0% of respondents had been **exposed to NPI**
- Of these, only 8.3% **reported the incident.**

This implies lack of knowledge of NPI protocols and Policies or failure to report incidents.

- Rabbits (2003) found that 91% of junior doctors in South Africa reported sustaining a needle stick injury in the previous 12 months, and 55% of these injuries came from source patients who were HIV-positive.
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Strategies for preventing parenteral transmission of HIV in HCWs

- Improving **compliance with universal precautions**. The **safe and appropriate use of injections**, including provision of single-use syringes.
 - **Proper disposal of used needles and sharps**, including proper segregation of such hazardous medical waste.
 - **Training and accompaniment** of nursing students are effective in reducing transmission through unsafe medical injections
 - Hospital-based routine **HIV antibody screening** is effective in securing a safe blood supply
 - Strengthening the **quality of blood for transfusions** through deferring high-risk donors, recruitment of volunteers and reducing unnecessary transfusions.
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Conclusion

- Needle recapping was the most frequent circumstance for NPI
 - Lack of adequate sharp disposable containers is the most important cause for the occurrence of NPI.
 - There is a positive significant association between the disposal of used needles and sharps contaminated with blood, administering of injections and taking of blood samples from patients and the occurrence of NPI.
 - Appropriate guidelines, adequate knowledge and enforcement of compliance to standard precautionary measures could reduce the incidence of NPI among nursing students.
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THANK
YOU

Group work: Strategies for reducing Hospital-acquired infections

- GROUP 1: Strategies for Nurses
- GROUP 2: Strategies for Doctors
- GROUP 3: Strategies for Laboratory and other staff

Discuss:

- Policy-related strategies
 - Training, education and accompaniment
 - Infection control strategies
 - Other/innovative strategies
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