

Quantitative Analysis of Nursing Students' Experiences with Needlestick Injuries



**LAKEVIEW COLLEGE OF NURSING
N302 - NURSING RESEARCH**

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Summary



- The purpose of this study was to evaluate needlestick incidents among students at a small liberal arts university.
- Substantive theory theoretical framework
- Review of literature was consistent with findings
- Design was descriptive using event-partitioning
- Stratified disproportionate random sampling using 99 students
- Three types of defense lines measured numerically and by the Likert scale
- SPSS 14.0 computer program for analyzing descriptive statistics
- Annual training regarding needlesticks

Problem and Purpose



- Problem:
 - The problem was that there was a lack of knowledge in reporting procedures among nursing students at a small liberal arts university.
 - Researchable using empirical data
 - Problem significant to nursing
- Purpose:
 - The purpose was to determine the incidence of needlesticks at a small liberal arts university among nursing students (Blackwell, et al., 2007)

Literature Review



- Review was appropriate, thorough and organized
- Current research included the latest from 2007
- Most do not report incident
- Gap in knowledge was the reason for failure to report needlestick injuries
- Most injuries occurred during recapping
- Need for clear reporting procedures and preventative treatment

Conceptual Framework



- Substantive theory theoretical framework used the Neuman System Model
- Framework fits the problem because it provides knowledge valuable in practice setting
- Concepts and relationships were identified as stressors and the flexible, normal, and resistance lines of defense
- Flexible lines of defense strengthened by healthy lifestyles, diet, exercise and rest

Research Question



- Research question clearly stated was “what is the prevalence of needlesticks among the nursing students at this university and what are the circumstances surrounding the stick?” (Blackwell, et al., 2007, p. 1)
- Researchable using a questionnaire
- Logical and explainable

Variables



- Uncontrolled dependent variables clearly identified as sources of stressors
- Conceptual descriptions listed as physiological, psychological, developmental, sociocultural, and spiritual
- Demographic describing students
- Contextual moderator variables being prevention

Design and Sample



- **Design:**
 - Descriptive design event-partitioning leads to change
 - Little research in area
 - Internal validity addressed by examining stressors, experienced gained, attitudes that changed with increased knowledge
- **Sample:**
 - Descriptive and representative of population using sophomore, juniors, and seniors
 - Sample method appropriate and available to all students on the web
 - Adequate size consistent of 99% of target population
 - Confidentiality addressed with no identifying information used

Data Collection Methods



- Data collection approach appropriate total student body had chance to participate
- Tools described adequately using a survey and SPSS 14.0 computer program for analysis
- Validity addressed by measurement of central tendency and frequencies used to analyze variables
- Approval by Human Subjects Subcommittee and Institutional Review Boards and consent given

Data Analysis



Variable	Statistical Procedures	Percentage with Standard Deviation
Age	SPSS 14.0 data analysis computer program measuring central tendency and frequencies,	23.02 years, SD 5.54 years
Gender	using ordinal numerical scale and Likert scale	90.6%female, 8.3% male, 1 no gender
Levels & Semesters		21.9% 2 nd sem soph, 11.5% 1 st sem jrs, 25% 2 nd sem jr, 41.7% seniors
Self assessed knowledge of procedure		10.4% not at all, 44.8% somewhat, 27.1% good, 17.7% very good
Injury occurrence		9.4% four students, 1 2 nd sem soph 3 1 st sem jr, 1 2 nd sem jr
Reported injury		4.2%
Amount of sleep prior		2.1% 3-5 hours 3.1% 6-8 hours
Where incident occurred		3.1% medical surgical unit
Anxiety level		4.72 (SD=2.31) gen. population, 7.09 (SD=2.58) blood-borne pathogen

Implications



- Implications for nursing were addressed as the anxiety experienced caring for a known blood-borne pathogen
- Students who have been stuck reported having less than optimal sleep night before
- Education at the beginning of the nursing program was vital to students regarding proper amount of sleep and patient care
- The need for increased education on proper use of sharps was indicated
- Increased supervision while preparing medications
- Reassurance that needlesticks do not result in punitive actions

Findings and Limitations



- Results can not be generalized to all nursing students
- The majority of needlesticks happen on the medical surgical unit
- No future recommendations for further studies were indicated
- Gaps in knowledge:
 - “How likely were needlesticks to be reported?” (Blackwell, et al., 2007)
 - “What prevented needlesticks from being reported?” (Blackwell, et al., 2007)

Summary Evaluation



- Study conducted by nursing students for nursing students regarding needlesticks
- Findings consistent with previous studies stating students experience anxiety over needlesticks
- Ensure safety in clinical setting by reviewing procedures before clinical and supervising medicine preparation
- Accurate reporting can change procedures that may have lead to an incident

Conclusion



- Organized clearly and precisely stating the problem and purpose
- Relevant to nursing
- Findings consistent with current literature review
- Design and analysis appropriate for research
- Logical and explainable
- Nursing students do experience needlesticks, education and explicit reporting procedures are needed in clinical settings
- Needlesticks should not be punitive
- Adequate sleep before procedures is paramount
- Sample size discrepancy

References



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