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ENHANCING KNOWLEDGE ON NEEDLE STICK INJURIES AMONG STAFF NURSES THROUGH A STRUCTURED TEACHING PROGRAM: A STUDY IN SELECTED HOSPITALS IN TUMKUR

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ABSTRACT

This study aimed to assess the knowledge level of staff nurses regarding needle stick injuries and evaluate the effectiveness of a structured teaching program in enhancing their knowledge. The pre-test results revealed that the staff nurses had a moderate level of knowledge, with an average score of 17.47 out of 30 (58.23%). However, after the implementation of the structured teaching program, a significant improvement was observed in their knowledge level. The post-test results showed that the mean knowledge score increased to 23.02 out of 30 (76.73%), indicating a considerable enhancement in knowledge. The analysis indicated that prior to the intervention, 76.7% of the staff nurses had moderate knowledge, while 23.3% had inadequate knowledge regarding needle stick injuries. However, after the structured teaching program, the percentage of staff nurses with moderate knowledge decreased to 41.7%, and the majority (58.3%) demonstrated adequate knowledge. Based on these findings, it can be concluded that the structured teaching program was effective in improving the knowledge of staff nurses regarding needle stick injuries. The program successfully bridged the knowledge gap and empowered the nurses with essential information to prevent and manage needle stick injuries effectively. Study explored the association between the level of knowledge and selected demographic variables, including age, professional qualification, experience, and source of information. The results revealed no significant association between these variables and the knowledge level of staff nurses. This suggests that the structured teaching program was equally effective across different age groups, professional qualifications, years of experience, and sources of information. In summary, this study highlights the importance of implementing structured teaching programs to enhance the knowledge of staff nurses regarding needle stick injuries. By equipping nurses with comprehensive knowledge, healthcare facilities can promote a safer working environment and minimize the risks associated with needle stick injuries.

Key Words: *Knowledge; staff nurses; Needle stick injury; structured teaching programme.*

INTRODUCTION:

Needle stick injuries pose a significant occupational hazard to healthcare workers, including staff nurses. These injuries occur when a healthcare worker accidentally gets pricked or punctured by a needle or other sharp medical instrument. It's a serious concern because it can lead to the transmission of bloodborne pathogens like HIV, hepatitis B, and hepatitis C. The prevalence of needle stick injuries in healthcare settings is quite alarming. Studies have shown that a significant number of healthcare workers experience needle stick injuries during their careers. This puts them at risk of contracting infectious diseases and can have long-lasting physical, emotional, and financial consequences.

There are several factors that contribute to the occurrence of needle stick injuries. One common factor is the fast-paced and high-pressure nature of healthcare environments, which can lead to rushed and careless handling of needles. Additionally, inadequate training, lack of awareness, and improper disposal of sharps also play a role in these injuries.

To address this issue, healthcare facilities have implemented various measures to prevent needle stick injuries. These include the use of safety-engineered devices, such as retractable needles and needleless systems, which minimize the risk of accidental needle sticks. Proper training on safe handling and disposal of sharps is also essential to reduce the incidence of these injuries.

In addition to prevention, it's important for healthcare workers, especially staff nurses, to be educated about the immediate actions they should take after a needle stick injury. These actions typically involve cleaning the wound, reporting the incident to the appropriate authorities, and seeking immediate medical evaluation and follow-up.

Furthermore, healthcare organizations should prioritize the provision of emotional and psychological support to healthcare workers who experience needle stick injuries. These incidents can cause significant distress and anxiety, and it's important to address the mental well-being of the affected individuals.

Needle stick injuries pose a significant occupational hazard to healthcare workers, including staff nurses. It's important for healthcare facilities to implement comprehensive prevention strategies, provide proper training and education, and offer support to those who experience these injuries. By prioritizing the safety and well-being of healthcare workers, we can minimize the occurrence of needle stick injuries and create a safer working environment for everyone involved. These injuries can lead to the transmission of bloodborne pathogens and have serious health implications. To address this issue, a structured teaching program was implemented in selected hospitals in Tumkur, with the aim of enhancing knowledge among staff nurses regarding needle stick injuries and their prevention.

METHODS:

in this study, researcher wanted to assess the effectiveness of a structured teaching program on needle stick injury among staff nurses. In this study one-group pre-test and post-test design to compare the knowledge scores of the nurses before and after the program was used. The study utilized a pretest-posttest design, involving a sample of staff nurses from different departments in the selected hospitals. The structured teaching program consisted of interactive sessions, presentations, and hands-on demonstrations. The program covered topics such as the anatomy of a needle stick injury, common causes, preventive measures, and post-exposure protocols. Pretest and posttest assessments were conducted to evaluate the effectiveness of the program.

The research setting was Shree Siddaganga Hospital and Research Center in Tumkur. Researcher chose this location because it was nearby, had available samples, and they had permission to conduct the study there.

The variables they considered were the independent variable, which was the structured teaching program, and the dependent variable, which was the knowledge of the staff nurses regarding needle stick injury. Also collected demographic information like age, gender, professional qualification, experience, living area, history of needle stick injury, and source of information on needle stick injury. The target population for the study was staff nurses working at the hospital. Used a convenient sampling technique, which means they selected participants based on availability and purposeful selection. This allowed researcher to have a wide variety of respondents for the study. The sample size for the study was 60 staff nurses. Then conducted a pre-test to assess the knowledge before the program, then implemented the structured teaching program, and finally conducted a post-test to evaluate the effectiveness of the program.

Overall, the study aimed to improve the knowledge of staff nurses regarding needle stick injury through a structured teaching program. It's important to understand the methodology to ensure the validity and reliability of the findings.

RESULTS:

Analyzed and interpreted the data collected from 60 staff nurses using structured questionnaires. The main objectives were to assess the pre-test knowledge score, evaluate the effectiveness of the structured teaching program, and determine any associations with demographic variables.

For analysis, used both descriptive and inferential statistics. Descriptive statistics help summarize and describe the data, while inferential statistics allow them to make inferences and find patterns or relationships among the data. The findings of the data were organized and presented according to the planned data analysis. The results are discussed in different sections, focusing on the pre-test and post-test knowledge scores, as well as the association between pre-test knowledge and selected demographic variables.

SECTION – I: DEMOGRAPHIC CHARACTERISTICS OF STAFF NURSES

Table – 1: Distribution of subjects by their age. N=60

Age	Frequency	Percentage
a. 21-30 years	6	10.0
b. 31-40 years	45	75.0
c. 41 years and above	9	15.0
Total	60	100.0

Table 1 depicts that among the staff nurses 10% belongs to the age group of21-30 years, 75% belonged to the age group of 31-40 years and remaining 15% belongs to the age group of 41 years and above.

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Table – 2: Distribution of subjects by their gender. N=60

Gender	Frequency	Percentage
a. Male	15	25.0
b. Female	45	75.0
Total	60	100.0

Table 2 reveals that 25% of the samples were males and remaining 75% werefemales.

Table – 3: Distribution of subjects according to their religion. N=60

Religion	Frequency	Percentage
a. Hindu	41	68.3
b. Christian	16	26.7
c. Muslim	3	5.0
Total	60	100.0

Table 3 depicts that majority 68.3% of the subjects belong to Hindu religion,26.7% were Christians and remaining 5% were Muslims.

Table – 4: Distribution of subjects according to their Professional qualification. N=60

Professional qualification	Frequency	Percentage
a. GNM	42	70.0
b. B.Sc. Nursing	15	25.0
c. M,Sc Nursing	3	5.0
Total	60	100.0

The table 4 depicts that Majority 70% of the subjects had the qualification of GNM Nursing, 25% of the subject's had the qualification of B.Sc Nursing and remaining 5% of the subjects had the qualification of M.Sc. Nursing.

Table – 5: Distribution of subjects according to their Experience. N=60

Experience	Frequency	Percentage
a. Less than 5 years	10	16.7
b. 6-10 years	20	33.3
c. 11-15 years	20	33.3
d. 16-20 years	10	16.7
Total	60	100.0

The table 5 reveals that 16.7% of the samples had Less than 5 years ofexperience, 33% of then had the experience of 6-10 years, 33.3% of them had 11-15 years of experience and remaining 16.7% of the subjects had 16-20 years of experience.

Table – 6: Distribution of subjects according to their living area. N=60

Living area	Frequency	Percentage
a. Urban area	36	60.0
b. Rural area	24	40.0
Total	60	100.0

The table 6 reveals that majority 60% of the subjects lives in urban area andremaining 40% of them lives in rural area.

Table – 7: Distribution of subjects by their History of needle stick injury. N=60

History of needle stick injury	Frequency	Percentage
a. Yes	15	25.0
b. No	45	75.0
Total	60	100.0

Table 7 depicts that among the staff nurses 25% of them have History of needle stick injury during their clinical exposure and remaining 75% of them notexposed to needle stick injury.

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Table – 8: Distribution of subjects by their source of information. N=60

Source of information	Frequency	Percentage
a. Mass media	4	6.7
b. Family	6	10.0
c. News paper	21	35.0
d. Academics	29	48.3
Total	60	100.0

Table 8 reveals that majority 48.3% of the subjects had information from academics, 35% of them gets information from Journals/Magazines, 10% of them getsinformation from family members and remaining 6.7% of them receive information from mass media.

SECTION II: KNOWLEDGE LEVEL OF staff nurses REGARDING THENEEDLE STICK INJURY

Table 9: Pretest and post test knowledge level of the staff nurses. N=60

Knowledge level	Pre test		Post test	
	Frequency	%	Frequency	%
a. Inadequate knowledge	14	23.3	0	0
b. Moderate knowledge	46	76.7	25	41.7
c. Adequate knowledge	0	0	35	58.3
Total	60	100.0	60	100

Table 9 depicts that majority 76.7% of the staff nurses had moderate knowledge and 23.3% of them had inadequate knowledge in the pretest. After administration of the structured teaching programme 41.7% of the subjects had moderate knowledge and remaining 58.3% had adequate knowledge regarding needle stick injury in the post test.

Table – 10: Analysis of pretest and post test knowledge scores of staff nurses. N=60

Knowledge	No. of Items	Max Score	Mean	Mean %	SD
Pre test	30	30	17.47	58.23	4.131
Post test	30	30	23.02	76.73	3.912

Table 10 depicts that the mean knowledge scores of respondents were found tobe 17.47 (58.23%) with standard deviation 4.131 indicates moderate knowledge of staff nurses regarding Needle stick injury. After administration of structured teaching programme the mean post test knowledge scores of respondents were found to be 23.02 (76.73%) with standard deviation 3.912 shows improvement in the knowledge of staff nurses regarding the Needle stick injury.

Table 11: Comparison of knowledge scores of staff nurses. N=60

Knowledge	Mean	S D	Mean difference	t Value	Df	Inference
Pre test	17.47	4.131	5.55	10.978	59	S
Post test	23.02	3.912				

From the table 11 it is evident that the obtained "t" value 10.978 is greater than the table value both at 0.01 level of significance. Therefore, "t" value is found to be significant. Hence it is inferred that there is significant difference between the pre test and post test knowledge level of staff nurses regarding the Needle stick injury.

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SECTION IV: ASSOCIATION BETWEEN KNOWLEDGE OF staff nurses AND THE SELECTED DEMOGRAPHIC VARIABLES

Table 12: Association between pre test knowledge of staff nurses and the selecteddemographic variables. N=60

Variables	Below Median	Median and above	Chi square	Df	P value(0.05)	Inference
1. Age in years						
a. 21-30 years	5	1	7.749	2	0.021	S
b. 31-40 years	19	26				
c. 41 years and above	1	8				
2. Gender						
a. Male	7	8	0.206	1	0.650	NS
b. Female	18	27				
3. Religion						
a. Hindu	15	26	1.921	2	0.383	NS
b. Christian	9	7				
c. Muslim	1	2				
4. Professional qualification						
a. GNM	23	19	6.617	1	0.42	S
b. B.Sc. Nursing	2	13				
c. M.Sc. Nursing	0	3				
5. Experience						
a. Less than 5 years	3	7	1.783	3	0.619	NS
b. 6-10 years	9	11				
c. 11-15 years	10	10				
d. 16-20 years	3	7				
6. Living area						
a. Urban	16	20	0.286	1	0.593	NS
b. Rural	9	15				
7. History of needle stickinjury						
a. Yes	7	8	0.206	1	0.650	NS
b. No	18	27				
8. Source of information						
a. Mass media	1	3	12.073	3	0.007	S
b. Family	3	3				
c. News paper	3	18				
d. Academics	18	11				

Table 12 shows X^2 value computed between the knowledge level of staff nurses and selected demographic variables. Variables such as age, Professional qualification and source of information were significant at 0.05 level of significance. Thus the hypothesis stated there is significant association between the pre test knowledge of staff nurses regarding Needle stick injury and selected demographic variables is accepted.

Overall, the analysis aimed to provide insights into the knowledge levels of staff nurses regarding needle stick injury and the effectiveness of the structured teaching program. The findings of the study revealed a significant improvement in the knowledge of staff nurses regarding needle stick injuries after the implementation of the structured teaching program. The pretest scores indicated a baseline understanding of the topic, while the post-test scores demonstrated a substantial increase in knowledge levels. This improvement suggests that the program effectively enhanced the knowledge of staff nurses in the selected hospitals.

DISCUSSION:

The staff nurses' pretest mean knowledge score was 17.47 (58.23%) with a standard deviation of 4.131. After the structured teaching program, the post-test mean knowledge score increased to 23.02 (76.73%) with a standard deviation of 3.912. The significant difference between the pretest and post-test scores indicates that the program had a positive impact on the nurses' knowledge regarding needle stick injury.

The total difference in the mean knowledge scores was 5.55, and the 't' value was 10.978. This difference was found to be statistically significant at a level of $p<0.01$. This means that there is a significant difference between the pretest and post-test knowledge levels of the staff nurses regarding needle stick injury.

The study found a statistically significant association between the knowledge scores and demographic variables such as age, professional qualification, and source of information. This suggests that these factors influenced the staff nurses' knowledge levels regarding needle stick injury.

Overall, the findings indicate that the structured teaching program effectively improved the staff nurses' knowledge about needle stick injury. It's important to continue providing education and training to enhance their understanding and promote safe practices. By equipping healthcare workers with the necessary information and preventive strategies, the risk of needle stick injuries can be minimized, leading to improved safety for both healthcare professionals and patients.

CONCLUSION:

The implementation of a structured teaching program on needle stick injuries proved to be effective in enhancing the knowledge of staff nurses in the selected hospitals in Tumkur. This study highlights the importance of educational interventions in promoting occupational safety and preventing needle stick injuries among healthcare workers. Further research and implementation of such programs are warranted to ensure the well-being of healthcare professionals and the delivery of quality patient care.

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