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A study to assess the knowledge and attitude regarding standardized surgical checklist in surgery on patient safety among operation theatre staff nurses in selected hospitals at Tumkur

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Abstract

Background of the study: A simple checklist developed by the WHO which has been shown to reduce surgical morbidity and mortality and sentinel events by such simple exercises as confirming the patient's identity, site, procedure and consent, sponge counts, etc. The aim of WHO Surgical Safety Checklist is to reinforce safety practices, better communication and teamwork between clinical disciplines.

Objectives of the study

- To assess the knowledge on standardized surgical checklist in surgery on patient safety among Operation Theatre staff nurses.
- To assess the attitude on standardized surgical checklist in surgery on patient safety among Operation Theatre staff nurses.
- To find out the correlation between the knowledge and attitude regarding standardized surgical checklist in surgery on patient safety among Operation Theatre staff nurses.
- To find out the association between the level of knowledge with selected socio-demographic variables.
- To find out the association between the level of attitude with selected socio-demographic variables.

Methodology: A study was conducted in selected hospitals, at Tumkur. A descriptive design was used. 100 operation theatre staff nurses were selected. Self administered knowledge questionnaire and attitude scale was distributed.

Major findings and results: The results shown that 100 Operation Theatre staff nurses 78 (78.0%) are having inadequate knowledge, regarding surgical safety checklist and 86 (86.0%) operation theatre staff nurses were having moderately favorable attitude regarding surgical safety checklist. The correlation coefficient of the overall Mean knowledge and Mean attitude of operation theatre staff nurses as $r = 0.30$ which was found to be not significant at $p < 0.05$ level hence there is a positive mild linear correlation between knowledge and attitude regarding surgical safety checklist. The chi square value shown that there was significant association between the level of knowledge with information $\chi^2 = 09.24$ and years of experience $\chi^2 = 8.98$. But the other socio demographic variables did not show any significant association. The chi square value shown that there was significant association between the level of attitude with years of experience $\chi^2 = 10.64$ nature of appointment $\chi^2 = 4.03$ monthly income $\chi^2 = 14.32$. But the other demographic variables did not shown any significant association.

Interpretation and Conclusion: The findings of this study support the need for conducting an awareness programme on standardized surgical checklist in surgery on patient safety. The study proved that majority of the Operation Theatre staff nurses had inadequate knowledge and moderately favorable attitude on standardized surgical checklist in surgery on patient safety.

Keywords: Knowledge, Attitude, Operation Theatre staff nurses, standardized surgical checklist in surgery on patient safety, operation theatre

Introduction

Surgery is the art and science of treating diseases, injuries, and deformities by operation and instrumentation. It is a carefully planned event or may arise with unexpected urgency [2]. Surgery has become an integral part of global health care, with an estimated 234 million operations performed yearly. Surgical complications are common and often preventable.

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Improving the patient’s safety involves assessing how patients could be harmed, preventing or managing risks, reporting and analyzing incidents, learning from such incidents and implementing solutions to minimize the likelihood of them reoccurring [6]. The patient is monitored and recorded for the safety purpose. After surgery also the patient is monitored and recorded for the safety of the patient [7].

A simple checklist developed by the WHO which has been shown to reduce surgical morbidity and mortality and sentinel events by such simple exercises as confirming the patient’s identity, site, procedure and consent, allergies, airway/aspiration risk, risk of blood loss, sponge counts, etc [8]. The Checklist is intended as a tool for use by clinicians interested in improving the safety of their operations and reducing unnecessary surgical deaths and complications [9].

The Checklist divides the operation into three phases, each corresponding to a specific time period in the normal flow of a procedure— (Sign In), (Time Out), and (Sign Out). In each phase, the Checklist coordinator must be permitted to confirm that the team has completed its tasks before it proceeds further [10].

The problems faced by patient in case of, failure in following the checklist are-if the patient’s identity, site and procedure has not been confirmed, the team may operate on wrong patient, wrong site and may perform wrong procedure [11]. The importance should be to promote the widespread use, implementation, and dissemination of the Checklist as a safety practice in every operation. Participating hospitals are encouraged to register with WHO [13].

Table 1: Source: World Health Organization 2008 all rights reserved

Blue Safety Checklist SM Surgical Safety 1 Sign In (Before induction of anesthesia)	2 Time Out (Before skin incision)	3 Sign Out (Before patient leaves operating room)
<p>Patient has confirmed:</p> <ul style="list-style-type: none"> <input type="radio"/> Identity <input type="radio"/> Site <input type="radio"/> Procedure <input type="radio"/> Consent <p><input type="radio"/> Site marked/not applicable</p> <p><input type="radio"/> Anesthesia safety check completed</p> <p><input type="radio"/> Pulse oximeter on patient and functioning</p> <p>Does patient have a known allergy?</p> <ul style="list-style-type: none"> <input type="radio"/> No <input type="radio"/> Yes <p>Difficult airway/aspiration risk?</p> <ul style="list-style-type: none"> <input type="radio"/> No <input type="radio"/> Yes, and equipment /assistance available <p>Risk of >500ml blood loss (7ml/kg in children)?</p> <ul style="list-style-type: none"> <input type="radio"/> No <input type="radio"/> Yes, and adequate intravenous access and fluids planned 	<p>Confirm all team members have introduced themselves by name and role</p> <ul style="list-style-type: none"> <input type="radio"/> Surgeon, anesthesia professional and nurse verbally confirm: <ul style="list-style-type: none"> <input type="radio"/> Patient <input type="radio"/> Site <input type="radio"/> Procedure <p>Anticipated critical events</p> <ul style="list-style-type: none"> <input type="radio"/> Surgeon reviews: What are the critical or unexpected steps, operative duration, anticipated blood loss? <input type="radio"/> Anesthesia team reviews: Are there any patient-specific concerns? <input type="radio"/> Nursing team reviews: Has sterility (including indicator results) been confirmed? Are there equipment issues or any concerns? <p>Has antibiotic prophylaxis been given within the last 60 minutes?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Not applicable <p>Is essential imaging displayed?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Not applicable 	<p>Nurse verbally confirms with the team:</p> <ul style="list-style-type: none"> <input type="radio"/> The name of the procedure recorded <input type="radio"/> That instrument, sponge and needle counts are correct (or not applicable) <input type="radio"/> How the specimen is labeled <input type="radio"/> (Including patient name) <input type="radio"/> Whether there are any equipment problems to be addressed <p>Surgeon, anesthesia professional and nurse review the key concerns for Recovery and management of this patient</p>



Methodology

Research approach

Quantitative Descriptive Approach

Research Design

Descriptive correlational Research Design

Variables

Research variables: Research variables used for this study include Knowledge and Attitude.

Socio-demographic variable: - Age, gender, religion, place of residence, professional educational status, years of experience, attended any training programe, nature of appointment, monthly income of family, source of information.

Settings of the study

The study was conducted in selected hospitals at Tumkur.

Population of the study

The target population for this study was operation theatre staff nurses of selected Hospitals.

Sample

The sample for the study was operation theatre staff nurses working in selected hospitals Tumkur.

Sample size

The sample size of the present study was 100 operation theatre staff nurses.

Sampling technique

The investigator used the non probability convenient sampling technique to select the samples.

Sampling Criteria

Inclusive criteria

1. Staff nurses who are working in operation theatre at selected hospitals, at Tumkur.
2. Operation theatre staff nurses who are available at the time of data collection.
3. Operation theatre staff nurses who are working in the ward on rotation basis.

Exclusive criteria

1. Operation theatre staff nurses who are not willing to participate in the study.
2. Operation theatre staff nurses who are sick.
3. Staff nurses who are qualified with ANM

Development and selection of the tool

After an extensive review of literature and discussion with the experts the self administered knowledge questionnaire and attitude scale was found appropriate to assess the knowledge and attitude regarding standardized surgical checklist in surgery on patient safety among operation theatre staff nurses in hospitals. The developed tool was refined and validated by the subject experts and guide.

The tool consisted of three sections

Section –A: Socio-demographic data

It consists of ten items for obtaining information about the selected socio-demographic data's such as age, gender, religion, place of residence, professional educational status, years of experience, monthly income, source of information, nature of appointment and any training programme attended regarding standardized surgical checklist in surgery on patient safety.

Section –B: Knowledge questionnaire on standardized surgical checklist in surgery on patient safety

The self administered knowledge questionnaire on surgical checklist includes 30 multiple choice questions.

Section –C: Attitude scale on surgical checklist

The Attitude scale consists of 10 items to assess the attitude of the operation theatre staff nurses towards standardized surgical checklist in surgery on patient safety.

Validity of the tool

Validity of the tool was assessed by obtaining opinion from 11 experts comprising of two surgeons, seven Nurse Educators (Medical surgical nursing specialty), one statistician and one Educationist.

Pilot study

Pilot study was conducted for 2days at Vinayaka Hospital, Tumkur. After getting written permission from managing director, the study was conducted among 10 samples that are 10% of the main sample to measure the authenticity of the tool, the strength and weakness of the tool was identified and assured confidentiality.

Reliability of the tool

The reliability of the tool is computed by using Split half technique, where 'r' value obtained was 0.914 which showed that the tool was reliable and valid.

Data collection procedure

A prior written permission was obtained from the Medical directors of the selected hospitals, (Akshay Hospital, Aditya

Orthopaedic Centre, Bharati Hospital, etc) at Tumkur. Study was conducted after self-introduction, nature and objectives of study were explained to the Operation Theatre staff nurses. Consent was obtained. Self-administered knowledge questionnaire and attitude scale was distributed. An average of 11 operation theatre staff nurses were made to fill the tool daily.

Plan for Data analysis

The data obtained was analyzed in terms of objectives of the study using descriptive and inferential statistics. The plan of data analysis is as follows:

- Organization of data in master sheet/computer
- Computation of frequencies and percentage for the analysis of socio-demographic variables.
- Computation of mean and mean deviation.
- Karl Pearson correlation coefficient was used to find out the relationship between the level of knowledge and attitude.
- Chi-square test was used to find the association between the research variables with the selected socio-demographic variables. The level of significance would be set at $p \leq 0.05$ levels of significance. This level is often used as a standard for testing the difference.
- The data will be presented in the form of tables and graphs.

Results

Section I: Frequency and percentage distribution of Operation Theatre staff nurses according to their socio-demographic variables.

The majority of the operation theatre staff nurses 66(66%) were in the age group of 21-30years, 31(31.0%) were in the age group of 31-40 years, 74(74%) were female Operation Theatre staff nurses and 26(26%) are males, 39(39.0%) were Hindus, 37(37%) were Christian 17(17%) were Muslims and 07(07.0%) were belongs to other religion, the majority of the staff nurses are staying in urban area 54(54%), and 46(46%) are staying in rural area, the majority of the Operation Theatre staff nurses educational qualification, 40(40.0%) had GNM education, 25(25%) were had B. Sc. (N), 17(17%) had P.C.B. Sc. (N), and 03(03.0%) were M. Sc (N), 36 (36%) of Operation Theatre staff nurses were having a monthly income of less than 5000, 42(42%) were having Rs.5001-10000, 49(49.0%) were having 4-6 years, 28(18.0%) were having 1-3 years, 18(18.0%) were having 7-9 years and 05(05.0%) were got 10 years and above, the majority of the samples 72(72.0%) did not get any training programme but only 28(28.0%) got training programme, with regard to nature of appointment 62(62.0%) were on temporary basis and 38(38.0%) were permanent employees, 22 Operation Theatre staff nurses (22%) were getting the information from mass media, 43(43%) were from self reading.

Section II: Assessment of knowledge regarding standardized surgical checklist in surgery on patient safety among Operation Theatre staff nurses.

The study shows 78 (78.0%) Operation Theatre staff nurses are having inadequate knowledge, 20 (20.0%) were found to have moderately adequate, and 02 (02.0%) of them had adequate knowledge regarding standardized surgical checklist in surgery on patient safety.

Mean Standard Deviation & Mean percentage of knowledge of Operation Theatre staff nurses regarding standardized surgical checklist in surgery on patient safety.

The overall Mean percentage levels of knowledge of Operation Theatre staff nurses were 39.9 with mean and SD was 11.97 \pm 4.62. This indicates that the Operation Theatre staff nurses were having inadequate knowledge regarding standardized surgical checklist in surgery on patient safety.

Section III: Assessment of attitude of Operation Theatre staff nurses regarding standardized surgical checklist in surgery on patient safety.

The study shows 86 (86.0%) Operation Theatre staff nurses were having moderately favorable attitude, 11 (11%) were having favorable attitude and 03(03.0%) were having unfavorable attitude regarding standardized surgical checklist in surgery on patient safety.

Mean Standard Deviation & Mean percentage of attitude of Operation Theatre staff nurses regarding standardized surgical checklist in surgery on patient safety

The overall Mean percentage levels of knowledge of Operation Theatre staff nurses were 64.98 with mean and SD was 32.49 \pm 4.75.

Testing of hypotheses

Section IV: Correlation between knowledge and attitude regarding standardized surgical checklist in surgery on patient safety among Operation Theatre staff nurses.

The correlation coefficient computed between the overall Mean knowledge and overall Mean attitude of operation theatre staff nurses as $r = 0.30$ which was found to be not statistically significant at 0.05 level i e $p > 0.05$. Though it was not significant it evidences that there is a positive mild linear correlation between knowledge and attitude regarding standardized surgical checklist in surgery on patient safety.

Section V: Association of knowledge of Operation Theatre staff nurses regarding standardized surgical checklist in surgery on patient safety with selected socio-demographic variables.

To find out the association between the level of knowledge and demographic variables, the chi square test has been used. The obtained chi square value shown that there was significant association between the levels of knowledge with source of information $\chi^2=09.24$, $df=2$, at $p=0.05$ and years of experience $\chi^2=8.98$, $df=3$, $p=0.05$ levels. But the other demographic variables did not show any significant association between the level of knowledge with demographic variables such as age, gender, religion and place of residence, educational qualification, attended any training programme, nature of appointment and monthly income of Operation Theatre staff nurses.

Section VI: Association between the level of attitude and selected socio-demographic variables.

To find out the association between the level of attitude and socio-demographic variables, the chi square test has been used. The obtained chi square value shown that there was significant association between the level of attitude with years of experience $\chi^2=10.64$, $df=3$, at $p=0.05$, nature of appointment $\chi^2=4.03$, $df=3$, at $p=0.05$, monthly income

$\chi^2=14.32$, $df=3$, at $p=0.05$. But the other demographic variables did not shown any significant association between the levels of attitude with socio-demographic variables.

Conclusion

The overall Mean percentage levels of knowledge of Operation Theatre staff nurses were 39.9 with mean and SD was 11.97 \pm 4.62. The overall Mean percentage levels of attitude of Operation Theatre staff nurses were 64.98 with mean and SD was 32.49 \pm 4.75. This indicates that the Operation Theatre staff nurses were having inadequate knowledge and unfavourable attitude regarding standardized surgical checklist in surgery on patient safety.

Discussion

The study shows 78 (78.0%) Operation Theatre staff nurses are having inadequate knowledge, 20 (20.0%) were found to have moderately adequate, and 02 (02.0%) of them had adequate knowledge regarding standardized surgical checklist in surgery on patient safety. The study shows 86 (86.0%) Operation Theatre staff nurses were having moderately favorable attitude, 11 (11%) were having favorable attitude and 03(03.0%) were having unfavorable attitude regarding standardized surgical checklist in surgery on patient safety. This indicates there is need to have interventional programme for operation theatre staff nurses to improve there knowledge and attitude towards surgical safety checklist and hence surgery related complications can be reduced.

Limitations of the study

1. The study is limited to 100 samples
2. The study is limited to operation theatre staff nurses and who are working in the ward on rotation basis

Recommendations

Based on the findings of the study, the following recommendations have been made for study:

- A similar study can be undertaken by utilizing other domains like practice.
- The study can be replicated on larger samples for a better generalization.
- A study can be carried out to evaluate the efficacy of various teaching strategies like self instructional module, structured teaching programme on surgical checklist effectiveness.
- A comparative study can be arranged among the operation theatre staff nurses in rural and urban areas.
- A follow up study can be conducted to evaluate the effectiveness of protocol.

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