



# Application of Modified Lowa Model Evidence Based Practice on Trauma Care Nurses Regarding Head Injury

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## Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Study Protocol

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## ABSTRACT

**Background:** Head injuries are a regular occurrence in emergency departments around the world, with more than 2 million annual visits in North American EDs and more than 400 000 in the United Kingdom alone. Despite the fact that the mechanism of injury is consistent, Head injuries are a regular occurrence in emergency departments around the world, with over 2 million visits in North American EDs and over 400 000 in the European Union alone. Regardless of how consistent the injury mechanism is.

**Objectives:** Holds data what nurses already know about the modified LOWA model. 2. Develop and test a protocol using a IOWA model that was adjusted. 3. Assess the updated LOWA model's effectiveness 4. To connect the knowledge score to demographic data.

**Research Approach:** Interventional approach Research design: - One group pre test and post test. Setting of the study: - The study will be conducted in AVBRH Hospital. Sample: - Staff Nurse Sample Size is 50 Sampling Technique is Purposive sampling. Setting of the study is The study will be conducted in AVBRH Sample: - Staff Nurse Sampling Technique: - convenient sampling Data Collection: - Field data Will be collected by the use of standardised questionnaires with three key sections: Section A (Standard standards), Section B (Socio-demographics and work history of staff) used the modified LOWA model and check list).

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**Expected Results:** Oriented it toward the application of the LOWA model. Those characteristics are what evidence-based practise on trauma care nurses concerning head injury entails, but they may be able to address the issues that Traumatic Brain Injury Nursing faces. Adopting this paradigm into traumatic brain injury nursing units is worth a shot. With the assistance of a specific case, this article will discuss the clinical application of the Lowa Model in traumatic brain injury nursing care.

**Conclusion:** In the light of the study findings, this study shows that, the implementation of LOWA Model evidence based practice has a positive effect on nurse's knowledge and practices regarding trauma care nurses regarding head injury. There was a significant improvement in the nurses 'knowledge and practice regarding LOWA Model evidence-based practice implementation compared with that before it. There was positive significant correlation between nurses' knowledge and their practice before and after program. Nurses' knowledge and practice about LOWA Model improved after application of this program.

*Keywords: Application; modified; LOWA model; trauma; care; head injury.*

## 1. INTRODUCTION

### 1.1 Background

Since its beginnings in the second evidence-based as during twentieth century treatment has increased in popularity. With the aim to become the top hot style in the world Practice, policy, administration, and education are all key components of global health-care systems. Nurses are being asked to apply the most recent study findings in order to improve patient care. to provide finest possible care Patient outcomes are better with research-based care than with traditional, It informs nursing decision and delivers procedural nursing care. Interactions with patients and acts. Nurses are folk's professions. Patients and healthcare experts are pressuring them to give demonstrable, better treatments in the real world. Nurses must also base their judgments on the most up-to-date information and revisit them on a frequent basis when new data becomes available. Evidence-based treatment integrates the result of other well research, clinical competence, patient requirements, and customer outcomes to make judgments regarding particular patients' well-being based on clear, explicit, and judicious evidence. Despite the fact that a lack of proof may appear to be a barrier, it's important to note that the necessity for health professionals to base their decisions on evidence has only lately become a priority. It makes little difference whether the need for evidence-based therapy has gained traction or not [1].

To patient history was undertaken. Health record (EHR) data was collected. Conducted to understand the extent of the challenge on a local level. Done. According to this data, an endoscopic (CT) scan of the head was done on

one out of every two patients who came with a head injury. Showed that the CCTHR did not correctly reflect 80 percent of all CT scans performed, indicating a specious concern with patient safety, efficiency, and resource usage. At our institution, did not vary significantly before and after the CWC campaign. In order to address our local issue of overuse, we need to utilize quality improvement (QI) methodologies. As a result, our goal with the follow is a checklist for analyzing the degree of a head injury Stud Since its introduction in the late twentieth century; evidence-based management has gained in favour. In order to address our local issue of overuse, we need to utilize quality improvement (QI) methodologies to become a dominant subject in health-care practise, From around world, policy, management, and education Patients benefit so much from research-based care than from Nurses. Believe that routine, procedural nursing care has an impact on Decisions, actions, and encounters with patients are all made by nurses. Nurses are experts who help people. now under increasing pressure from patients and healthcare companies to offer high-quality, accountable care[2].

### 1.2 Rationale

Head injuries are a common event in emergency departments across the world, Each year, nearly 2 million people attend EDs in North America, with over 400 000 in the United Kingdom alone. Despite the fact that practise. Based varies, studies show that over 90% of people have a pleasant response to these patients do not have a clinically relevant traumatic brain injury problem. Evaluating the use of imaging Head injuries have been frequently misunderstood for patients with minor injuries in high-resource

settings, according to studies, with a third of CT scans being misdiagnosed might be omitted [3].

Evidence-based training has risen in popularity since its beginnings; it has aspired to be a key figure. focus of discipline in the second half of the twentieth century, policy, management, and education within health services around the world. Nurses are now being urged to deliver the best possible treatment by using the most up-to-date scientific facts. Patient outcomes are better with research-based care than with conventional, procedural nursing care because it affects nurse decisions, attitudes; Evidence-based training has risen in since its inception in the latter half of the twentieth century, this has increased in popularity, seeking to be a major theme of discipline, policy, governance, and education within global health systems[4].

New Canadian standards have been established to help healthcare clinicians give evidence-based, best-practice treatment to the tough group of persons who have Mild traumatic brain injury symptoms that persist after a coma (PPCS) (MTBI). The compiled a list of MTBI diagnostic criteria. Mild head injury, commonly known as concussion, is one of the most frequent neurologic diseases today. thanks to Concussion prevention initiatives in sports, as well as claims of military explosives in the media victims the incidence of MTBI is now on the rising. in Ontario is between 493 and 653 per 100,000 people, according to a recent study that looked at both hospital-treated and family doctor-diagnosed cases. 4 Patients who have MTBI are expected to recover entirely in the great majority of cases. Centres of Excellence' The In a couple of weeks or months, (CDC) will publish a report The Centres for Disease Prevention and Control (Hpv) predicts that "Up to 15% of patients with MTBI may have factual information debilitating symptoms." 5 Despite the fact that these cases represent a tiny majority of patients, given the high prevalence of MTBI, they might represent a substantial amount of people[5].

### 1.3 Objectives

1. Assess Nurses' knowledge of the modified LOWA model.
2. Develop and implement protocol on modifiedLOWA model
3. Assess the effectiveness of modifiedLOWA model
4. To associated the with just some demographic variables, you could get a knowledge score.

## 2. METHODS

### 2.1 Research Approach

Interventional approach.

### 2.2 Research Design

One group pre test and post test.

### 2.3 Setting of the Study

The study will be conducted in AVBRH.

### 2.4 Sample

Staff Nurse.

### 2.5 Sample Size

50

### 2.6 Sampling Technique

Purposive sampling.

### 2.7 Data Collection

Field data will be behaviours and experiences Until it comes to patients, research-based management leads to better results than routine, procedural nursing care. Nurses in the profession are constantly under pressure from patients and healthcare professionals to provide high-quality, observable treatment nursing decisions used the modifiedIOWA model and check list).

### 2.8 Study Design

Interventional research design.

### 2.9 Setting

The setting is the physical location, and the data is the data. gathering status. This research has been conducted in selected areas of the Wardha district society. The investigator judged that the venue was appropriate for conducting a study since there were a sizeable number of staff nurses available for the research. Data collected on dated 15/03/2021 to 27/03/2021.

### 2.10 Participants

Staff nurses working in ward for more than 1 year, Staff nurses who are willing to participate.

Convenient sampling Data Field Would be Section A (Socio-demographics and work history of staff), Section B (Socio-demographics and work history of staff), Section C (Socio-demographics and work history of staff), Section D (Socio-demographics and work history of staff), Section E (Socio (Standard practises used the modified IOWA model and check list).

### 2.11 Variables: Demographic variable

Age, educational Level, year of experience.

#### 2.11.1 Independent variable

Staff nurses.

#### 2.11.2 Dependent variable

Check list for head injury management evaluation study for staff nurses.

### 2.12 Data Sources / Measurement

For each variable of interest, give data sources as well as details on measurement methods. If there are various communities, describe how the assessment methods are comparable.

Bias: no any sources of bias in this study

### 2.13 Study Size

The sample size of this study is 50 it includes staff nurses.

### 2.14 Quantitative Variables

#### 2.14.1 Statistical methods

The analysis was done with the help of inferential and descriptive statistics.

## 3. EXPECTED OUTCOMES/RESULTS

Give data sources and information of assessment measurement procedures for each variable of interest. If there are multiple groups, describe the comparability of assessment methods. Moreover, the estimated 'p'=0.92 was significantly greater than the allowed level of significance, i.e. 'p'=0.05. As a result, it is concluded that a nurse's years of experience are statistically related to their knowledge score.

### 3.1 Participants

50 staff nurses.

## 3.2 Descriptive Data

Application of modified IOWA model evidence base practice on trauma care nurses regarding head injury.

## 3.3 Outcome Data

The LOWA System supports patient care and keeps track of health-care costs in order to improve patient outcomes. It also makes things simpler to apply empirical evidence to medical care. To improve patient outcomes, nursing process and keeps a record of health-care expenses. Additionally, it makes it easier to apply empirical evidence to medical care.

## 3.4 Main Results

Nurses' knowledge scores on the Modified LOWA model in comparison before and after the test. The mean, standard deviation, and mean difference values are compared, and the student's paired t test is used at a significance level of 5%. 2.07 was the tabulated value for n=25-1, or 24 degrees of freedom. The 't' value that's been calculated i.e. 2.64 are much higher than the reported value for the Modified LOWA Model's overall knowledge score at a statistically acceptable level of significance of 5%. As a result, statistically, the general knowledge of the Modified IOWA model among nurses was effective. As an outcome, the H1 is approved.

## 4. DISCUSSION

The follows are the study's findings: The aims of the study, and also the conceptual model and hypothesis testing, have all been covered. According to the results of this poll, the majority of. A serious brain injury was observed in 16% of the patients. 56% had a serious head injury, and 28% had a light head injury. The knowledge score ranged from 7 to 18, with 7 being the lowest and 18 being the highest. the mean knowledge score was 11.522.75 in the pretest. A serious brain injury occurred in 16% of nurses., A serious head injury was reported by 44% of those polled, whereas a mild head injury was experienced by 40% of those polled. In the pretest, the least and highest knowledge scores were 7 and 11.802.85, respectively., In the pretest, the mean percentage of knowledge scores was 51.3012.42, with 28% of nurses having severe brain damage, 56% having moderate, and 28% having moderate head injury. The knowledge level required for the pre-

test spans from 7 to 18, with 7 being the lowest and 18 being the highest. According to the other study, exposing clinicians to unneeded radiation while also increasing healthcare costs. Mild brain injuries are diagnosed in more than 90% of emergency room patients (EDs). Using the Choosing Wisely Canada guidelines We set ourselves a goal. The Canada This project leveraged the The campaign for the Choosing Wisely tool (CWC) as well as the quality improvement (QI) technique. If the rate of CT scans for head injuries was reduced by 10% during a six-month period [6].

Traditional Chinese Medicine (TCM) nursing science, also known as TCM nursing or TCM nursing, was indeed the subject of the study. In China, it is an essential aspect of healthcare. Although TCM nursing techniques and skills are largely, are based on ancient clinical experience. TCM nursing is being stifled across the world. Evidence-based concepts must be incorporated into TCM nursing in order to standardize and globalize the practice [7].

The nursing decisions to handle day-to-day practical work that has an impact on patient well-being by -solving problems by research approaches that are known for their applicability's and use by multi-disciplinary healthcare teams. The aim of the research was to extend who were dealing with postpartum hemorrhage. Ain Shams Hospital's Obstetric and Gynecology Hospital used a quasi-study. Seventy nurses worked in the Ain Shams Hospital's labor and delivery departments. Throughout the data collection process, use 2 tools as a 1-structured self-administered questionnaire with two parts; 2- An observational checklist for evaluating nursing management in the context of PPH. Before the intervention, 45.7 percent of nurses had bad knowledge, while 80.0 % had excellent knowledge after the intervention. 84.3 percent had unsatisfactory PPH management activities prior to the model's intervention. Meanwhile, 87.1 percent of people had satisfactory practices following action. The IOWA model EBP has a strong impact on nurses' understanding and practice of PPH. There was a highly important difference in PPH information and practice before and after (P 0.001). Based on the findings, Designing teaching programs and offering periodic instruction on the IOWA Model evidence-based practice is something we think is a fantastic idea. To standardize the nursing care given in the obstetrics department, specific procedure booklets should be available [8].

These study are After screening 38,806 abstracts, 45 were selected for further review, with 16 (36%) papers on MTBI intervention being accepted. Nine are randomized, while the second addresses drugs . The final eight studies look at how management and information policies affect MTBI. Tables I and II contain data extracted from these 11 studies. Four clinical empirical case studies (15, 16–18) and one guideline study covering different aspects of MTBI management make up the remaining five intervention studies [9].

#### 4.1 Key Results

Adopting this paradigm into traumatic brain injury nursing units is worth a shot. With the assistance of a specific case, this article will discuss the clinical application of the Iowa Model in traumatic brain injury nursing care.

#### 4.2 Interpretation

To assess nurses' existing knowledge of the Modified LOWA model. 2. To assess the effectiveness of Modified LOWA Model among nurses. 3. To associate knowledge score regarding Modified LOWA Model among nurses in relation to demographic variables. The result of the study is Correlation between nurses' years of experience and their knowledge of the Modified LOWA model. The calculated 'F,' i.e. 0.08 at the 5% level of significance, was much higher than the tabulated 'F,' which was 3.44 (df=2,22). Moreover, the calculated 'p'=0.92 was significantly greater than the accepted level of significances a result, it is stated that a nurse's years of experience are statistically unrelated to their knowledge score. There's also evidence from other studies that's relevant. The LOWA model EBP has a strong influence on nurses' knowledge and practise of PPH. Before and after, there was a significant gap between PPH education and experience (P 0.001). Based on the findings, we look forward to developing training programmes and providing periodic instruction on the IOWA Model evidence-based approach is an excellent idea. Specific procedure guides should be supplied to regulate the nursing care provided in the obstetrics department [9].

#### 5. CONCLUSION

After a detailed analysis, the authors arrive at the following conclusion: Nurses' knowledge scores were compared. and during the test on the Modified LOWA model. For n=25-1 (24 degrees

of freedom), the tabulated result was 2.07. The estimated' value, 3.49, is significantly higher than the tabular value for total knowledge score of the Modified IOWA Model at a The significance value is 5%. what is a statistically acceptable threshold of significance As an outcome, statistically, it can be stated that nurses' general impression of the Modified LOWA model was effective.

## 6. LIMITATIONS

The limitation of these study is conducted only head injury patient and applying a IOWA model of staff nurses in selected hospital and no any bias of these study.

## CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline Participant's consent and ethical approval will be collected and preserved by the authors.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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