

## Original Research Article

# Student nurses' knowledge, attitudes and practices towards the management of burn injuries at an institution of higher learning in Windhoek, Namibia

Sofia Mukondeli<sup>1</sup>, Taimi Amakali-Nauseb<sup>2\*</sup>, Olivia Emvula<sup>3</sup>

<sup>1</sup>School of Nursing and Public Health, Faculty of Health Sciences and Veterinary Medicine, University of Namibia (UNAM), Windhoek, Namibia

<sup>2</sup>Department of Community and Mental Health Science, School of Nursing and Public Health, University of Namibia, Windhoek, Namibia

<sup>3</sup>Department of General Nursing Science, School of Nursing and Public Health Alumni, University of Namibia Windhoek, Namibia

**Received:** 19 May 2025

**Revised:** 08 July 2025

**Accepted:** 10 July 2025

### \*Correspondence:

Dr. Taimi Amakali-Nauseb,

E-mail: [tnauseb@unam.na](mailto:tnauseb@unam.na)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** Health facilities in Windhoek, Namibia are equipped with almost all the equipment's needed for managing burn injury patients. However, there is still a death rate of 5.43 per 100 000 patients admitted with burn injuries.

**Methods:** A cross-sectional descriptive study design with quantitative approaches was utilized, a structured questionnaire was completed.

**Results:** The respondents, results show that 84.7% (n=61) believe any of the registered nurses, enrolled nurse or doctor who was available can attend to burn patients first. In addition, 57.6% (n=41) would not dress burn wounds aseptically, 68% (n=49) of the respondents would regard attending to burn injury patient as an emergency. 58.3% (n=42) would cover burn wounds with paraffin gauze. 63.9% (n=46) believe only flamazine should be applied on burn wound. 72.2% (n=52) believed one can offer burn patients with food and fluids and let them lie on the back. 63.9% (n=46) believed one cannot initiate a patient on oxygen if they reach 90% on room air, 90.3% believed they can irrigate burn wounds with water resulting from chemical burns with corrosive materials immediately. Furthermore, 56.9% (n=41) would not place a blood pressure cuff on the severely burn patient, however 43.1% (n=31) would place a blood pressure cuff on a severely burned patient.

**Conclusions:** It is important for both the institution of higher learning, student nurses, and stakeholders to intervene and promote the consistent knowledge attitudes and practices to enable students to manage burn injuries.

**Keywords:** Attitudes, Burn injuries, Knowledge, Management, Practices, Student nurses

## INTRODUCTION

The World Health Organization defines, burns as injuries to a person's body tissues that were caused by heat, chemicals or radiation. Mohammed et al, further explained burns as, bodily injury resulting from exposure to heat, electricity or some radiations, marked by varying

degrees of skin destruction and hyper anemia often with the formation of watery blisters. According to Jeschke et al, "burn injuries are under- appreciated injuries that are associated with substantial morbidity and mortality, particularly severe burn injuries are accompanied by an immune and inflammatory response, metabolic changes

and distributive shock that can be challenging to manage and can lead to multiple organ failure".<sup>1-3</sup>

It is estimated that 90% of burn injuries which occur in low- and middle-income countries is due to limited public health infrastructure. Amin and Elmnem also indicated that over 95% of all burn deaths occur in low- and middle-income countries, fire-related burns alone account for over 300 000 deaths per year, with more deaths from scalds, electricity, chemical burns and others. In addition, a study conducted in Mwanza, Tanzania, of the 351 patients, who were admitted to the pediatric burn unit, 57 patients died due wound sepsis, anemia and severity of injury. According to the American Burn Association, "over 60% of the estimated US acute hospitalizations related to burn injury were admitted to 128 burn centers. Such centers now average over 200 annual admissions for burn injury and skin disorder requiring same treatment".<sup>4-6</sup>

World Health Organization, further stated that in countries such as India, over 1000 000 people are moderately or severely burnt each year. In Bangladesh nearly 173 000 children are moderately or severely burnt each year, and 17% of children with burns have a temporary disability and 18% have permanent disabilities. Research study concerning knowledge about proper care of burn victims conducted on nurses and students' nurses have confirmed gaps in theoretical knowledge especially Australia, the Netherlands and England and Brazil.<sup>1,7,8</sup>

Statistics further stated that injury is part of the most leading causes of death in Namibia including burn injury. World Health Organization statistician, pointed out that Namibia recorded 0.3% recording to the latest WHO data published death rate is 5.43 per 100 000 of the population in Namibia ranked 25<sup>th</sup> in the world. The Namibian Newspaper on the 12<sup>th</sup> March 2021 reported a loss of life from one of the 22 shacks that were burned down by fire in Erongo region, Walvis Bay. Walvis Bay councillors reported that many people are losing their lives in shacks fires at the town. The Namibian Newspaper, reported a loss of 16 lives who got burned in the bus after catching fire, of which one died after reaching the hospital.<sup>9</sup>

Burn injuries are significant health issues associated with morbidity and mortality. The complexity and complications of burn wounds can lead to prolonged recovery. Effective management of burn injuries requires a multidisciplinary approach and specialized.

This study focused on assessing the knowledge, attitudes, and practices of third-year nursing students at the Institution of Higher Learning regarding the management of burn injuries. Understanding their level of knowledge, attitudes, and practices is crucial for providing optimal nursing care and emergency treatment to burn patients. Given the high number of people treated for burn injuries, it is essential for student nurses to possess comprehensive

knowledge and astute assessment skills to manage these injuries and minimize their consequences.<sup>3,10,11</sup>

### ***Aim of the study***

This study aimed at assessing the knowledge, attitudes and practices towards management of burn injuries among third year student nurses at the Institution of Higher Learning Windhoek, Namibia.

### ***The objectives of the study***

The objectives of this study were to assess the knowledge towards the management of burn injuries among the third-year student nurses at the Institution of Higher Learning. Assess the attitudes towards the management of burn injuries among the third-year student nurses at the Institution of Higher Learning. Assess the practices towards the management of burn injuries among the third-year student nurses at the Institution of Higher Learning.

## **METHODS**

### ***Study design***

A quantitative approach with a cross-sectional, descriptive study research design was employed to assess the knowledge, attitudes, and practices of undergraduate degree- student nurses an Institution of Higher Learning in Windhoek, Namibia on the management of burn injuries. This approach was deemed appropriate since the researchers intended to quantify the level of knowledge, attitudes, and practices on the management of burn injury the undergraduate student nurses and can generate numerical data or the data that can be transformed into useable statistics.

### ***Study place***

The interview was conducted from the comfort of the participant's residence and that of the researcher as it was a virtual interview. Prior telephonic arrangements were made with the willing participants regarding the date and times most convenient to them so the interviews would be conducted. Completion of questionnaires was done during their lectures and free time on campus at the M-block.

### ***Study period***

The research study was conducted from January 2022 to October 2022.

### ***Study population***

The target population of this study was 90 undergraduate student nurses (3<sup>rd</sup> year degree student nurses) based at the Institution of Higher Learning and it is also where the study was conducted. Brink et al defined a sample as a

subset of the population that is chosen to represent the population.<sup>12</sup>

### **Selection criteria**

#### **Inclusion criteria**

All third-year student nurses at the Institution of Higher Learning in Windhoek, who were 18 years and above. All third-year student nurses at the Institution of Higher Learning in Windhoek, who were willing to participate in the study. All third-year student nurses at the Institution of Higher Learning in Windhoek, who were available during the study period.

#### **Exclusion criteria**

All third-year student nurses from other Institution of Higher Learning in Windhoek, who were 18 years and above. All third-year student nurses at the Institution of Higher Learning in Windhoek, who were not willing to participate in the study. All third-year student nurses at the Institution of Higher Learning in Windhoek, who were not available during the study period.

### **Study size**

There were 90 registered third year student nurses in a cohort register for 2022, therefore the subset of the population which was the sample was obtained using the formular:

$$n = n / 1 + n(e^2),$$

$$90 / 1 + 90(0.05 \text{ standard deviation})^2 =$$

73 nursing students who were available at the time of the study.

### **Procedure during the interview**

The researcher introduced herself, explained the purpose and objectives of the study and obtained verbal consent secondary to the written permission of the participants to be part of the research study. Demographic data was first obtained, interview then commenced, it was conducted in English and consisted of open-ended questions.

### **Data collection instrument**

The study used one major self-administered structured questionnaire to gather primary data. The structured questionnaire (an instrument designed to gather data from individuals about knowledge, attitudes and beliefs) was used to collect data from the participants. The structured questionnaires, that were created via Google form were used. The instrument consisted of 4 sections from A, B, C and D. Section A was on demographic data such age, gender, marital status, language, educational level and religion of study of participants section B contained

multiple choice questions with the content of attitudes on burn injury management, section C contained the agree to disagree type of questions with the content of knowledge with regard to management via five point of Likert scale, and lastly section D which consisted of true and false questions related to practice on burn management as well.<sup>12</sup>

The questionnaires was in English, as it is regarded the official and most used language across the selected Institution of Higher Learning.

### **Procedure for data collection**

The intended data on the knowledge, attitudes, and practices on the management of burn injury was collected through structured questionnaires, that were created via Google form the link of the questionnaire was sent to the third-year student nurses class group who then distributed it to individual participants. Completion of questionnaires was done during their lectures and free time on campus during the period of the 4<sup>th</sup> to 26<sup>th</sup> August 2022. Informed consent was required by each participant by clicking on the “do you consent” space attached to the structured questionnaires.

### **Pilot study**

Five (5) students were deducted from a group of second year student nurses or pretest; therefore, a quantitative approach was conducted and a probabilistic sampling technique was adopted because it employs random techniques using a simple random sampling in which every individual has a chance of being selected to follow a normal distribution as the population is quite large and participants were chosen randomly according to availability.

### **Data analysis**

As stated by Nangolo, data analysis is a process of organizing and giving meaning of data. Data was entered straight from google form link and using statistical method and frequency distribution, irrelevant observation and unwanted data was removed. All errors were fixed. A quantitative data analysis method was used because the knowledge of third year nursing students was measured and presented in graphs and diagram. The study made use of frequency tables on Microsoft excel. The variables were measured to make sense of the data.<sup>14</sup>

### **Validity**

Validity defined validity as the degree to which the test measures what is supposed to measure and consequently permits appropriate interpretations of the test scores. In this study, content validity was used to measure the knowledge and attitudes as well as practices of third year student nurses at an Institution of Higher Learning in Windhoek, Namibia.<sup>12</sup>

The validity was measured when the data instrument was given to the supervisor to check and control, and to ensure the content is valid and correct, and questions were constructed from different relevant literature reviews.

### Reliability

Reliability occurs when a test measures the same thing more than once and result in the same outcomes. Using this definition, reliability was tested through pilot study, whereby the 5 students from a group of second year student nurses were chosen randomly to be part of the preliminary study for testing consistency and correctness.<sup>12</sup>

## RESULTS

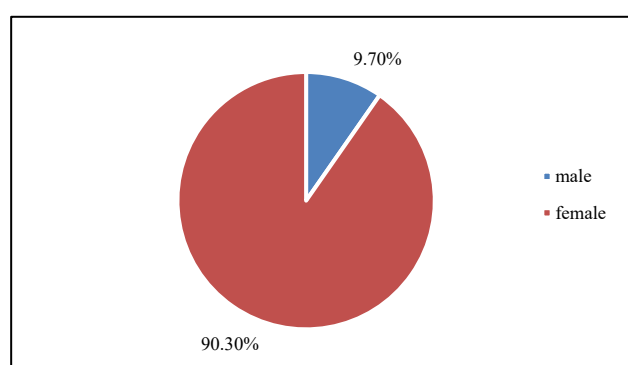
The results presented includes demographic data of participants which was section A, the attitudes in section B, the knowledge in section C and lastly the practice in section D, among third year student nurses at the Institution of Higher Learning on the management of burn injury patients. The results were then described as follows:

### Section A: demographic data

The respondents were (n=72), that includes gender, age, language spoken at home, education level, marital status and religious.

#### Gender of respondents

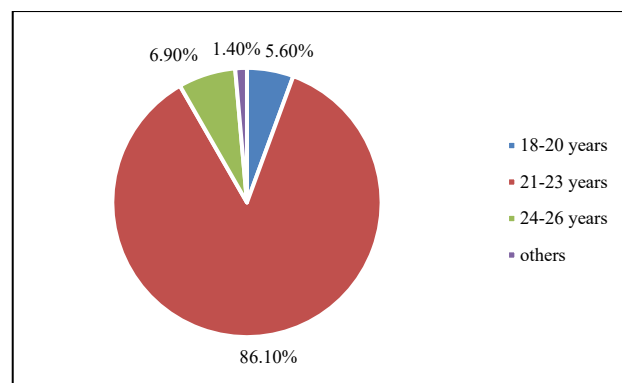
The gender of participants was 90.3% (n=65) female and 9.7% (n=7) were male, which shows that majority were female. The gender is shown in Figure 1 below.



**Figure 1: The gender of respondents.**

#### Age of respondents

The majority of respondents age were ranging between 21-23 years 86.1% (n=62), those who were 24-26 years were 6.9% (n=5) another group between 18-20 years were 5.6% (n=4), and last others above 26 years were 1.4% (n=1).



**Figure 2: The respondent's age.**

#### Marital status

Majority of the respondents were single 98.6% (n=71), 1.4% (n=1) was married, there was no divorce together with those who were widowed.

#### Language

The language that respondents speak was Oshiwambo 62.5% (n=45), English 19.4% (n=14), Afrikaans 9.7% (n=7) and the total of 8.3% (n=60) speak other languages.

#### Educational level of respondents

The education level of respondents shows that 95.8% (n=69) only have a grade 12 certificate, 2.8% (n=2) have a diploma in any course and none of the respondents had a bachelor's degree in any course. 1.4% (n=1) obtain other qualifications.

**Table 1: Educational level of the respondents.**

| Educational level             | Percentage | Frequency |
|-------------------------------|------------|-----------|
| Grade 12 certificate          | 95.8       | 69        |
| Diploma in anything           | 2.8        | 2         |
| Bachelor's degree in anything | 0          | 0         |
| Others                        | 1.4        | 1         |
| Total                         | 100        | 72        |

#### Religion of respondents

Majority of the respondents belong to the Elcin 41.7% (n=30), 16.7% (n=12) were catholic, another 20.8% (n=15) were Lutheran and 20.8% (n=15) belonged to the other religions.

### Section B: attitudes

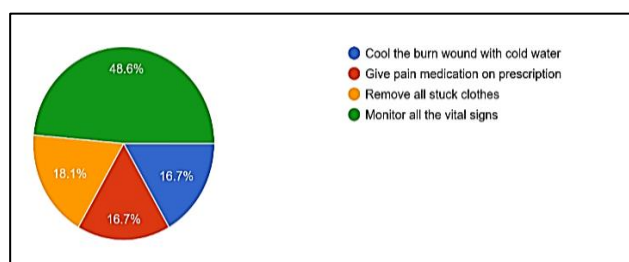
Section B was to address on the attitudes of TYNS at the Institution of Higher Learning on the management of burn injured patients and therefore 84.7% (n=61) believed that any of the below could be a doctor, RN, or EN can attend to burn injured patients first depends who is

available. 11.1% (n=8) think the doctor should, and the rest 4.2% (n=3) think it should be RN.

**Table 2: Summary on who should attend to burn patient first.**

| Options                                              | Percentage | Frequency |
|------------------------------------------------------|------------|-----------|
| Any of the following, doctor RN, EN who is available | 84.7       | 61        |
| Doctor                                               | 11.1       | 8         |
| Registered nurse                                     | 4.2        | 3         |
| Enrolled nurse                                       | 0          | 0         |
| Total                                                | 100        | 72        |

Another question used to assess was: “what should be done to a burn patient who just entered casualty with severely burned lower limbs”? and responses were as follow: 48.6% (n=35) thought one should monitor all vital signs when a burn injured patient just entered casualty with severe burned lower limbs, then 18.1% (n=13) would remove all stuck clothes first, 16.7% (n=12) would cool the burn wound with cold water, and another 16.7% (n=12) would rather give pain medication on prescription.



**Figure 3: Response of what should be done to a patient who just entered casualty with severe burned lower limbs.**

The second last question on this section asked what should be done to a patient who is severely burned, and according to the respondents 91.7% (n=66) would admit in the hospital, 4.2% (n=3) would treat at the clinic only, 2.8% (n=2) chose, patients to come from home every day for treatment and lastly 1.4% (n=1).

A number of respondents 91.7% (n=66) believe they would treat burned patients equally like any other patients as there is no need to scold them why they didn't take care of themselves, 5.6% (n=4) said they should be scolded by nurses, furthermore 2.8% (n=2) said they should be scolded by doctor and none said they should first be greeted.

### Section C: knowledge

Section C was constructed to test the knowledge of third year student nurses at the Institution of Higher Learning on how to manage burn injury patients at the hospital setting. Respondents were given options ranging from 1-

strongly agree, 2- agree, 3- neutral, 4- disagree and 5 for strongly disagree. In this section 57.6% (n=41) strongly disagree that burn wound dressing is not an aseptic procedure, 24.2% (n=17) only disagree that it is not an aseptic procedure, 1.4% (n=1) was neutral, however 4.5% (n=3) do agree that it is not an aseptic procedure and only 12.1% (n=9) strongly agree.

Another statement used was “attending to patients with burn injury is an emergency”. Responses were: 68% (n=49) strongly agree, 23.6% (n=17) do agree, another 6.7% (n=5) were neutral. However, only 1.4% (n=1) who strongly disagree, and none of them disagree. Quite a number of students 27.8% (n=20) were not sure whether burn wound should not be cleaned with betadine solution or should. 22.2% (n=16) did agree, 19.4% (n=14) did strongly disagree and 16.7% (n=12) only disagree.

A statement that said burn wound not be covered with bandage, of which 27.7% (n=20) were neutral, 26.4% (n=19) strongly disagree, 20.8% (n=15) disagree, and 18.1% (n=13) agree, however 6.9% (n=5) strongly agree. Majority of respondents strongly agreed that burn wound should be covered with paraffin gauze 58.3% (n=42) strongly agree, where else 30.5% (n=22) only agree, however, 6.9% (n=5) were neutral, 2.8% (n=2) disagree and therefore only 1.4% (n=1) who strongly disagree.

On the same section majority of students 37.5% (n=27) strongly agree and 26.4% (n=19) agree that only flamazine should be used to apply on burn wound. 31.1% (n=23) were neutral and only 2.8% (n=2) disagree, with 1.4% (n=1) who strongly disagree.

Out of respondents, 36.1% (n=26) said you may remove loose skin and break blisters by agreeing, 25% (n=18) were neutral and 13.9% (n=10) disagree, 12.5% (n=9) strongly disagree and 12.5% (n=9) strongly agree.

54.2% (n=39) strongly agree and 25% (n=18) only agree that the formula of calculating fluid requirements include the rule of nine, 16.7% (n=12) were neutral, 4.2% (n=3) disagree otherwise none of them strongly disagree.

**Table 3: Results on whether breathing should be assessed and the patients' airways to be established immediately or not.**

| Options        | Percentage | Frequency |
|----------------|------------|-----------|
| Strongly agree | 65.2       | 47        |
| Agree          | 26.4       | 19        |
| Neutral        | 5.6        | 4         |
| Disagree       | 2.8        | 2         |
| Strongly agree | 0          | 0         |
| Total          | 100        | 72        |

“Breathing should be assessed and the patient's airways should be established immediately”, responses were 65.2% (n=47) strongly agree, 26.4% (n=19) agree, 5.6%



(n=4) were neutral, 2.8% (n=2) disagree, however none of them strongly disagree.

#### **Section D: the practice**

This section was constructed to assess how third year student nurses from the Institution of Higher Learning practice when it comes to the management of burn injury patients, with the scale of true or false. 72.2% (n=52) respondents said true they would offer patients food or fluids and the burn patients must lie on the back, and only 27.8% (n=20) chose false, so they won't. 63.9% (n=46) said they will not initiate the patient on O<sub>2</sub> if they reach 90% on room air, however 36.1% (n=26) would.

About 51.4% (n=37) would not cover burn wounds immediately, while 48.6% (n=35) would cover immediately.

90.3% (n=65) would irrigate burn wounds resulting from chemical burns with corrosive materials with water immediately, 9.7% (n=7) would not. A statement says "it is not necessary to place a blood pressure cuff on a patient burned severely" and 56.9% (n=41) said it is true it is not necessary, however, only 43.1% (n=31) said false, they would place the cuff.

Majority of students chose false because they believe there is a need to determine the level and depth of burn, 79.2% (n=57) however, 21% (n=15) chose true and thus they would not determine the level and depth of burn. Lastly 79.2% (n=57) do not know the formula of calculating the fluid requirement were else 21% (n=15) know and therefore would practice it.

## **DISCUSSION**

#### **Section A: demographic data**

The majority of respondents in the study were female, consistent with previous research n=72 of which 90.1% (n=65) were female and 9.7% (n=7) were male, and therefore this study agrees with the study conducted by Mohammed et al, titled "effect of an educational training nursing program on nurses' performance regarding burn injury management", hence the majority of the participants in this study were also female 85% over male.

The respondent's age was ranging between 21-26 years. The majority of respondents age were ranging between 21-23 years 86.1% (n=62), those who were 24-26 years were 6.9% (n=5) another group between 18-20 years were 5.6% (n=4), and last others above 26 years were 1.4% (n=1). Regarding marital status, 98.6% (n=71) were single, whilst only 1.4% (n=1) was married, however none of the respondents was divorced or widowed.

Adding to this information, the educational level of respondents shows that out of (n=72) 95.8% (n=69) only

have a grade 12 certificate, 2.8% (n=2) have a diploma in any course and none of the respondents had a bachelor's degree in any other courses, apart from 1.4% (n=1) who obtained other qualifications.

#### **Section B: attitudes**

Previous studies discovered that most of studies indicated a negative attitude among nurses and students' nurses on burn injury management. This is in line with the study conducted by Mohammed et al, which shows that nurses had a negative attitude with regard to burn injury management. According to another study conducted by Hossein et al, there was a negative mentality about taking care of burn patients in the burn unit. 100% nurses in Egypt had a bad and negative attitude regarding burn injuries. However, the study conducted among third year nursing students at the Institution of Higher Learning disagrees, since the attitudes of this, students agreed, where 84.7% (n=66) believe any of the staff, could be a registered nurse, enrolled nurse or a doctor who is available at a time.<sup>2,15</sup>

91.7% (n=66) believed burn patients must also just be treated equally regardless of the fact that they got burned without scolding them. 48.6% (n=35) think one should monitor all vital signs when a burn injured patient just entered casualty with severe burned lower limbs, then 18.1% (n=13) would remove all stuck clothes first, 16.7% (n=12) would cool the burn wound with cold water, and another 16.7% (n=12) would rather give pain medication on prescription, these results are often in agreement with a study conducted by Kettan et al, were it was mentioned that immediate application of running cold tap water for a time period of 20 minutes, removing clothing and covering the wound with sterile dressing would positively affect the outcome of the burns.<sup>19</sup>

#### **Section C: knowledge**

Most previous studies show different levels in the knowledge and initial management for burns among health care providers including student nurses. The same study shows that there is a significant gap in the knowledge in terms of burn surface area estimation and the use of parkland formula to calculate the fluid requirement, additionally it was reported in the same study that nurses have limited knowledge on the management of mass burn injuries.<sup>16</sup>

Meanwhile the current study conducted on TYNS at the Institution of Higher Learning is in agreement with some previous studies, since results from of the respondents show that 57.6% (n=41) had poor knowledge because they do not regard burn wound dressing as an aseptic procedure at all by strongly disagreeing with the statement, another 24.7% (n=17) were also wrong by believe dressings of burn wound is not an aseptic procedure when they disagreed to the statement, however 1.4% (n=1) was neutral, and this is supported by a study

conducted by Kettan et al, where the researcher indicated that, for positive outcome of the burn, one must include the sterile dressing to the burn.<sup>19</sup>

This is also agreement with the study conducted by Mohammed et al, titled “nurses’ knowledge, practice and attitudes regarding burn injury management” that reported unsatisfactory knowledge regarding burn injury management. Majority of students, 68% (n=49) were right when strongly agreed that attending to burn injury is an emergency, 23.6% (n=17) were also right although only agreed, however this is evidenced by a study by Mohammed et al, where the researcher stated that burns require immediate emergency medical care to prevent complications and death. Most of students 27.8% (n=20) were neutral whether burn wound should not be cleaned with betadine solution or should. 22.2% (n=16) were wrong when they agreed that burn wound should not be cleaned with betadine solution, and therefore the knowledge on this was poor.<sup>13</sup>

Another group of few students was also neutral of whether they should cover burn wound with bandage or not, however majority still had satisfactory knowledge since 47.2% disagree to the statement. In addition, 88.8% of respondents were right by thinking burn wound can be covered with paraffin gauze, this is however in agreement with the Namibian standard treatment guideline, because it is well indicated that one must dress the burn wound with gauze as one of the steps for treatment. All 48.6% (n=35) had unsatisfactory knowledge when they thought one can just remove all break skin and blisters with 25% (n=18) who were neutral, however this is evidence by the Namibian standard treatment guideline, in which it was clearly indicated that “do not burst blisters of a burn patient”. 79.2% (n=57) had a satisfactory knowledge hence they agreed that the formula of calculating the fluid requirement includes the rule of nine. This is therefore in not in support with the study conducted by Lam et al, that indicated that there was a gap in the estimation of burn surface area and use of parkland formula. Majority of respondents, 65.2% (n=47) strongly agree to assess the breathing and establish airways immediately of a burned patient, and 26.4% (n=19) also agree and therefore this is in agreement with the Namibian Treatment guideline, that shows that breathing and airway establishment are priorities as part of treatment.<sup>16,17</sup>

#### **Section D: practice**

The practice of third-year student nurses at the Institution of Higher Learning regarding burn injury management showed room for improvement. Some students exhibited poor practices such as offering food or fluids to burn patients, not covering the wound immediately, and not initiating oxygen therapy when necessary. However, there were also instances of good practice, such as irrigating chemical burns with water and recognizing the need to determine the level and depth of the burn.

Regarding the practice of third year student nurses at the Institution of Higher Learning with regard to management of burn injured patients, presented that majority of 72.2% (n=52) of respondents possess poor practice by saying they would offer patient with food or fluids and allow patient to lie on their back. 63.9% stated that they will not initiate and patient on O<sub>2</sub> if they already reach 90% which is wrong and therefore there is evidence of poor practice.

In addition, respondents 51.4%, chose not to cover wound immediately however, a study by Kettan et al, said covering of burn wound immediately with sterile dressing would lead to positive outcome, and therefore the respondent in the current study shows poor practice. 90.3% (n=65) would irrigate burn wounds with water immediately resulting from chemical burns with corrosive materials, and this is in agreement with the Namibian standard treatment guideline, which stated that chemical burns should be washed or irrigated with plenty sterile water or normal saline. Those who believe there is a need to determine the level and depth of burn, were 79.2% (n=57) however, this agrees with a study conducted by Markiewicz-Gospodarek et al in which they stated that determining the treatment procedure depends on the extent and depth of burn, and therefore it is very important to determine the level and depth of burn.

Lastly 79.2% (n=57) did not know the formula of calculating the fluid requirement, because they chose true, to a statement that says “the formular of calculating fluid requirement is 10 ml x weight (kg) x % of BSA”. This is therefore supported by the Namibian treatment guideline, where it says the calculation of amount for amount of fluid to be administered over 24 hours is 4 ml x weight of patient in kg x BSA.<sup>3,17-19</sup>

There are some limitations to this study. This study was descriptive study that focused on the knowledge attitudes and practices towards the management of burn injury management among third year student nurses at the Institution of Higher Learning in Windhoek.

However, as the researcher released the link of the questionnaire, she was experiencing lack of participation from some of the respondents, because the researcher could not get all 73 respondents but only (n=72).

#### **CONCLUSION**

The results show that majority of the students possess the necessary positive attitude. The study showed fair knowledge, however the practice is poor, although previous studies reveal poorness in knowledge, and practices. Most of the studies also indicate negative attitudes within health professionals including student nurses with regard to burn injury management.

## ACKNOWLEDGEMENTS

Authors would like to thank the different authorities that granted us the permission to conduct this study as well as the third-year undergraduate degree student nurses who gave up their time to be involved in this study.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The Ethical Clearance Certificate was issued by the School of Nursing Ethical Committee in accordance with the Institution of Higher Learning in Windhoek, Namibia Research Ethics Policy and Guidelines*

## REFERENCES

- World Health Organization. Burns. 2018. Available from: <https://www.who.int/news-room/fact-sheets/detail/burns>. Accessed on 21 March 2025.
- Mohammed R, Hassan M, Mohammed IR. Effect of an educational nursing program on nurses' performance regarding burn injury management. Int J Novel Res Healthcare Nurs. 2021;8(2):50-63.
- Jeschke MG, Van Baar ME, Longsetty S. Burn Injury. Nat Rev Dis Premers. 2020;6.
- Amin M, Abd Elmnem H. Effect of home care program for mothers having children with burn injury. IOSR J Nurs Health Sci. 2018;7(4):46-57.
- Marwa NP, Tarimo EAM. Provision of care to hospitalized pediatric burn patients: a quantitative study among nurses at Muhimbili National Hospital, Dar es Salaam, Tanzania. BMC Nurs. 2019;18(1):1-10.
- American Burn Association. Burn Incidence Fact Sheet. 2016. <https://ameriburn.org/resources/burn-incidence-fact-sheet/>. Accessed on 21 March 2025.
- World Life Expectancy. World Health Ranking. 2018. Available from <https://www.worldlifeexpectancy.com>. Accessed on 21 March 2025
- Meschial WC, de Oliveira ML. Initial care to burn victims: nursing students' knowledge: a cross-sectional study. Online Braz J Nurs. 2014;13(4):518-28.
- The Namibian Newspaper on the 12th March 2021. Windhoek, Namibia.
- Abazari M, Ghaffari A, Rashidzadeh H, Momeni Badeleh S, Maleki Y. Current status and future outlook of nano-based systems for burn wound management. J Biomed Mater Res B Appl Biomater. 2020;108(5):1934-52.
- Kartal SP, Bayramgurler D. An introduction to burn injuries. In: Hot topics in burn injuries. Intech Open; 2018.
- Brink H, Van der Wart C, Van Rensburg G. (2018). Fundamentals of Research Methodology for Health Care Professionals. 4th edn. Juta and Company; 2018.
- Mohammed RK, Hassan MS, Mohammed IR. Nurses' knowledge, practice, and attitude regarding burn injury management. Minia Sci Nurs J. 2021;9(1):97-103.
- Nangolo RH. Knowledge, Attitudes, and Practices Regarding the Risk of Hepatitis E Virus Among the Residents of Havana Informal Settlement in Windhoek, Namibia. University of Namibia. 2021.
- Hosseini FA, Momennasab M. Nursing student experiences of caring for burned patient: from fearfulness to normalization. Investig Educ Enferm. 2020;38(1):e09.
- Lam NN, Huong HT, Tuan CA. Nurse knowledge of emergency management for burn and mass burn injuries. Ann Burns Fire Disast. 2018;31(3):246.
- Namibian Standard Treatment Guideline. 2nd edn. Ministry of Health and Social Services. Windhoek, Namibia; 2021.
- Markiewicz-Gospodarek A, Koziol M, Tobiasz M, Baj J, Radzikowska-Büchner E, Przekora A. Burn wound healing: clinical complications, medical care, treatment, and dressing types: the current state of knowledge for clinical practice. Int J Environ Res Public Health. 2022;19(3):1338.
- Kattan AE, AlShomer F, Alhujayri AK, Addar A, Algerian A. Current knowledge of burn injury first aid practices and applied traditional remedies: a nationwide survey. Burns Trauma. 2016;4.
- Ter Horst B, Chouhan G, Moimen NS, Grover LM. Advances in keratinocyte delivery in burn wound care. Adv Drug Deliv Rev. 2018;123:18-32.

**Cite this article as:** Mukondeli S, Amakali-Nauseb T, Emvula O. Student nurses' knowledge, attitudes and practices towards the management of burn injuries at an institution of higher learning in Windhoek, Namibia. Int J Community Med Public Health 2025;12:3890-7.