

## Original Research Article

# Compliance with Burns Treatment Protocol by Nurses at Kabwe Central Hospital, Kabwe, Zambia

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**Abstract: Background:** Annually, burns result in more than 7.1 million injuries and more than 250,000 deaths, with the vast majority being in low and middle income countries. In Zambia, at Kabwe Central Hospital, burn trauma is one of the commonest causes of trauma admissions in surgical wards. To mitigate the trend, Ministry of Health distributed infection prevention and control guidelines and emphasized on the need to manage all patients with burns in accordance with national guidelines. **Main Objective:** To assess the level of compliance with Burns treatment protocol by nurses at Kabwe Central Hospital. **Materials and Methods:** A cross sectional study design was used in the study. A self-administered questionnaire was used to obtain data from 60 nurses and 55 nurses observed using an observational checklist. Convenient sampling was used to recruit nurses for the study. **Results:** Findings showed that observed compliance to burns treatment protocol is very low and stood at 51%. This was despite high knowledge, good management support and positive attitudes expressed by the majority nurses. This can be attributed to rare availability of most medical surgical supplies at the institution. **Conclusion and Recommendations:** The findings suggests the need of the hospital to improve on the supply of resources to the burns units as most nurses reported resource inadequacy in the management of burns. There is also need of building an ideal burns unit.

**Keywords:** Burn treatment protocol, nurse, compliance.

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## INTRODUCTION

Annually, burns result in more than 7.1 million injuries, the loss of almost 18 million disability adjusted life years (DALYs) and more than 250,000 deaths worldwide (WHO, 2012). According to Dayane (2017), Burn victims deserve special attention, not only because of their physical and psychological weakness and distress but also due to their great potential of acquiring nosocomial infections. Considering the undue suffering that these patients with burns undergo, it is imperative that nurses adhere to burns treatment guidelines at all levels of health care systems.

According to the WHO burns treatment protocol, the focus on treatment should be on speedy healing and prevention of infections. In line with WHO standards, Ministry of Health (MOH) developed the national burn treatment protocol in 2017 whose main goal was to ensure that all patients with burns are managed according to prescribed national guidelines using aseptic technique at all times to prevent complications. This study was conducted at Kabwe

Central Hospital where most burns patients developed infection on the burn wound sites. And today nurses are considered to be the key players in infection control practices (Smith *et al.*, 2009).

Nurses play a pivotal role in creating a culture of patient safety among burn patients by use of their infection control training (Stone, 2013). According to Stone (2013), nurses are the front liners and can take the leading role in infection control procedures to the patients.

Lack of knowledge among nurses can increase the rate of the hospital-acquired infections in burns patients. Supported by a study that was conducted in Zimbabwe, Tirivanhu, Ancia and Petronella (2014), determined the barriers of infection prevention and control practices among nurses at the Bindura provincial hospital. The study revealed that the majority of nurses' lack knowledge of infection control principles as only 14 (28%) of 50 nurses had excellent knowledge on infection control principles.

Based on the above literature, we can conclusively state that the quality of nursing care depends to a large extent on the knowledge, skills, attitude and activities of the practicing nursing staff.

Any laxity in the application of infection control practices in the burns patients can result in significant negative consequences (Eldeen *et al.*, 2016).

According to Nyakanda (2012), good performance by nurses is enhanced by a supportive working environment like having sufficient equipments and supplies. With adequate medical equipments and supplies, literature has indicated that compliance improves (JHIEPIEGO, 2006). In this way the safety of health care workers and patients is guaranteed as they are protected from nosocomial infections. Literature has also shown that the shortage of equipments and other medical supplies is also a major contributor to poor compliance in the sense that despite the knowledge health workers may possess and their desire to comply with guidelines, it becomes impossible to do so (Didier *et al.*, 1999). The Zambian Public Health Act, Cap 295, also stipulates that the health care institution should provide a safe environment for the patients in their care. In a study done by (Garret, 2015), he indicated that patients visitors and health care providers routinely contaminates health care environment through daily activities. This can increase the risk of infection transmission.

It is also established that when management supports the implementation of the protocol and makes Infection prevention practice as a priority, the compliance level becomes high. The support can be in form of management getting evolved in orientation of new staff on procedures and protocols as a way of imparting a sense of ownership (Katowa, 2010).

Compliance with burn treatment protocol regarding infection prevention has shown to reduce infection transmission to patients (Parkin, 2012). Therefore the need to conduct this study to identify the gap.

## METHODS

The study was conducted at Kabwe Central Hospital using a descriptive cross sectional design. The participants were the nurses and midwives working in surgical ward at Kabwe Central Hospital. A Cross sectional study design was used in the study. A self-administered questionnaire was used to obtain data from 60 nurses and 55 nurses were observed using an observational checklist over a period of 2 months. Convenient sampling was used to recruit nurses for the study.

Reliability tests of the instrument were done using SPSS software on knowledge, attitude and practice variables which showed Cronbach alphas of 0.7, 0.9 and 0.8 respectively. While Validity was insured by conducting extensive literature review on burns treatment protocol according to the Ministry of Health and World Health Organization guidelines.

### Data Entry and Analysis

Data was analysed using SPSS version 23.0 software. Cross tabulations among the dependent and independent variables were done to establish association using the Chi-Square test on SPSS software. The level of statistical significance was set at 5%. Therefore, only  $p$  values of 0.05 or less were considered statistically significant.

### Ethical Consideration

Ethical approval was received from the Research Ethics Committee of the University of Zambia (Ref No.089-2019). Permission to conduct the study was sought from the Senior Medical Superintendent of the Hospital. All respondents consented before participating in the study.

## RESULTS

### Demographic

Fifty percent (50%) of the respondents were in the age group 30-39, and majorities (75%) were female. Professionally, the majority (70%) attained diploma level qualification and (65%) had less than 2 years' work experience.

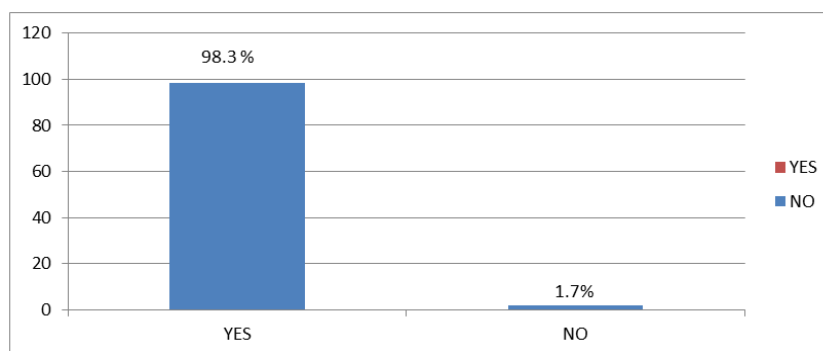
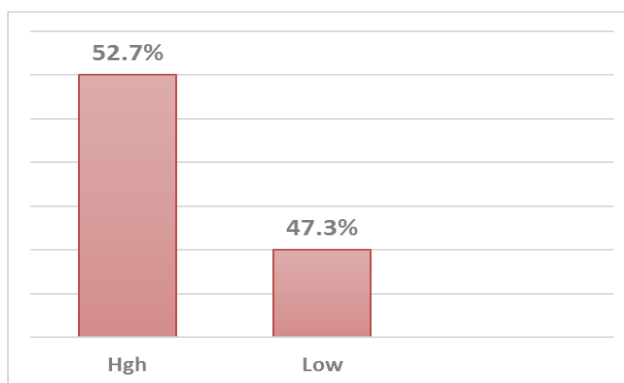


Figure 1: Respondents practices regarding infection prevention and control, (n=60)

According to Figure 1, almost all, 98.3% the respondents reported good infection prevention and control practices. This can be attributed to the fact that the regulation of General Nursing Council of Zambia requires that all nurses trained in Zambia need to undergo the training in infection prevention before they qualify as nurses (GNCZ, 2014). This explains why practices were good in many participants.

**Respondent’s attitudes towards burns treatment protocol**

In this study the findings showed that all (100%) respondents expressed positive attitude towards burns treatment protocol. This may be attributed to continuous sensitizations and orientations of nurses on burns treatment protocol at the hospital.



**Figure 2: Observed compliance to burns management protocol among respondents (n=60)**

Figure 2 shows that that only, (51.7%) of the respondents had high compliance to burns management protocol while (47.3%) had low compliance. This

finding may be attributed to inadequate medical surgical equipments.

**Table 1: Availability of medical surgical supplies in the treatment of burns, (n=60)**

Availability of medical surgical supplies	Frequency	Percentage
Always available	13	21.7
Rarely available	47	78.3
<b>Total</b>	<b>60</b>	<b>100</b>

Majority (78.3%) respondents indicated rare availability of medical and surgical supplies in units while (21.7%) reported that medical/surgical supplies

were always available. The availability of medical surgical supplies may influence the nurses in regard to compliance with burns treatment protocol.

**Table 2: Association between compliance with burns treatment protocol and management support in implementation of burns protocols**

Variables		Compliance with burns treatment protocol			p-value
		High	Low	Total	
Management support	Good	25 (51%)	24 (49%)	49 (100%)	<b>0.833</b>
	Poor	6 (54.4%)	5 (45.5%)	11 (100%)	
Total		31 (51.7%)	29 (48.3%)	60 (100%)	
Availability of medical-surgical supplies.	Always	7 (53.8%)	6 (46.2%)	13 (100%)	<b>0.859</b>
	Rarely	24 (51.1%)	23 (48.9%)	47 (100%)	
Total		31 (51.7%)	29 (48.3%)	60 (100%)	

The relationship between compliance with burns treatment protocol and availability of medical-surgical supplies was not significant.

**DISCUSSION**

Socio-demographic findings showed that 91.7% of the respondents were within the age group of 20–39 years. This finding is congruent with Katowa’s (2010) study in Mufulira district where the majority (61%) respondents were young. This could be attributed

to the fact that most nurses working especially in government health institutions are young because older nurses either opted for voluntary separation or are retired. However, the findings were contrary to Faiza’s (2011) findings in Khartoum where majority of the nurses (70%) were aged over 40 years. This study sample was predominantly female (75%) which could be attributed to the General Nursing Council of Zambia recruitment guideline ratio of three (3) females to one (1) male (GNC, 2010). Therefore, there are more females

than males in nursing. The number of respondents (65%) with 0-2 years' experience was higher than that reported by Gebreegiabher (2014) in North Ethiopia and Katowa (2010) at Ronald Ross Hospital in Mufulira District. Professionally, majority (70%) respondents in the study were Registered Nurses. This may be attributed to the MoH pronouncement that Enrolled nursing programme should be phased out by the year 2022. This substantiate the study findings as most Enrolled nurses had upgraded to Registered nursing.

All the respondents in the study had high knowledge on burn treatment protocol. These findings are consistent with the study done by Mussa and Abass (2014) who also reported adequate knowledge levels among nurses. These findings could be attributed to many in-house sensitizations that have been carried out among health care workers on infection prevention in burn wounds. Despite high knowledge among nurses at Kabwe Central Hospital inadequacy in the supply of resources in the burns units which helps in achieving the goal of infection prevention as well as none availability of an ideal burns unit might have contributed to the recording of high burns infections at the institution. Contrarily to these findings, a study conducted in Egypt by Ibrahim *et al.*, (2011) found that Nurses' knowledge regarding burn and nosocomial infection in burn unit was low.

Any laxity in the application of infection control practices in burns patients can result in significant negative consequences (Eldeen *et al.*, 2016). In this study, almost all (98.3%) respondents reported good infection prevention and control practices. General Nursing Council of Zambia regulation requires that all nurses trained in Zambia need to undergo the training in infection prevention before they qualify as nurses (GNCZ, 2014). This could explain why practices were good in many participants. However, a quarter had never been trained in IPC and the majority (91.7%) had never attended any annual IPC training workshops. This was contrary to a study done by Zeinab (2015) were three quarters of the study sample had attended at least two sessions of infection prevention and control practices. Further findings showed that almost all (98.3%) respondents washed their hands regularly before and after wound dressing. This figure is higher compared to a study done by Katowa (2010) where only 61% of the respondents reported to have washed their hands regularly.

The attitude of nurses in the ward determines to a greater extent whether they can comply with infection prevention practices in Burns units (MacGaw *et al.*, 2012). Overall, all the respondents in the current study expressed positive attitudes towards burns treatment protocol. This finding was in agreement with the study conducted by Sessa *et al.*, (2011) in Italy where the study revealed extremely positive attitudes. This may be attributed to continuous sensitizations and orientations of

nurses on burns treatment protocol at the hospital. On the contrary, a study done by Sarani *et al.*, (2015) in Iran showed that only 33% had good attitudes.

Most studies have shown that compliance with burns treatment protocol and infection prevention among nurses is still sub-optimal and inconsistent (Gebresilassie *et al.*, 2014; Punia, *et al.*, 2014; Bakar *et al.*, 2015). In this study, only 51.7% of the respondents had high compliance to burns management protocol. Although many studies done by (Libetwa, 1997; Hamomba, 2006; Katowa, 2010) attributed the findings as being due to staff shortage. The current study findings could be attributed to inadequacy of resources at the institution which made compliance difficulty among personnel, as three quarters stated that medical surgical supplies were rarely found in burns units and the wards as a whole. This thought was also shared by Okechuku *et al.*, (2012) study where it was found that the majority of the healthcare workers complained of inadequate resources to comply with standard precaution guidelines. Although the majority (81.7%) of the respondents indicated good management support in implementation of burns protocol, 80% indicated inadequacy of medical surgical equipment for burns management, which could have contributed poor compliance observed. This result was in agreement with Kumar *et al.*, (2002) who found that lack of necessary equipment to use was a major reason why nurses did not adhere to infection prevention practices. However, availability of resources showed no significance association with compliance to burns treatment guidelines in the current study.

The relationship between compliance with burns treatment protocol and management support in implementation of burns protocols, was not significant. These findings were in agreement with the study done by Mukwato (2008) who reported non significance of findings.

## CONCLUSION

Nurses working in the burns specialized wards have a major key role in the prevention of infection during burns patient management and as such, they need to be competent in the application of burn treatment protocol all the time. Overall finding showed that most nurses had adequate knowledge on burn treatment protocol and were compliant. The factors associated with compliance were adequate knowledge on burns treatment protocol and good attitude by nurses. However, there is need of providing adequate medical surgical supplies in burns units which was found to be rarely available. In addition, in this study only 55 out of the 60 interviewed candidates were observed on their infection prevention practices. This can result in biased results since some of the participants who were not observed could have had some peculiar IP practice.

## LIMITATION OF THE STUDY

1. The small sample size and the convenient sampling method used in this study may limit the generalization of findings to other settings.

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