



## A Survey of Wound Care Practices by Nurses in a Clinical Setting

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### Abstract

**Background:** Nurse practitioners play a vital role in wound care and management because of the prevalence of wounds in the community and hospital setting. **Aims and objectives:** The purpose was to identify current knowledge and practices of nurses with respect to wound management. **Method:** A qualitative descriptive research was designed, nineteen nurses in wound care wards in Bingham University teaching hospital were recruited into this study. This was achieved with the aid of a self-administered questionnaire for a two-week period. **Results:** Three groups of nurses responded to this survey (73.7% males; 31.6% aged 31-40 years). Registered nurses dominated (68.4%), majority of them worked in male ward (36.8%) and private ward (36.8%). Almost on full-time (94.7%), more than half were diploma holders (57.9%) with 1 to 5 years of experience (47.4%). Majority (84.2%) were involved in wound treatment and management, there were significant association between years of experience and wound classification, wound treatment, treatment failure and treatment failure factors. **Conclusion:** Wound care practices require accurate knowledge and assessment skills, a better understanding of wound management provides comprehensible, rapid patient wound care and minimizes patient mortality as well as reduces health services financial costs.

**Keywords:** Wound care practices; Nurses; Patients; Clinical setting.

## 1. Introduction

Wound management is a provision of ideal environment for wound to heal which involves treating all kinds of wounds by nurse professionals in wound care by [Drew, et al. \[1\]](#). Wound care practices entail policies, practice standards and adjunct tools that need to be diverse to meet clinical needs, similar to educational support for specifically the science, technique and application needs in this highly challenging and changing area of practice [\[2\]](#).

To improve patient outcomes in wound care practices, a common language is used as clinical indicator to overcome problems in the diagnosis and management of wounds for healthcare professionals especially nurses by [Cutting, et al. \[3\]](#).

Effective healthcare intervention, calls for identification of several factors such as funding, sample selection, sample size, recruitment of patients, mortality and attrition rates for clinically effective wound care [\[4\]](#).

A better understanding of wound care practices is very important for nurses who are critical members of healthcare team in relation to preventing infection, as well as identifying, documenting and managing the wound, therefore the first step is to identify the need for educational resources to support best wound care practice [\[2\]](#).

Pain management, wound infection and pathogens, providing cost effective treatment, maintaining quality of care according to principles of clinical governance, improving healing and reducing mortality rates are the crucial challenges in wound management by [Norman, et al. \[5\]](#). Thus, everyone who participates in wound assessment and management should be able to access appropriate education and skills to ensure competency and confidence [\[6\]](#).

It is very important to know that in spite of high costs; wound care practices remain a vital realm of nurses' clinical practice because nurses' knowledge and practices in managing wounds appropriately will reduce complications as well as ensure rapid wound healing [\[2\]](#).

Research has shown that there is a need for developing interventions to improve the use of evidence in wound care practice and also to obtain insights into clinical practices in wound management by [Dealey \[7\]](#), therefore this study aimed to identify nurses' knowledge and practices in wound management.

## 2. Method

### 2.1. Setting and Sample

A convenience sample of 19 nurses working in four wards, three medical wards and one surgical ward either in a full time or part time capacity was enrolled in this study. Clinical nurses, midwives, student nurses and enrolled nurses were the target population in this survey.

## 2.2. Instrument

Fixed response items such as demographic characteristics, educational background, wound characteristics, nature of the dressing materials and management of wound were used to gather information.

## 2.3. Ethical Approval

Bingham University Teaching Hospital Health Research Ethics Committee (No NHREC/ 21/05/2005/00237) granted the approval for the study.

## 2.4. Data Collection

Nurses in wound care wards were invited to complete a 25 -item survey through their ward areas. The survey was divided into two sections, the first section included seven questions on the demographic characteristics and educational background of the respondents while eighteen questions on wound characteristics, nature of dressing materials and wound management formed the second section. For the question, “what are the factors responsible for wound treatment failure?”, respondents’ knowledge of treatment failure was classified into the following categories: inadequate availability of dressing material (TFF1), knowledge gap (TFF2), lack of patient co-operation (TFF3), poor wound management plan (TFF4), other (TFF5). The questionnaire was piloted by four senior nurses who are heads of units, the surveys were anonymous, and returned after completion in a self-addressed envelope.

## 3. Data Analysis

Data were recorded on paper and transferred to SPSS statistical software (version 20.0) for subsequent analyses. Proportions quoted are based on valid responses to the relevant questions and all percentages and proportions quoted in this study refer to valid responses. Bivariate analysis was done with Chi-square test to compare proportions for variables. Results were considered to be statistically significant where  $P = 0.05$ .

## 4. Limitations

Despite low response rate, the data gathered were sufficient to draw some conclusions in relation to the aims of the study. We also acknowledge that the results may not be reflective of the practices of nurses at the hospital as a whole and finally actual nurses’ practices may not necessarily be reflected because the data reported are based on self-reported practices.

## 5. Results

**Table-1.** Nurse respondents characteristics

GENDER	VALID N (%)
Male	14 (73.7)
Female	5 (26.3)
AGE GROUP (YEARS)	
20-30	4 (21.1)
31-40	6 (31.6)
41-50	3 (15.8)
51-60	2 (10.6)
61-70	4 (21.1)
CLASSIFICATION	
Registered nurse	13 (68.4)
Registered midwife	7 (36.8)
Others	1 (5.3)
WORK AREA	
Male ward	7 (36.8)
Female ward	2 (10.6)
Surgical ward	4 (21.1)
Private ward	7 (36.8)
EMPLOYMENT STATUS	
Full-time	18 (94.7)
Part-time	1 (5.3)
LEVEL OF EDUCATION	
Certificate	4 (21.1)
Diploma	11 (57.9)
Degree	3 (15.8)
YEARS OF EXPERIENCE	
1-5	9 (47.4)
6-10	2 (10.6)
11-20	2 (10.6)
>20	6 (31.6)

**Tables 1;** Characteristics of nurses' respondents

A total of 19 nurses participated in the study. Out of the total sample, 73.7% were males while 26.3% were females. Nurse age groups ranged from 20 to 70 years. Majority of the nurses were in the age group of 31-40 years (31.6%). More than half of the nurses (68.4%) were registered nurses, 36.8% worked in male ward and 36.8% private ward, 94.7% were employed in a full-time capacity, 57.9% were diploma holders with 47.4% 1 to 5 years of experience. as shown in [Table 1](#).

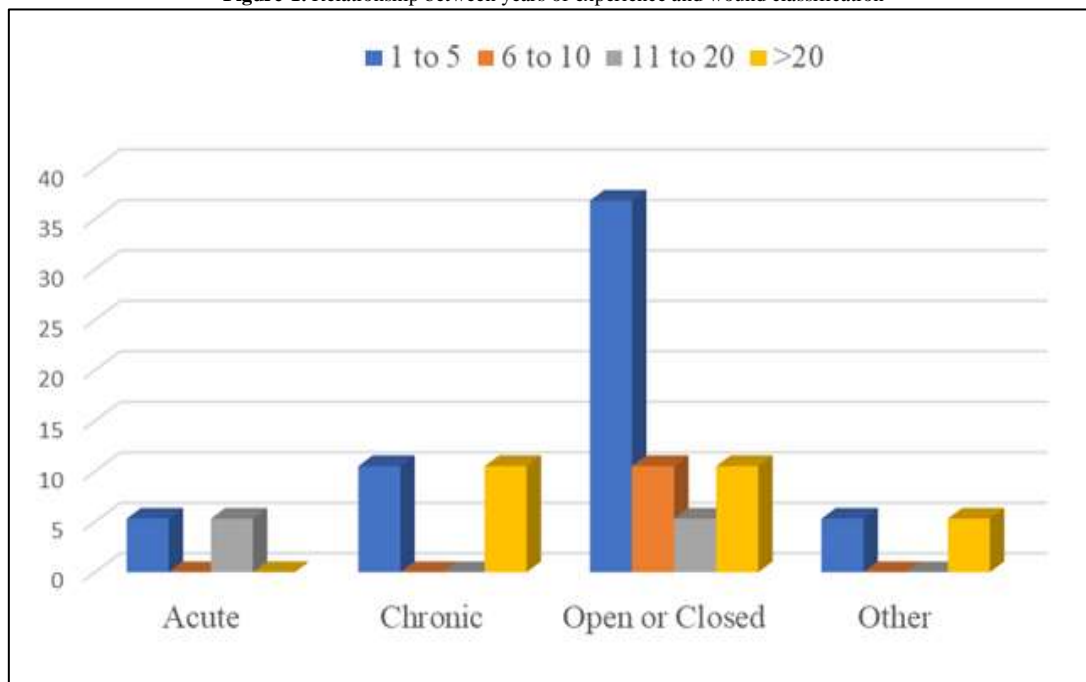
**Table-2.** Wound care practices

<b>WOUND TREATMENT</b>	<b>VALID N (%)</b>
Yes	16 (84.2)
No	3 (15.8)
<b>WOUND DRESSING FACTORS</b>	
Type of wound	13 (68.4)
The amount of exudates	2 (10.6)
Location of wound	3 (15.8)
Skin condition	2 (10.6)
Presence or absence of infection	3 (15.8)
Condition of the wound bed	4 (21.1)
Characteristics of dressing materials	0 (0)
Treatment goals	5 (26.3)
Cost of dressing materials	2 (10.6)
Training	0 (0)
<b>FREQUENCY OF DRESSING MATERIALS</b>	
Dressing coming off	1 (5.3)
Scheduled care change	11 (57.9)
Reaction to dressing	4 (21.1)
Patient expectation	1 (5.3)
Dressing saturated	3 (15.8)
Expected wear time	3 (15.8)
Other	2 (10.6)
<b>PREPARATION FOR DRESSING</b>	
Preparation of the patient	6 (31.6)
Preparation of oneself	3 (15.8)
Preparation of the environment	9 (47.4)
Preparation of the supplies	4 (21.1)
Collecting dressing materials	9 (47.4)
Introduction to the patients	5 (26.3)
Explanation of the procedure	3 (15.8)
The temperature of cleaning solution	2 (10.6)
Hand washing	5 (26.3)
Integrity	2 (10.6)
<b>AVAILABILITY OF EQUIPMENT</b>	
Yes	13 (68.4)
No	6 (31.6)
<b>PROVISION OF DRESSING MATERIALS</b>	
Patient	1 (5.3)
Hospital	18 (94.7)
External donations	1 (5.3)
Government	4 (21.1)
<b>TYPES OF DRESSING MATERIALS</b>	
Forceps	10 (52.6)
Gauze	16 (84.2)
Bandage	8 (42.1)
Plaster	6 (31.6)
Gloves	2 (10.6)
Other	13 (68.4)
<b>STERILIZATION OF DRESSING MATERIALS</b>	
Yes	16 (84.2)
No	
<b>DRUG ADMINISTRATION</b>	
Yes	13 (68.4)
No	6 (31.6)
<b>TYPE OF DRUGS</b>	
Antibiotics	17 (89.5)
Analgesics	10 (52.6)
Non-Steroidal anti-inflammatory drugs	1 (5.3)
<b>WOUND GUIDELINE</b>	
Yes	7 (36.8)
No	12 (63.2)

SUCCESS	
Very high	3 (15.8)
High	9 (47.4)
Moderate	3 (15.8)
Low	4 (21.1)

Table 2 indicates characteristic of wounds. Almost all the nurses (84.2%) were involved in the treatment of wounds. The major determinant factor for choosing dressing material is the type of wound (68.4%), the most commonly factor responsible for frequency of wound dressing change is coming off of dressing (57.9%), the most important preparation carry out for a dressing is the preparation of the environment (47.4%). 68.4% of the respondents answered Yes to adequate equipment, 94.7% responded that the hospital provided the dressing materials, gauze was the major dressing material used (84.2%), 84.2% answered Yes to the sterilization of dressing materials. 68.4% administered drugs, the most commonly used drug is antibiotics (89.5%). 36.8% complied with the guidelines and 47.4% rated the success of wound treatment to be high.

Figure-1. Relationship between years of experience and wound classification

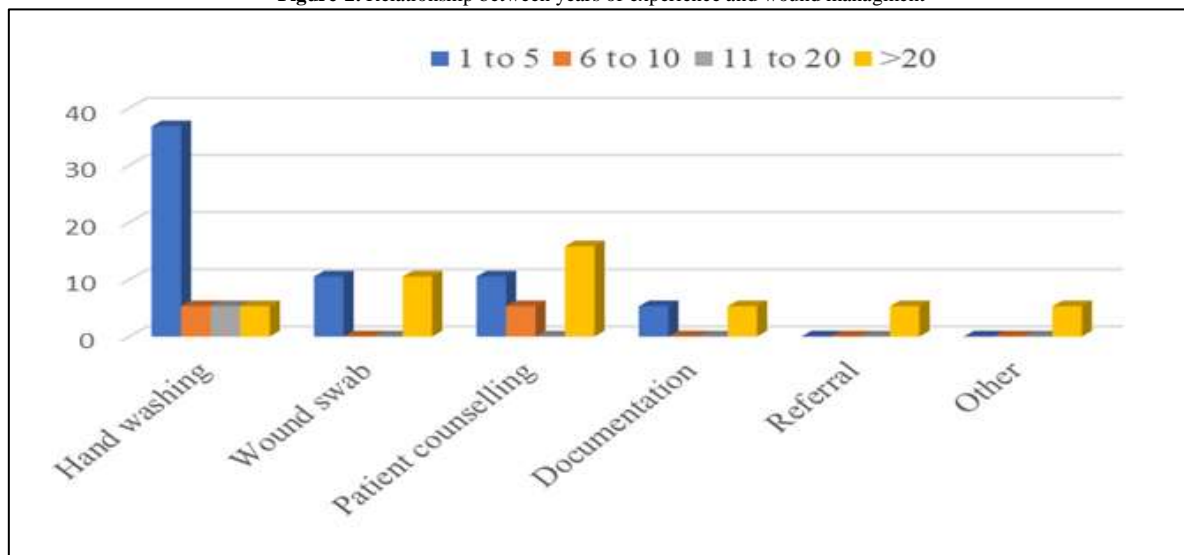


P=0.05, df =3, X2 =7.82 (Significant)

All the categorized nurses were included in the treatment of open, closed, clean, contaminated, infected (63.1%), there was a significant association between years of experience and wound classification as illustrated in figure 1.

Figure 2 indicated the relationship between years of experience and wound management. The major indicator for wound infection prevention and control practices for managing wound is hand washing (52.4%), a significant association was observed between years of experience and wound management.

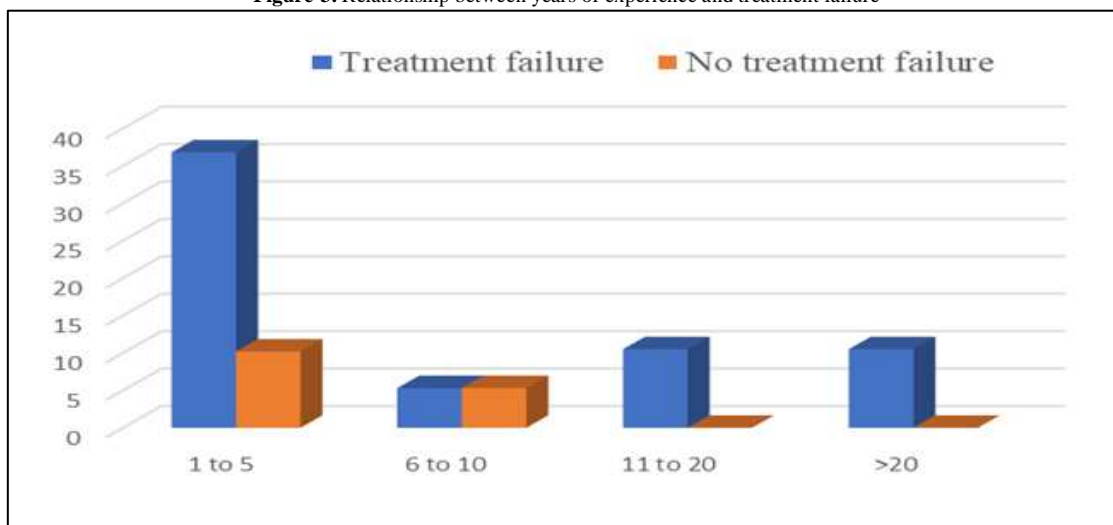
Figure-2. Relationship between years of experience and wound management



P=0.05, df =3, X2 =7.82 (Significant)

More than half of the nurses (63.1%) responded Yes to the question of have you ever encountered wound treatment failure, there was a significant association between years of experience and treatment failure as shown in figure 3.

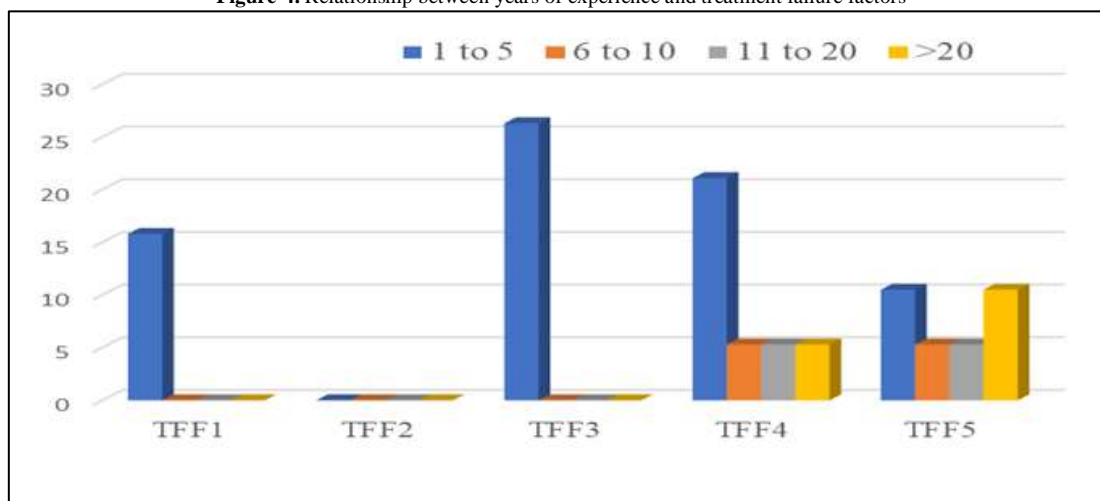
Figure-3. Relationship between years of experience and treatment failure



P=0.05, df=3, X<sup>2</sup>=7.80 (Significant)

Figure 4 shows the relationship between years of experience and treatment failure factors. 37.0% of the respondent attributed lack of poor wound management plan as the most serious factor responsible for treatment failure. The association between years of experience and treatment failure factors was significant.

Figure-4. Relationship between years of experience and treatment failure factors



P=0.05, df=3, X<sup>2</sup>=7.80 (Significant)

## 6. Discussion

This survey gives a description of nurses' knowledge and practices in wound care practices. It also tells us about the routine practices they used to prevent and control wounds. Sample participants represented a wide range of clinical practice areas within the health facility. They ranged from registered nurses, registered midwives, enrolled nurses and student nurses, majority had diploma, few were certified nurses and degree holders within the past 1 to 20 years.

Research has shown that there is need to increase workforce and specialist nurse practitioners for wound care practices to overcome the problem of nursing and clinical management [5]. This is necessary, because of lack of healthcare personnel in the future to care for the increasing population as the population of nurses is decreasing [6].

In this study both pre-registration nurses and post registration nurses responded according to their supposed importance similar to study conducted by Maylor [8]. Research has shown that hospitals where health professionals are available to manage the different types of conditions as may be presented by the patients are the main interventions to wounds by Builders and Builders [9]. It has also been noted that nurses made decisions about treatment plans in a majority of cases and were also involved in 75% or more of treatment plan decisions [6]. It has also been suggested that all nurses should undergo post-graduate training in wound care and infection control and prevention practices; they should enroll in wound care modules offered by the facility, attend seminars and/or

conferences on wound management and infection control [2]. This is also in support of a significant association between the years of experience and wound classification.

Assessment of the needs of the person and the current state of the wound and wound type are the determinant of choice of wound dressing [10, 11]. In this survey, majority of nurses liking their dressing choice based on wound type, this finding is in agreement with some studies in which sample of wound care nurses, indicated that type of wound was pivotal to informing the choice of dressing product. Using a holistic approach underpins effective and appropriate wound management, and is given much acceptance in clinical guidelines and other wound care literature [12-15].

Wound care is very labour intensive and high percentage of nursing time is spent on the provision of wound care with patients receiving an average of 2.4 dressing changes per week according to a research carried out by Clarke-Moloney, *et al.* [16]. Also, the frequency of changing of wound dressings vary from daily to twice weekly among the patients whose wounds required dressing [16]. In the context of this present study, the most commonly factor responsible for frequency of wound dressing change is coming off of dressing, this is in support with factors which include appropriate wound dressing, patient education related to wound care, appropriate environmental considerations, and clinical follow-up which are very essential for successful patient wound dressing [6, 11, 17]. The choice depends on various dressing features, for example, absorption capacity, adherence, occlusiveness, caregiver dependency, cost effectiveness, reimbursement issues, and experience with the product [11].

There are diverse of wound care products that flood the market each year and the rate of evolving technology in wound care products makes it difficult for nurses to maintain current knowledge of new developments [18]. It is worth noting that wound dressings are employed to absorb wound secretions, protect the wound from injury and protect against bacterial infection [2].

The best material for dressings is simple cotton gauze, only small amount is needed to lightly cover the wound. It is very vital to open the gauze completely to prevent unnecessary waste of supplies, therefore gauze was the major dressing material used [19]. Although there are many very good new wound care products available, but they are very expensive and not readily available throughout the world [19]. A non-adhesive (silicone or paraffin gauze) dressing is usually applied to secondarily healing wounds because they are most suitable in terms of wound healing time, infection risk, and pain [11, 19].

Wound care practices involve a number of measures including dressing and administration of painkillers, use of anti inflammatory agents, antimicrobial agents, and healing promoting drugs [20]. In our study, the major therapeutic agent used in the treatment of wound by the nurses was antibiotic, this is as a result of infection which is the major complication of wounds and antibiotics play an important role in the wound healing process and can delay the process by several mechanisms such as decreasing blood supply, promoting disordered leukocyte function, prolonging inflammatory and debridement phases and producing proteolytic enzymes [21]. Systemic antibiotics are essential for the management of clinically infected wounds and the choice is dependent on the consideration of patient characteristics, the results of microbiological investigations and the identification of both the nature and location of the wound, as well as the identification of most appropriate antibiotic [22, 23].

Sterile technique uses instruments and supplies that have been specifically treated so that no microorganisms are present on their surfaces. Examples are autoclaved instruments use in the operating room or gauze/gloves individually packaged [19]. This technique is employed by the majority of the nurses. In this survey, less than half of the participant complied with the clinical guidelines. The guidelines are very important because of the existence of a large, undesirable variation in care, the large number of care professionals involved, wound care products available, and patients in different settings [11, 24-26].

Research has shown that nurse practitioners usually treat wound based on management decisions regarding the infected wound [2], wound care information from hospitals wound care specialist nurses [26]. However, implementation of wound care guidelines may help achieve a more uniform policy to treat acute wounds in all settings and an improved effectiveness and quality of wound care [11, 24-26].

Majority of the nurse practitioners were involved in basic wound care practices such as treating open, closed, clean, contaminated and infected wounds. A good understanding of basic wound care principles will help your patient's wounds to heal as quickly as possible with the best outcome [19]. Survey on wound in patients had identified significant factors such as wound recurrence, quality of treatment for wound care, maintenance of independent living, personal interactions with doctors and healthcare professionals, living a normal life, and receiving appropriate skilled care for their non-healing wound [20], this explains the significant association between the wound classification and years of experience.

Hand washing is the best practice in both wound infection prevention and wound management, in this study [27], more than half of the nurses used hand washing as an indicator for infection prevention and control practices. This is similar to survey conducted by Bloomfield, *et al.* [27] in which more than half of respondents used hand wash as the major indicator for wound management. Hand washing remains a significant problem within the clinical setting, the primary contributors to infection hospital setting are contaminated hands and failure to practice hand hygiene healthcare settings [28].

Many countries including US, Europe and Australia have published clinical guidelines, standards and position statements relating to wound care practices. Each recommendation is based on existing scientific data, a theoretical rationale, and contextual application, recommendations comprises all aspects of clinical practice, from hand washing practices, antimicrobial prophylaxis for wound infection and control [12, 15, 29, 30].

Wound treatment is a component of wound care. Wound treatment encompasses all activities or procedures that will promote the healing wounds, preventing infections, and getting rid of an already existent infection [17]. In

addition to this, wound care standards focus on the importance of clinical decision making in assessment and planning, accurate documentation, using a multidisciplinary approach to wound care, and wound care education and research because good wound care practice requires a sound knowledge base [12, 15, 17], therefore the association between years of experience and treatment failure is significant.

In this survey poor wound management plan was the major factor responsible for treatment failure because nursing success in wound management include possession of relevant knowledge and a systematic understanding of the process of healing which naturally leads to the development of good wound management plan [5]. Kingsley in 2001 suggested that the management and treatment of wound are complex and important area in nursing [31], however the limitations of knowledge as well as cutting edge technological innovations in wound management will adversely affect factors responsible for treatment [5]. In addition to these are factors affecting the repair and management of wounds as well as maintenance of skin integrity and general nursing needs in wound management [32]. Thus, there is a significant association between the years of experience and treatment failure factors.

## 7. Conclusion

The nurse practitioners have good knowledge of wound care practices, however there is a need for implementation of clinical guidelines and also to increase workforce and specialist nurse practitioners to ensure that wound is managed effectively and that patients, their families and healthcare providers understand how to promote skin integrity.

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