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ABSTRACT

Background: **Wounds are a significant burden in Kenya, with limited knowledge on their prevalence and management. Timely care for acute wounds, including debridement and dressing, is essential, to prevent their development into chronic wounds. Managing chronic wounds is more expensive but follows a similar approach, guided by the DIME principle.**

Objective: **To assess knowledge of healthcare workers engaged in wound management regarding various wound care options and to gauge their satisfaction levels with the existing wound care services offered across different facilities.**

Design: **A multicenter cross-sectional survey was carried out over a period of 2 weeks.**

Setting: **Selected regional hospitals in Kenya. Healthcare providers across the select hospitals completed a wound care study questionnaire.**

Subjects/Participants: **Healthcare practitioners involved in wound care in all cadres from nursing students, nurses, clinical officers, medical officers, surgical residents and others.**

Results: **One hundred and twenty three (123) healthcare practitioners, mainly nurses (82.2%), participated. Most were aged 20-30 and 31-40 (41% and 39% respectively). Females represented 67% of respondents. A significant majority lacked familiarity with modern wound care practices like maggot therapy (88.3%) and vacuum-assisted closure (VAC) dressings (60.4%). Overall, high satisfaction was reported with the multidisciplinary team (73.8%), wound care supplies (59.4%), and preventive practices (62.4% for complications and 66.4% for infections).**

Conclusion: **Our study revealed deficiencies in wound care training, with over half lacking specialized training, also reflected in even more healthcare workers lacking knowledge on modern wound care practices. However, most practitioners display above-average basic understanding, which can be built on with provision of specialized training.**

*Key words: A***cute wounds, Chronic wounds, Wound care**

INTRODUCTION

Wounds impose a significant and often underappreciated burden to the healthcare system and the society as a whole (1). The wound burden in Kenya is heavy, and the epidemiological pattern points to majority of the wounds being acute, caused by trauma (38.6%), most of which were being managed as inpatients (68%) (2), which translates to a higher economic burden. To the individual, living with a wound can have a detrimental multifaceted effect on psychological, social, and overall well-being (3). In their treatment, knowledge on the prevalence, common types and management strategies is

necessary. There is however a dearth of knowledge on the same in our setting.

Wound care is a common procedure in Kenyan healthcare facilities, and timely management of acute wounds is crucial for proper healing. Poor management of acute wounds often leads to them becoming chronic wounds. Managing chronic wounds effectively is intricate, and to optimize patient outcomes, it's advised that individuals engaged in their care possess the requisite knowledge and expertise. The approach to managing chronic wounds is somewhat similar to that of acute wounds, with a focus on identifying the underlying cause in addition to use of advanced and modern wound care strategies. The DIME principle (Debridement, Infection and Inflammation control, Moisture balance, and Edge preparation) guides their management (4).

Various factors, including healthcare workers' knowledge and practices, hospital management systems, and patient factors like BMI, metabolic health, and financial situations, can influence wound healing(5,6). Data on these factors is limited in our context, but it's crucial for policy and planning, given the increasing elderly population and the prevalence of lifestyle diseases, which suggest a growing healthcare burden (7). The satisfaction of healthcare workers on wound care is crucial as they are the point people managing these conditions. A satisfied workforce will translate in better outcomes for both acute and chronic wounds(7). This study therefore aimed to find out knowledge on advanced wound care management among various healthcare providers.

MATERIALS AND METHODS

Study Design: A multicenter, cross sectional survey was carried out over a period of 2 weeks.

Study Setting: Six regional referral hospitals across the Republic of Kenya.

Study Subjects/Participants: A questionnaire was administered to healthcare practitioners involved in wound care in all cadres from nursing students, nurses, clinical officers, medical officers, surgical residents and others.

Data Sampling: For each of the 7 assessment questions, 1 point was assigned for a correct response and no point for an incorrect response. The maximum possible score was 7 points and the minimum score was 0 points; the total score for each practitioner was expressed as a percentage.

Data Collection: To reduce bias and inter-examiner variability, 2 groups of research volunteers, each comprising 2 medical students were sought for the study. Prior to data collection, they were supervised by an official of the Wound Care Society of Kenya; WCSK for a day, before commencement of the data collection.

Data Analysis: Data from the questionnaires was coded and input into SPSS (IBM version 21). Means, modes and medians were calculated. Student T test was used to analyze gender differences on the prevalence, types of wounds as well as management. Further, one way ANOVA was used to analyze hospital differences on the same variables. Analyzed data were presented in figures and tables.

ETHICAL CONSIDERATION

Ethical approval was obtained from the Kenyatta National Hospital /University of Nairobi Ethics and Research committee. An informed consent was also sought from all participants. Information obtained from the study was treated with confidentiality and only for purposes related to the study.

RESULTS

A total of 123 healthcare practitioners participated, with the majority being nurses (82.2%) and smaller percentages represented by surgical residents (7.9%), nursing students (5%), clinical officers (5%), and medical officers (2%). The average age of the participants was 34.76, with most falling into the 20-30 years and 31-40 years age groups (41% and 39% respectively). Females comprised 67% of the respondents, and males made up 31%.

Table 1: Demographic characteristics of practitioners

Variables		Count (n=143)	%
Cadre	Nurse	83	82.2%
	Resident	8	7.9%
	Nursing student	5	5.0%
	Clinical officer	3	3.0%
	Medical officer	2	2.0%

Age groups	20-30 years	41	41.0%
	31-40 years	39	39.0%
	41-50 years	10	10.0%
	Above 50 years	9	9.0%
	Below 20 years	1	1.0%
Gender	Female	69	67.0%
	Male	32	31.1%
	Prefer not to say	2	1.9%

Table 2: Knowledge of modern wound care techniques

Technique			%
Maggot Therapy	Has experience	11	11.7%
	No experience	83	88.3%
VAC Dressing	Has experience	38	39.6%
	No experience	58	60.4%
Compression Dressings	Has experience	61	62.9%
	No experience	36	37.1%

Practitioners had varying experiences with wound dressing techniques: 62.9% were skilled in compression dressings, but lacked experience in maggot therapy (88.3%) and vacuum-assisted closure (VAC) dressings (60.4%). Basic hygiene satisfaction varied: 48.6% were satisfied, 15.9% dissatisfied, and 35.6% neutral.

A detailed overview of specific wound care services provided in facilities is outlined in table 4 below.

Satisfaction with wound care services provided in facilities

Practitioners generally expressed satisfaction with wound care services: 73.8% were satisfied with the multidisciplinary team, 59.4% with supplies, 52.5% with mobility aids, 62% with equipment, 73% with competencies, 62.4% with practices to prevent complications, and 66.4% with practices to prevent infections.

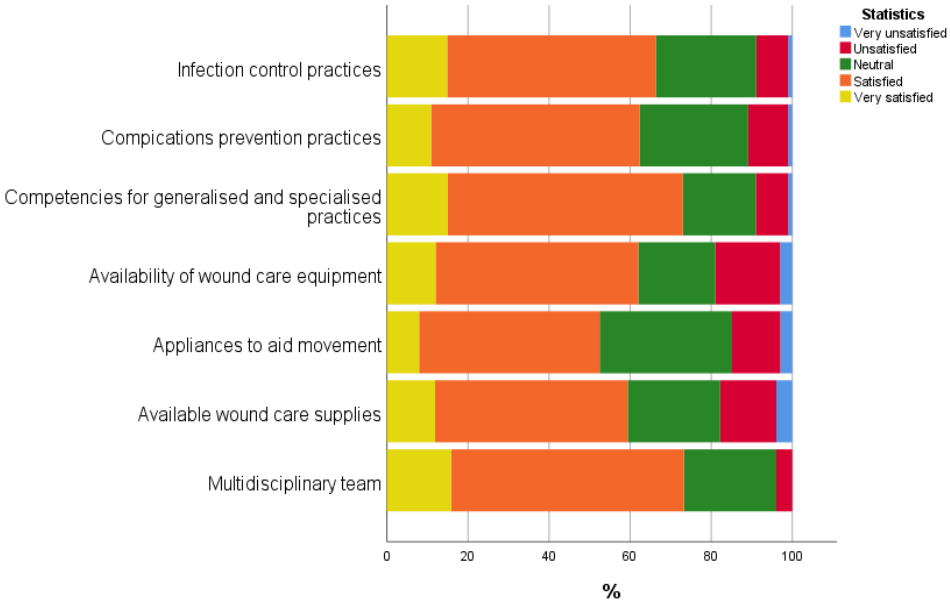

Figure 1: Practitioners' Satisfaction with Wound Care Services

DISCUSSION

The state of wound care practices, knowledge and the perspectives of healthcare practitioners towards wound care in Kenya have largely been unstudied. This study was conducted to evaluate the healthcare practitioners' understanding of wound care practices and their satisfaction with the same. A semi-systematic review conducted by Welsh et al 2018 looking at wound care evidence, knowledge and education amongst nurses found a clear deficit in knowledge in a number of areas pertaining to wound care (e.g. pressure ulcer grading, awareness of clinical guidelines/protocols, dressing selection etc.)(8).

Similarly, a study in Lagos Nigeria by Oseni *et al* found that majority of the participants in their study were deficient in knowledge and practice of wound assessment tools and documentation (9). Our study demonstrated similar findings, with a majority of the respondents having little to no experience/knowledge of some of the modern wound care practices such as maggot therapy (88.3%), vacuum assisted closure VAC (60.4%) .

More than half of the practitioners had no specialized training in offering wound care beyond the training received in the course of the medical curriculum training.

The centers selected for the study were also involved in training of these healthcare providers and these findings highlight the need to incorporate specialized training programs in the curriculums(10). McCluskey et al found that a large number of nurses rated their competence in relation to wound assessment on the lower end of the scale but they noted significant enhancement once they updated their knowledge(11). Tegegne et al in a study in Ethiopia found that knowledge and practice on wound care were determined by education and training, among other factors(12), these findings were also demonstrated by Ferreira *et al* in their study, citing that training was needed to improve of nurses' knowledge(10)

The knowledge scores varied between cadres with medical officers and residents demonstrating a better understanding of wound care than nurses. This observation may be attributed to the different levels of training; most nurses sampled cited a diploma as their highest level of training while residents are at the post-graduate level.

Overall, the health practitioners reported facilities across the country provided a favorable environment for provision of wound care services and practitioners were satisfied with the wound care services provided in their facilities of practice. The practitioners affirmed the availability of wound care supplies and appliances to aid in movement; their availability was satisfactory to aid efficient delivery of services.

CONCLUSION

In conclusion, the study demonstrated that there was a knowledge gap in healthcare providers regarding advanced and modern wound management practices, which can be attributed in part to the lack of specialized wound care training.

However, despite the absence of specific wound care training, most practitioners exhibited above-average basic knowledge of wound care procedures, which could serve as a starting point for enhancing their wound care skills. The majority of practitioners expressed satisfaction with the available wound care services. However, this satisfaction can be further improved by equipping healthcare workers with the necessary specialized knowledge.

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