American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)
ISSN (Print) 2313-4410, ISSN (Online) 2313-4402

http://asrjetsjournal.org/

# Nurses` Perception Regarding Diabetic Wound Care at Primary Health Care Level

Siham Ahmed Balla[a*], Sulaf Ibrahim Abdelaziz[b], Kamil Mirghani Ali Shaaban[c], Haiedr Abu Ahmed Mohamed[d], Mohamed Ali Awadelkareem[e], Asia Abdullah Belal[f]

[a,c,d,e,f]*Department of Community Medicine, Faculty of Medicine, University of Khartoum. Khartoum , Sudan. Postcode: 11111*

[b]*Department of Medicine, Faculty of Medicine, University of Khartoum, Khartoum, Sudan. Postcode: 11111*

[a]*Email: sihammusa@gmail.com, somaballa.10@uofk.edu*

[b]*Email: example@yahoo.com*

**Abstract**

One of the challenges regarding quality of care at primary care level is diabetic wound services; where the nurses are the pillar in wound care. The study objective was to determine the perception of nurses regarding the diabetic wound services in the health centers. A descriptive qualitative study carried in Khartoum State Sudan targeted nurses at the health centers. Focus Group Discussion (FGD) was carried out using semi-structured open ended questions. Saturation of information was obtained after four FGD sessions resulted in 26 nurses. Informed consent was signed and obtained from each nurse. Two independent qualified researchers carried out content analysis of the recorded information. The results show that female to male ratio was 2:1. Most of nurses were holders of Technical Nursing Certificate. Almost all nurses have not received in-service training about diabetes and diabetic wound care. Factors affecting diabetic wound services were lack of guidelines for services and follow-up registry, insufficient consumables and dressing materials and negative patients` attitudes. In-service training on diabetic wound care was absent. Guidelines and follow up registry for diabetic wound care were not available at the health centers. Health centers were lacking sufficient dressing and surgical materials. Strengthening the capacity of nurses and availing adequate resources and services` guidelines are recommended.

***Keywords:*** diabetic wound; nurses; health centers; training.

---

* Corresponding author.

## 1. Introduction

Diabetic and foot wounds among diabetic patients are the serious and the most costly complications of diabetes. Health setting organizations require pre-determined comprehensive guidelines including diabetes education for screening and management of foot care [1]. However; at both primary and secondary levels of care, the trained nurse is needed. An international consensus emerged focusing on team services for prevention and management of diabetes and diabetic foot, one of the most important member is the trained nurse [1].

Diabetic wound services are showing challenges regarding quality of care at primary care level; where the nurses are the pillar in health services [2]. Nurses have a major role in early detection and prevention of diabetes and its complications. Approximately; 60 to 70% of the diabetic patients need to be screened by nurses annually and 6% quarterly [3]. The nurse having the role of evaluation of the wound, devoted to provision of wound care and provides knowledge and behaviour change to the patients. The nurse is the cornerstone of the health team in the presence of adequate resources and guidelines [3-5].

The role of nurses is far beyond dressing wounds. They could actively participate in the design of educational programs for wound prevention and foot care in particular [6].

As far as nurses are the core care provider in wound dressing in Sudan, the aim of the study was to determine their perception regarding the diabetic wound services at primary care level in the health centers.

## 2. Material and Methods

This study was a qualitative study carried out in the health centers in Khartoum State Ministry of Health. The study population was nurses employed in the health centers regardless of working duration. An invitation letters were issued from Khartoum State Ministry of Health to the directors of the health centers. The invitation targeted the nurses working at primary health care level in the health centers. Nurses were consented for Focus Group Discussion (FGD) for data collection. FGD was guided by an interview sheet composed of semi-structured open ended questions. The questions covered general information about the nurses, in-service training, diabetic wound care services at the health centers and related factors [Table1].

The discussion was carried out by qualified moderator and a note taker. The time for discussion was 60- 90 minutes for each FGD session.

Saturation of information was obtained after four FGD sessions resulted in 26 nurses (6-7 per each group). At the end of the data collection, the nurses were motivated by an invitation to attend a diabetes education workshop.

The authors obtained the ethical clearance from ethical committees in Ministry of Health of Khartoum State and Faculty of Medicine - University of Khartoum. The objective of the study, benefits, risks and confidentiality of data were explained to the nurses and an informed consent was signed by each nurse before the discussion.

Content analysis was carried out by two qualified researchers independently. The result of the themes was compiled and revised by the authors. It was grouped according to: Resources for wound services, the competency of nurses in management of diabetic wounds, and the perception of the nurses about the factors associated with wound care services at health centers.

***2.1.***

**Table 1:** Semi-structured Questions

| | |
|---|---|
| Qualifications and training | Let us know about:<br><br>Your basic qualifications?<br><br>The duration of working in the health centers?<br><br>The training rounds you attended regarding diabetes disease in general?<br><br>The training courses you attended regarding nursing of diabetic wounds? |
| Nursing of diabetic wounds and constraints | Describe the care available for diabetic wound management in the health centers?<br><br>Describe your role in wound care for diabetic patients in the health centers?<br><br>What are the factors affecting diabetes wounds management in the health centers? |

**3. Results**

Female to male ratio of the nurses was 2:1. The age of the nurses ranged between 26-44 years. Twenty four nurses were holders of Sudanese Secondary School Education Certificate. Thereafter; they were trained on nursing science for three years inside the hospitals` nursing schools and obtained Technical Nursing Certificate. Two nurses were holders of Bachelor of Nursing Science Certificates (BSc Nursing) that was issued form Ministry of Higher Education and Scientific Research in Sudan [Table2].

The working duration of the study nurses ranged from 3-36 years. The number of nurses working in Governmental and Non-governmental health centers was 12 and 14 respectively [Table 2].

***3.1.***

**Table 2:** General characteristics of nurses (n=26)

| Profile of the nurses | | |
|---|---|---|
| **Sex** | Nine Males - 17 Females | |
| **Age range** | 26-44 years | |
| **Qualifications** | Technical Nursing Certificate | 24 nurses |
| | Higher Education Qualifications (BSc in nursing sciences) | 2 nurses |
| **Working duration range** | 3-36 years | |
| **Types of health centres** | Governmental Health Centers | 12 nurses |
| | Non-governmental Health Centers | 14 nurses |

### *3.2. Resources for diabetes wound care at the health centers*

Considering the continuous professional development for nurses, almost all nurses have not received any training on diabetes and diabetic wound management. All nurses in governmental and non- governmental health centers addressed the problem of absent guidelines for wound management and follow up registry. Regarding dressing materials, most of nurses from governmental health centers reflected unsustainable supply. Some stated that: "Often the supply of gauze is interrupted and the patients have to obtain the gauze by themselves." The nurses in the non-governmental health centers acknowledged the continuous supply of the dressing materials and consumables stating that: "There are well equipped dressing rooms in the centers including dressing solutions and consumables materials."

### *3.3. Competency of nurses in management of diabetic wounds*

Most of nurses managed diabetic wound based on their knowledge and skills derived from basic training. Most have different stories reflected their potentials and competency regarding diabetes wounds management. Thirty one year old nurse said: "I have one patient with large diabetic abscess at his hand; it produced bloody pus with nasty odour. The doctor decided to amputate one finger, but I insisted to continue proper daily dressing and insulin injections. The wound healed and I think this is a good management even in severe wound infection." Another male nurse stated that: "The doctor referred one patient with a wound at his big toe. I did the daily dressing but after three days I noticed that the progress of wound healing is very slow. I asked the patient to do random sugar and it was found to be very high."

### *3.4. Factors affecting diabetes wound care at health centers*

Most of nurses said that lack of consumables for wound dressing is the most important factor affecting wound healing progress. Some nurses said that the system gave an instruction to use one meter of gauze for dressing of

10 patients. They reflected that: "Lack of consumables and dressing materials resulted in low attendance rate in the health centers. Most of patients move to any health center with adequate dressing services." "The supply manager gave an order to use one meter of gauze for ten patients regardless of the size and the depth of the wound, this is not realistic."

Another factor affected the wound care at the health centers is the fees for dressing services. Most of nurses felt that the patients could not afford to purchase gauze and pay for dressing. Some nurses used to help the patients by doing dressing every other day and so that not to lose follow up of the patients. Most of nurses acknowledged the health insurance system that provides free services for diabetic wound management. They stated: "The fee for dressing any wound is 10 Sudanese pounds per session. This is not affordable for some patients. I schedule the dressing to be every other day, although this affects wound healing but it maintains follow up." One nurse from governmental health center said: "Patients having health insurance card do their wound dressing for free. Those patients without the umbrella of health insurance suffer from the dressing costs."

Most of the nurses agreed on patients` attitude as a factor affecting diabetic wound healing. Twenty six years old nurse said: "I have one patient came for dressing of amputated finger stump, he came for two days and then came after one week with very bad wound at the second finger. At that time the doctor decided to amputate his second finger."

**4. Discussion**

Although the maximum duration of work of nurses in the health centres was 36 years but all of them have not received in-service training on diabetes in general and management of diabetic wound as well. Lack of continuous professional development contributes to poor quality of nurses' clinical performance. The training of nurses on diabetes foot care is not effectively considered [6]. One of the key elements for plans of primary health care services is the strengthening of nursing skills. Continuous training lowers negative attitude of diabetic patients and increases the access to primary care [6].

Most of the nurses agreed on the absence of guidelines for wound management and the lack of follow-up records for monitoring the wound progress. However; nurses in Sudan adequately provided wound care based on the basic knowledge and skills during pre-service training. They have the skills to look after the blood glucose level of the patients; carried wound debridement, advice for appropriate antibiotic and good nutrition [7]. The presence of structured wound care guidelines through algorithm flow chart reduces major amputation rates significantly by three quarters in comparison with standard care [8]. Another guideline of wound care is a checklist including factors relevant to healing that easily carried out by nurse [9].

The majority of nurses highlighted a deficiency of dressing materials and surgical instruments. It looks that the primary care level is not well equipped to confront the epidemic of diabetes. Continuity of care for diabetic wounds is challenged by limited health system resources [9]. The strategies of diabetic wound services should mainstream all components of care to enhance the accessibility to primary care, change negative behaviour of the population, and avail adequate health care resources composed of trained nurses, consumables and standard

guidelines for screening and case management [9]. Most of nurses were dissatisfied because of the poor supply of dressing materials and the inability of the patients to purchase the dressing materials e.g. gauze. The nurses acknowledged the health insurance system that reduces the burden on the patients` responsibility to pay for wound care which is the most expensive care in developing countries [10].

Lack of continuous supply of dressing material at primary level and the cost of services affect the patients' attitude and increase the non-compliance [11]. The continuity of care is a sharing mechanism between the nurse and the patient to achieve sufficient compliance [11]. Professional nurse are needed at primary care level to maintain efficient use of limited resources and improve the population health and empower the patients` centeredness [12].

## 5. Conclusion

In-service training on diabetic wound care was absent. Guidelines and follow up registry for diabetic wound care were not available at the health centers. Health centers were lacking sufficient dressing and surgical materials. Strengthening the capacity of nurses and availing services guidelines are recommended.

## References

[1]. Bakker K., Apelqvist J., Schaper N. C. Practical guidelines on the management and prevention of the diabetic foot 2011. Diabetes Metab Res Rev, 28(1): 225–231. 2012 DOI: 10.1002/dmrr.2253

[2]. Cowman S, Gethin G, Clarke E, Moore Z, Craig G, Jordan O'Brien J, et al. An international e Delphi study identifying the research and education priorities in wound management and tissue repair. Journal of clinical nursing, 21(3-4):344-53. 2012

[3]. El-Sayed ZM., Hassanein S. Diabetic Foot Screening for Ulcer Detection: Suggested Customized Nursing Guideline at a University Hospital-Egypt. Egyptian Journal of Nursing, 10(1). 2015 Available from URL: file:///C:/Users/Toshiba/Downloads/4322-8472-1-SM%20(2).pdf.

[4]. Chalya PL., Mabula JB., Dass RM, Kabangila R., Jaka H, Mchembe MD., et al. Surgical management of Diabetic foot ulcers: A Tanzanian university teaching hospital experience. BMC Research Notes, 4(1):365. 2011 Available from URL: http://bmcresnotes.biomedcentral.com/articles/10.1186/1756-0500-4-365.

[5]. Kurniawan T., Petpichetchian W. Case Study: Evidence-Based Interventions Enhancing Diabetic Foot Care Behaviors among Hospitalized DM Patients. Nurse Media Journal of Nursing, 1(1):43-59. 2011

[6]. Aalaa M, Malazy OT, Sanjari M, Peimani M, Mohajeri-Tehrani M. Nurses' role in diabetic foot prevention and care; a review. Journal of Diabetes & Metabolic Disorders, 11(24):1-6. 2012. Available from URL: http://www.jdmdonline.com/content/11/1/24

[7]. Barshes NR, Sigireddi M, Wrobel JS, Mahankali A, Robbins JM, Kougias P, et al. The system of care for the diabetic foot: objectives, outcomes, and opportunities. Diabetic foot & ankle, 4: 21847. 2013. Available from URL: http://dx.doi.org/10.3402/dfa.v4i0.21847

[8]. Weck M, Slesaczeck T, Paetzold H, Muench D, Nanning T, Von Gagern G, et al. Structured health care for subjects with diabetic foot ulcers results in a reduction of major amputation rates. Cardiovascular diabetology, 12 :45. 2013. DOI: 10.1186/1475-2840-12-45

[9]. Martínez-De Jesús FR. A checklist system to score healing progress of diabetic foot ulcers. The international journal of lower extremity wounds, 9(2):74-83. 2010

[10] Cavanagh P., Attinger C., Abbas Z., Bal A., Rojas N., Rong Xu Z. Cost of treating diabetic foot ulcers in five different countries. Diabetes Metab Res Rev, 28(1): 107–111. 2012

[11] Green J, Jester R, McKinley R, Pooler A. Patient perspectives of their leg ulcer journey. J Wound care, 22(2):58-66. 2013

[12] Edwards H, Finlayson K, Courtney M, Graves N, Gibb M, Parker C. Health service pathways for patients with chronic leg ulcers: identifying effective pathways for facilitation of evidence based wound care. BMC Health Services Research, 13:86. 2013. DOI: 10.1186/1472-6963-13-86