

CLINICAL NURSES' KNOWLEDGE AND PERCEPTION OF MODERN WOUND DRESSING IN A TEACHING HOSPITAL IN NIGERIA

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ABSTRACT

The use of modern wound dressing (MWD) techniques has been found to promote wound healing faster than traditional wound dressing techniques. This study was conducted to assess clinical nurses' knowledge and perception of MWD, and to identify the influence of knowledge on the perception of the nurses as well as the influence of socio-demographic variables on their knowledge. The perceived



factors of nurses that hinder the implementation of MWD in the study setting were also identified. The study adopted a cross-sectional descriptive design. Data were collected from 183 nurses, using a self-developed questionnaire with Cronbach's alpha of 0.85. Results showed that a high percentage had poor knowledge (60.1%) and a positive perception of MWD (80.9%). The knowledge of the nurses did not influence their perception significantly – none of the socio-demographic variables tested significantly influenced their knowledge ($p \geq 0.05$). The factor most commonly reported as hindering the implementation of MWD techniques was 'non-availability of MWD materials' (34.3%). It is recommended that hospital managers organise intensive training programmes for clinical nurses as an ongoing component of the staff development processes to improve their knowledge of MWD. There should also be an adequate supply of MWD materials for the effective implementation of MWD techniques and the improved health of patients.

Keywords: clinical nurses, implementation, knowledge, modern wound dressing, perception

INTRODUCTION AND BACKGROUND INFORMATION

Wound care evolution started when researchers and scientists questioned the complications of antiseptic, disinfectant and gauze dressing. In 1960 Winter (1960:293) tested the efficacy of wet polymer wound dressing to disprove the widely accepted practice of keeping a wound dry to prevent infection. Winter demonstrated that wounds that are kept moist heal faster than those exposed to the air or covered with traditional dressing, and this brought about the concept of modern wound dressing. In the 20th century came the advent of modern wound healing and currently there are more than 5 000 wound care products (Shah, 2011:65). Wound dressing has generally been classified according to the type of materials from which they are produced, traditional and modern dressings (Boateng, Mathew & Howard, 2008:2892), and the level of contact with the wound – primary, secondary and island dressing (Falabella, 2006:317). Traditional wound dressings (TWD) include the use of cotton wool and natural or synthetic bandages that are dry and do not provide a moist wound environment but rather allow for the evaporation of moisture from the wound (Boateng, Mathew & Howard, 2008:2892).

Modern wound dressing technology has been developed as an improvement on traditional wound healing agents. It is based on the principle of creating and maintaining a moist wound environment. The classification of MWD has been based on the materials from which they are produced including hydrocolloids, alginates, hydrogels, and foams; and they come in different shapes and sizes and are more resistant to environmental inhibitors and foreign particles (Boateng, Mathew & Howard, 2008:2892).

The literature is well documented in evidence of the importance of MWD techniques. For example, Kahl (1999:215) has found that composite dressings (Tagederm plus

absorbent pad) reduce the incidence of peri-wound blisters and it takes less time to put on the dressings, thereby reducing dressing costs. The study of Kahl further documented that composite dressings (3M) used for post-operative wounds are more comfortable for patients who are allowed more freedom since they can take a bath without having to worry wetting the dressings. This was not the case with traditional gauze dressing. Similarly, Alginate dressings have the ability to form a gel when it gets into contact with wound exudates (Adkins, 2013: 259) and the hydrophilic gel that is formed limits wound secretion and minimises bacterial contamination of the wound (Boateng, Mathew & Howard, 2008:2892). The presence of Calcium ions in alginate dressings also aids the wound healing process in that fibroblasts are produced. Generally, other studies (Valasco 2011:780; Triller; Huljev & Smirke, 2012: 65; Drunk & Taylor, 2009; Harding, Morris & Patel, 2002:160) have reported MWD to be more effective in wound care management since it provides the moisture that is needed for epithelial cells to migrate to the wound site. MWD provides more comfort, is cost effective for the clients, and it is ease to apply.

Nurses should be knowledgeable when applying MWD when dressing a specific wound (Triller, Huljev & Smirke 2012:65). According to Fourie (2013: 24) and King (2000:341), most health practitioners received little or no training in the care and management of wounds. Similarly, Cowan and Stechmiller (2009:567) found that there is a great lack of knowledge among health care professionals regarding wet to dry dressing, and modern wound modalities. This report is corroborated by Challarambus and Challarambus (2013:10) who reported that younger nurses (between 20–30 years) had better knowledge of MWD than the older nurses. Nonetheless, the nurses' confidence in their ability to undertake appropriate wound management has been reported to be affected by their knowledge and this knowledge has been associated with the practice of MWD (Vowden & Vowden, 2003:4). Conversely, in the study by Mccluskey and Geraldine (2012:37) on nurses' knowledge and competence in wound assessment and management, findings showed that nurses had very good knowledge of the parameters of wound assessment. They also found that there was a statistically significant correlation between knowledge and wound assessment competence of those nurses who had updated their wound care knowledge in the previous two years.

The lack of basic wound management knowledge can lead to wound mismanagement, resulting in unnecessary costs and the drainage of health care resources (Bedell & Bradly, 2003:397; Glover, 2001:247). Despite the poor understanding of the concept of moist wound management, Benbow (2008:4) reiterated that moist wound care remains a gold standard in wound management. Clinicians have also accepted the concept of moist wound healing and moisture balance dressing in wound management, but wet-to-dry gauze remains a popular dressing with healthcare providers (Shah, 2011:65). However, the knowledge that nurses have about MWD could also influence their perception of its use (Challarambus & Challarambus, 2013:10), consequently promoting or deterring the effective use of MWD materials.

STATEMENT OF THE PROBLEM

In Nigeria, various hospital administrators and managers made frantic efforts to introduce modern wound dressing techniques to wound care in various hospitals. A series of workshops and seminars was conducted by nurses to improve their knowledge of MWD and to incorporate the concept into nursing practice. Specifically, nurses in the study setting – a teaching and a tertiary hospital – had been trained in MWD techniques on many occasions but it is evident that they are still using traditional methods of wound care. The extent to which they are knowledgeable about modern wound dressing, their perception of the concept and factors militating against their use of modern wound dressing technique are scarce in the literature.

PURPOSE OF THE STUDY

This study was conducted to assess the knowledge and perception of modern wound dressing by clinical nurses in a teaching hospital in Nigeria. The influence of knowledge on the perception of the nurses, the influence of socio-demographic variables on their knowledge and perceived factors that may hinder the implementation of modern wound dressing in the study setting were identified.

RESEARCH QUESTIONS

The study was conducted to answer the following questions:

1. What is clinical nurses' level of knowledge on MWD?
2. What is the perception of clinical nurses of MWD?
3. Does the knowledge of clinical nurses influence their perception of MWD?
4. Do socio-demographic variables (academic qualifications, years of working experience, designation) of clinical nurses influence their knowledge of MWD?
5. What are some of the nurses' perceived factors that keep them from using MWD in the study setting?

DEFINITION OF KEY WORDS

Knowledge: Clinical nurses' understanding of modern wound dressing.

Perception: Clinical nurses' views or opinions of modern wound dressing, which may be positive (acceptance of MWD techniques) or negative (rejection of MWD techniques.)

METHODS

The study employed a cross-sectional, descriptive design and was conducted in the medical and surgical units of a tertiary teaching hospital in South-West, Nigeria. A total of 200 nurses from the medical and surgical units of the hospital were selected, using a simple random sampling technique to participate in the study. A 40-item survey questionnaire developed from comprehensive review of literature was used to collect data. The first section in the questionnaire elicited the participants' demographic variables. The second section (16 items) elicited information on the participants' knowledge of MWD, and the third section (13 items) explored perceptions of MWD. The last item is an open format question that identified the perceived factors influencing the implementation of MWD in the study setting. Internal consistency of the instrument was determined using Cronbach's Alpha coefficient and a score of 0.85 was obtained. Ethical approval for the conduct of the study was given by the Ethical Review Board of the hospital under study, while informed consent was obtained from the participants.

Data were collected within three weeks (December 2012 and January 2013). The questionnaires were administered to the nurses in their respective wards and same were retrieved immediately after completion. The Statistical Package for Social Sciences (SPSS) version 20 software was used for data analysis. The nurses were categorised as Junior (Nursing Officer I & II) and Senior (Senior Nursing Officer, Principal Nursing Officers, Assistant Director of Nursing Services, and Deputy Director of Nursing Services) Nursing Officers. The questions on knowledge were scored as correct (2) and incorrect (1), while questions on perception were scored as completely true (4), slightly true (3), slightly false (2), and completely false (1) for positive responses. Negative responses were scored in a reverse order. The total score obtainable for knowledge was 32. A score of 1–15 was adjudged poor, and 16–32 was adjudged good knowledge. The total score obtainable for perception was 56. A score of 1–27 was categorised as negative perception and a scores of 28–56 as positive. Hypotheses were tested using Pearson Moment Correlation Coefficient and Chi-square.

RESULTS

Of the 200 questionnaires distributed, 183 were filled and returned, giving a response rate of 91.5%. The majority of participants (80.3%) were middle aged adults (20–40 years) and 75% were females. The designation profile of the participants further showed that 68.3% of them were junior nurses with a majority having 1–10 years of clinical experience (78.1%) and diploma certificates (74.1%) (Table 1).

Table 1: Socio demographic characteristics of the nurses (N= 183)

Age distribution (in years)	Frequency	Percentage
20-40	147	80.3
41-60	36	19.7
Gender		
Male	46	25.1
Female	134	74.9
Designation		
Junior Nurse		
NOII	96	52.5
NOI	29	15.8
Senior Nurse		
SNO	26	14.2
PNO	11	6.0
CNO	2	1.1
ADNS	19	10.4
Work experience in years		
1-10	143	78.1
11-20	28	15.3
21-30	10	5.5
31 and above	2	1.1
Academic qualification		
Diploma	136	74.3
University degree		
Bsc	42	23.0
Msc	4	2.2
PhD	1	0.5
Hospital Unit		
Medical	84	45.9
Surgical	99	54.1

Table 2: Responses to knowledge statement of modern wound dressing (N=183)

	Correct	Incorrect
	f (%)	f (%)
Modern wound dressing is based on the principle of creating and maintaining moist wound environment.	94(51.4)	89(48.6)
Hydrocolloid can be used to rehydrate necrotic wounds and promote debridement.	115(68.8)	68(31.2)
Hydrogels cannot be used for highly exuding wounds.	61(33.3)	122(66.7)
Thin hydrogels absorb exudates and debride wounds,	93(50.8)	90(49.2)
Hydrogels are suitable for all stages of wound healing.	50(27.3)	133(72.7)
Alginate is produced from sodium and calcium.	50(27.3)	133(72.7)
Keltogel and sorban are types of alginates.	50(30.6)	127(69.4)
Composite is a combination of two or more modern wound dressings.	103(56.3)	80(43.7)
Gauze saline is a type of modern wound dressing.	49(26.8)	134(73.2)
Modern wound dressing occurs in form of milk	53(29.0)	130(71.0)
Sorban is a type of hydrocolloid.	15(8.2)	168(91.8)
Hydrocolloid can be used for hypergranulation.	22(12.0)	161(88.0)
Intasite and granugel are types of hydrogels.	35(19.1)	148(80.9)
Alginates can be used for dry and necrotic wounds.	14(7.7)	169(92.3)
Allevynl is not a type of foam dressing.	20(10.9)	163(92.3)
Foam dressings are suitable for epithelising wounds.	27(14.8)	156(85.2)

As reflected in table 2, a majority of the nurses responded incorrectly to many of the questions that tested their knowledge on the types of modern wound dressings and the use thereof. For example, a majority gave incorrect answers to the statement, 'Hydrogels cannot be used for highly exuding wounds' (66.7%); 'Sorban is a type of hydrocolloid' (98.1%); 'Alginates can be used for dry and necrotic wounds' (92.3%). Other responses are found in table 2. The mean knowledge score of the nurses was 13 ± 7.6 (CI, 11.9–14.1) with minimum and maximum scores of 0 and 31, respectively. Also, the mean perception score was 31.8 ± 5.7 with minimum and maximum scores of 14 and 53, respectively (CI, 31.00–32.7). Further analysis showed that 60.1% had poor knowledge while 80.9% had a positive perception. However, of those with poor knowledge, 83.6% had positive perceptions (Fig 1).

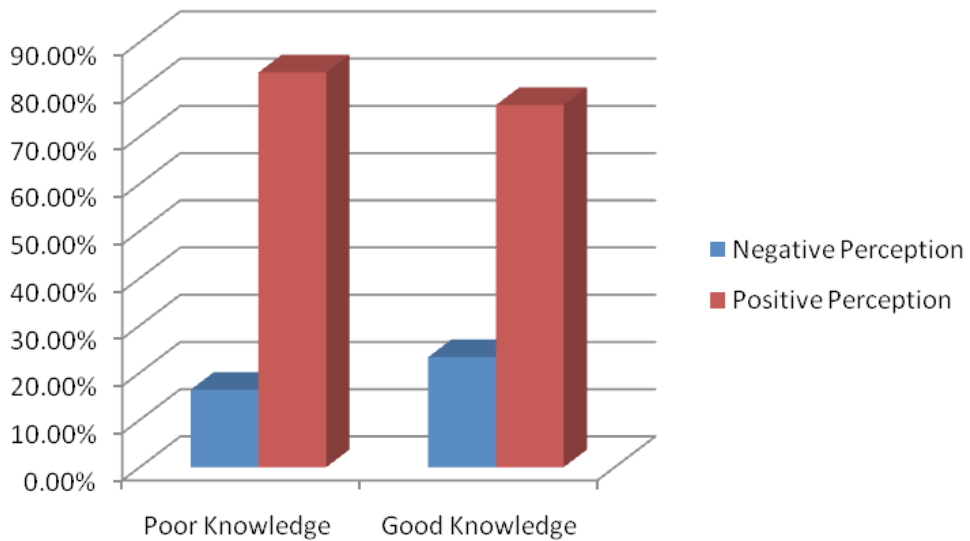


Figure 1: Percentage distribution of knowledge of nurses according to their perception

Assessing each of the perceptual statements, approximately 50% reported that modern wound dressing should be introduced gradually into the clinical setting while a few (13.1%) reported that there is no difference between the healing time of modern wound dressing and gauze saline dressing. Other responses on perceptual statements are presented in table 3.

Table 3: Responses to perception statement of modern wound dressing (N=183)

Variables	Completely True	Slightly True	Slightly False	Completely False
	f(%)	f(%)	f(%)	f(%)
Forceps dressing will prevent contamination better than glove.	60(32.8)	63(34.4)	12(6.6)	48(26.2)
Modern wound dressing is cost-effective.	70(38.3)	64(35.0)	21(11.6)	28(15.3)

Modern wound dressing will save time spent on dressing wounds.	123(67.2)	43(23.5)	12(6.6)	5(2.7)
There is no difference between the healing time of modern wound dressing and gauze saline dressing.	24(13.1)	67(36.6)	48(26.2)	44(24.0)
Modern wound dressing will promote healing faster than gauze saline.	94(51.4)	61(33.3)	17(9.3)	11(6.0.)
I had no challenge in the use of forceps dressing; hence, modern wound dressing is not necessary.	34(18.6)	33(18.0)	52(28.4)	64(35.0)
Traditional wound dressing enhances healing more than modern wound dressing.	18(9.8)	24(13.1)	48(26.2)	93(50.8)
I am less interested in the implementation of modern wound dressing.	25(13.7)	22(12.0)	25(13.7)	111(60.7)
The use of modern wound dressing will improve practice on wound care.	122(66.7)	40(21.9)	9(4.9)	12(6.6)
Modern wound dressing is not easy to carry out.	18(9.8)	24(13.1)	49(26.8)	92(50.3)
The gauze dressing is cheaper for the client in our locality.	100(54.6)	53(29.0)	14(7.7)	16(8.7)
Modern wound dressing will aid the development of more autonomous nursing care of patient with wound.	106(57.9)	62(33.9)	10(5.5)	5(2.7)
The change of forceps dressing to glove should be gradual.	87(47.5)	69(37.7)	15(8.2)	12(6.6)
I am surer of the sterility of the traditional made gauze than the modern.	25(13.7)	39(21.3)	43(23.5)	76(41.5)

The most reported factors perceived to influence the implementation of modern wound dressing techniques include non-availability of MWD materials (34.3%), poor knowledge of nurses (28.4%), and the high cost of MWD (27.4%) (Fig. 2).

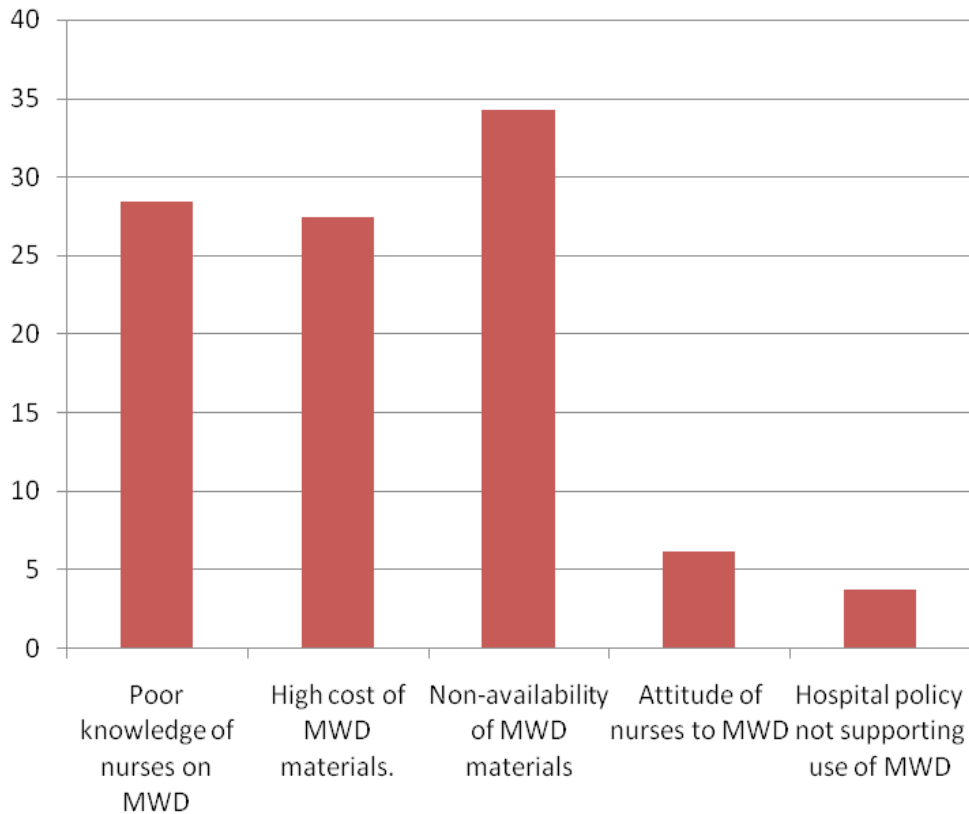


Figure 2: Percentage distribution of perceived factors influencing the implementation of modern wound dressing techniques

DISCUSSION

Knowledge is an essential concept in day-to-day activities, and quality nursing practice is hinged on knowledge update and evidence-based practice. The utilisation of modern wound dressings is a global phenomenon that is replacing traditional methods of wound dressing. The understanding that every clinical nurse has of modern wound dressing will consequently lead to the improved use of dressing techniques. Anecdotal evidence has shown that nurses in the study setting have been exposed to training in the use of modern wound dressing, but this study has shown that the majority of the participants have poor knowledge of the concept. Despite the documented evidence of the benefits of modern wound dressings over traditional dressings (Kahl, 1999:215), previous studies confirmed that the poor knowledge of health care professionals hindered the effective

implementation of dressing techniques (Benbow, 2008:4). Nonetheless, the training of nurses in modern wound dressing was emphasised by King (2000:341) as essential in applying modern wound dressing techniques, which will consequently increase their confidence in their ability to undertake appropriate wound management techniques (Vowden & Vowden, 2003:37).

Despite the poor knowledge observed in this study, it is interesting to note that the majority of participants had a positive perception of modern wound dressing. It has been asserted, though, that knowledge influences perception. Thus, when an individual has good knowledge of a concept, it is likely that such an individual will have a positive perception and vice versa. In this study, the contrary is the case. The positive perception of the nurses with poor knowledge shows that nurses are favourably disposed to the use of MWD despite their poor knowledge. Knowledge fades with time. The moment a particular procedure is not carried out regularly, there is bound to be knowledge decrease. The insignificant association between the socio-demographic variables of the nurses and their knowledge is expected in this study. This is because the concept of modern wound dressing is new in Nigeria and requires of every young and old trained nurse to be specifically trained in MWD techniques. Therefore, improving the knowledge of the nurses in MWD techniques should involve every category of nurses irrespective of their academic qualifications, years of working experience and designation.

The poor knowledge of the nurses was also mentioned as a perceived factor that hinders the implementation of MWD techniques in the study setting. Hence, improving the knowledge of such nurses should not be underestimated. Efforts should be made to update their knowledge either through seminars, workshops or short-course programmes for the improved health of their patients. Also, it can be assumed that the non-availability and high cost of MWD dressing materials in the study setting as reported perceived factors influencing the implementation of MWD contribute to infrequent utilisation of this technique. Nigeria is a low-income country where out-of-pocket expenditure on health is high (Gottret & Schieber, 2006:213). Thus, patients who are responsible for the hospital bills may find it difficult to purchase the material used for dressing their wounds. The hospital management can make the materials for MWD available for patients at a subsidised rate so that nurses can continually make use of the techniques and patients could also have their wounds healed at an increased rate.

CONCLUSION

The majority of clinical nurses in this study demonstrated a poor knowledge of modern wound dressing amid the positive perceptions of many of them. Poor knowledge of nurses was mostly reported as factors influencing the implementation of modern wound dressing in the study setting.

RECOMMENDATIONS

Nurses in this study setting demonstrated a poor knowledge of modern wound dressing techniques despite documented evidence of the effectiveness of MWD. For cost-effective and efficient management of patients with wounds, it is essential that hospital managers organise intensive training programmes for these nurses as an ongoing component of staff development. The application of modern wound dressing techniques should be made a policy to be strictly adhered to by clinical nurses for the speedy recovery of patients. It is also essential that hospital managers ensure an environment conducive to learning, and an adequate supply of all materials for the effective implementation of MWD techniques.

LIMITATION OF THE STUDY

Generalisation of the findings from this study to Nigerian nurses is limited because it was conducted at a single tertiary institution. Therefore, further studies that will involve a large population size of clinical nurses should be carried out in future. This study did not receive financial support, which also limited the scope of the study.

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