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Research Article

**KNOWLEDGE AND ATTITUDE TOWARD WOUND CARE
AMONG DOCTORS AND NURSES IN MULTIPLE CENTER,
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Jamal Alhtlani¹, Jumanah Othman Alwanin¹.**¹Collage of medicine, Qassim University, Saudi Arabia., ²General Surgery Consultant, Head of
OR Department King Fahad Specialist Hospital –Buraydah.**Abstract:**

Background: Wound healing in some situations is considered a challenge for health care workers. Their act and knowledge in such situation is attributed to the education and training they got. In our paper we will aid in assessment the reality of health care given in regards wound care.

Methods: A cross section multicenter study done in Saudi Arabia_ Qassim region, with a total of 255 participants that were randomly selected. A questionnaire sheet which measures the level of knowledge about wound care and practice were used.

Results: The study showed there were a significant difference regarding wound care knowledge between the participated centers. This can be attributed to the training and workshops that is provided by the center for health care worker.

Conclusion: The study showed a significant deficiency in knowledge regarding wound care among health care worker especially nurses and medical students except in King Fahad Specialized Hospital which can be attributed to the courses provided by the medical administration. We advise that the medical and nurse colleges should provide the students with enough education material in regard to wound management. In addition, hospitals needs to provide regularly refreshment and updating courses.

Keywords : Wound, Acute wounds, Chronic wound, Debridement, Pressure ulcer, Venous ulcer, Arterial ulcer, Diabetic foot ulcer, Traumatic wounds.

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INTRODUCTION:

Wound defined as disruption of integrity and function of tissue in the body [1]. Wound is classified into acute wounds and chronic wounds. Acute wounds are include traumatic and surgical wounds. Chronic wounds include pressure ulcer, venous ulcer, arterial ulcer, diabetic foot ulcer and non-healing surgical or traumatic wounds [2]. Wound healing remains a challenging clinical problem, correct and efficient management is essential for proper wound healing. The challenge that healthcare is facing with wound care received by patients is that it's a multifactorial and these factors, in turn are related to education and training with respect to wound care.

Chronic wound management generally starts by debridement, which depends on many factors such as: the condition of the wound and the surrounding skin, the blood supply to the injured tissue, level of tolerance that pain and availability of wound care equipment and treatment goals. Also, we should assess the infection in a debrided ulcer, or if there is no epithelialization from the margin within two weeks of debridement and initiation of compression therapy, determine the type and level of infection in the debrided ulcer by tissue biopsy. [2]

Presence of such types of chronic wounds that needs special management is harassment to the patient and burden to the society as it needs repeated wound dressing with or without admission to a hospital. This shifts us to estimate economic liability that wound care is forcing on individuals, healthcare systems and our government. In a research done 2015, was found that annual National Health Service cost of managing these wounds and associated comorbidities was £5.3 billion [3].

To the best of our knowledge, Data on Knowledge and attitude toward wound care among healthcare workers in Qassim province and likely in all of the Kingdom of Saudi Arabia are limited. This paper will aid in understanding and assessment the reality of health care given in regards wound care.

METHODOLOGY:

Study design:

Our research is across-sectional study to measure the knowledge and attitude toward wound care among nurses and doctors. Our sample includes 255 doctors and nurses in Qassim region from four different hospitals; King Fahd special hospital (KFSH), maternal and children hospital (MCH), Buradiah central hospital (BCH) and king Saud hospital. We used a referenced questionnaire for data collection which includes many questions to measure the level of knowledge and practice among participants. We

include doctors, nurses and last year medical students in corresponding hospitals. All workers who aren't workings directly with patients were excluded.

Management and work plan:

Collection of data was started in May till Jun 2018, after the IRB approval was obtained from ethical committee and hospitals administration. The statistical analysis of the data was done using IBM SPSSv24. While the analytical tests which were used were one sample T-Test, Mann-Whitney U-Test, chi-square test, and Fischer's Exact Test.

RESULTS :

Data was collected from 255 (n=255) participants working in the following four hospitals.

Most of the participants 80(31.4%) were working in KFSH at the time of the study while the individual strength of participants in each hospital is tabulated below. Among all, 122(48%) of the participants were doctors and 133(52%) were nurses by profession. Moreover, 107 of the participants were males (42%) and 148 were females (58%).

In our sample, we tried to include participants from every age group but the majority of the participants lie between 21-30 years of age (Figure1). The nature of the job the participants were analyzed, most of them are family physicians and general surgeons, distribution of job nature is tabulated below. (table1)

Majority of the participants (94%) were found interested in wound care, and good number had read about (34%) and most of them interested to learn more either in a form of materials or courses but small percentage (5.9%) are not interested (table2)

The score of knowledge were compared in all hospitals which showed that the participants of King Saud hospital, the majority of them scored poor or bad. This result might be due to the apprehension of the participant in exposing his or her bad knowledge to the researcher. Only in KFSH hospital, 41.3% showed good score and 11.3% showed the excellent result, highest among all the hospitals. (Table 3)

Similarly, the results for knowledge score in different hospitals among doctors were calculated. It revealed that doctors working in family medicine showed the best result for dressing, pressure ulcers and venous ulcer.

Comparing the result for doctors in general surgery; for questions related to dressing doctors in KFSH showed 9% good results, regarding diabetic ulcers doctors in almost all hospitals showed equal to or

more than 50 % good result, for pressure ulcers doctors in all hospitals showed bad results and more than half of them performed bad.

For doctors in other academic jobs; doctors in KFSH and MCH showed more than 50% good results regarding questions related to dressing, for questions regarding diabetic ulcer all the doctors in different hospitals showed good result with doctors in KFSH and MCH showing 85.71 and 94.71% better result respectively, for pressure ulcers questions, doctors only in MCH showed good results and for questions related to venous stasis only doctors in KFSH showed good results (85.71%). (Table 4)

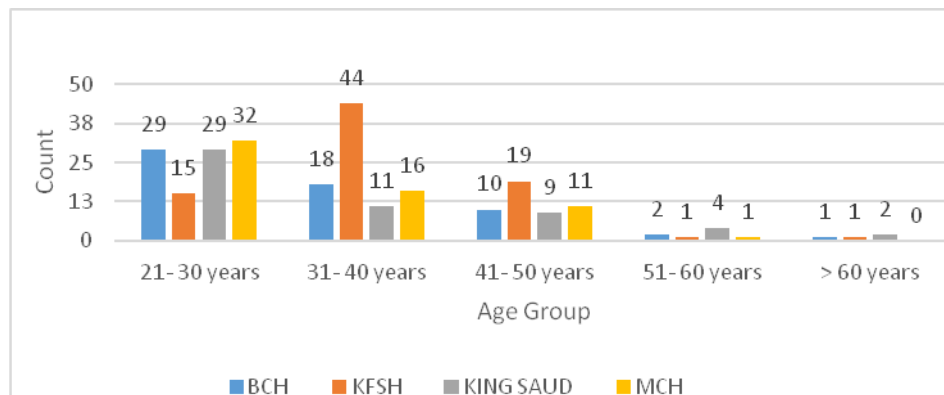
Score for different types of knowledge fields among doctors and medical students were calculated. There were five questions each for four categories namely dressing, diabetic ulcers, pressure ulcers and ulcers caused by venous stasis (table 5)

The results for knowledge categories were also compared in all the hospitals for doctors and nurses according to their academic jobs (table 6)

The difference of score after comparing the type of wound and the knowledge score with respect to the questions asked in that specific topic. The trend which followed here showed bad knowledge score by the participants. The mean knowledge score dressing wound was 2.34 ± 1.34 (mean \pm SD), the diabetic wound was 2.79 ± 1.27 , pressure wound was 1.79 ± 1.21 , and venous stasis wound was 2.39 ± 1.45

A comparison of the knowledge score between the doctors and the nurses working in different hospitals was also made and KFSH hospital leads all the hospitals, where doctors and nurses equally performed well. In King Saud hospital, the opposite picture was seen. The chi-square test showed that these variables have no correlation ($p < 0.05$) to the hospitals, academic qualification or the academic job. In other words, the knowledge scores are totally dependent on the individual enthusiasm and practice. There is also a need of educating the healthcare practitioners so that their performance in the professional scenarios can be made better as the bad knowledge score shows the risk of mismanagement of the patient.

Figure 1: Percentages of age of participants and distribution in the hospitals (n = 255)



KFSH: King Fahad Specialist hospital; BCH: Buraidah central hospital; MCH: maternal and children hospital

Table 1: Frequency and percentage of participant's nature of job

CURRENT ACADEMIC JOB	FREQUENCY	PERCENT
FINAL YEAR MBBS	7	2.7
FAMILY MEDICINE	47	18.4
GENERAL SURGERY	42	16.5
OTHER	159	62.4
TOTAL	255	100.0

Table 2: Frequency and percentage of wound care interests in different hospitals

HOSPITAL		Interested and I have read about it.	Interested, but do not read about it.	Not interested	Very interested, I want to do research in this area.	Very interested, send me on a course	Very interested, send me reading the material	Total
BCH	Count	14	15	2	9		16	60
	%	23.3%	25.0%	3.3%	15.0%	6.7%	26.7%	100.0%
KFSH	Count	20	28	4	3	11	14	80
	%	25.0%	35.0%	5.0%	3.8%	13.8%	17.5%	100.0%
KING SAUD	Count	33	5	4	1	3	9	55
	%	60.0%	9.1%	7.3%	1.8%	5.5%	16.4%	100.0%
MCH	Count	12	33	5	0	2	8	60
	%	20.0%	55.0%	8.3%	0.0%	3.3%	13.3%	100.0%
Total	Count	79	81	15	13	20	47	255
	%	31.0%	31.8%	5.9%	5.1%	7.8%	18.4%	100.0%

KFSH: King Fahad Specialist hospital; BCH: Buraidah central hospital; MCH: maternal and children hospital

Table 3: the results of knowledge scores and the hospitals of the participants

Final Result		HOSPITAL				Total
		BCH	KFSH	KING SAUD	MCH	
Bad	Count	5	2	10	8	25
	% within Hospital	8.3%	2.5%	18.2%	13.3%	9.8%
	% of Total	2.0%	0.8%	3.9%	3.1%	9.8%
Poor	Count	34	11	27	21	93
	% within Hospital	56.7%	13.8%	49.1%	35.0%	36.5%
	% of Total	13.3%	4.3%	10.6%	8.2%	36.5%
Fair	Count	21	25	16	19	81
	% within Hospital	35.0%	31.3%	29.1%	31.7%	31.8%

	% of Total	8.2%	9.8%	6.3%	7.5%	31.8%
Good	Count	0	33	2	12	47
	% within Hospital	0.0%	41.3%	3.6%	20.0%	18.4%
	% of Total	0.0%	12.9%	0.8%	4.7%	18.4%
Excellent	Count	0	9	0	0	9
	% within Hospital	0.0%	11.3%	0.0%	0.0%	3.5%
	% of Total	0.0%	3.5%	0.0%	0.0%	3.5%
Total	Count	60	80	55	60	255
	%	23.5%	31.4%	21.6%	23.5%	100.0%

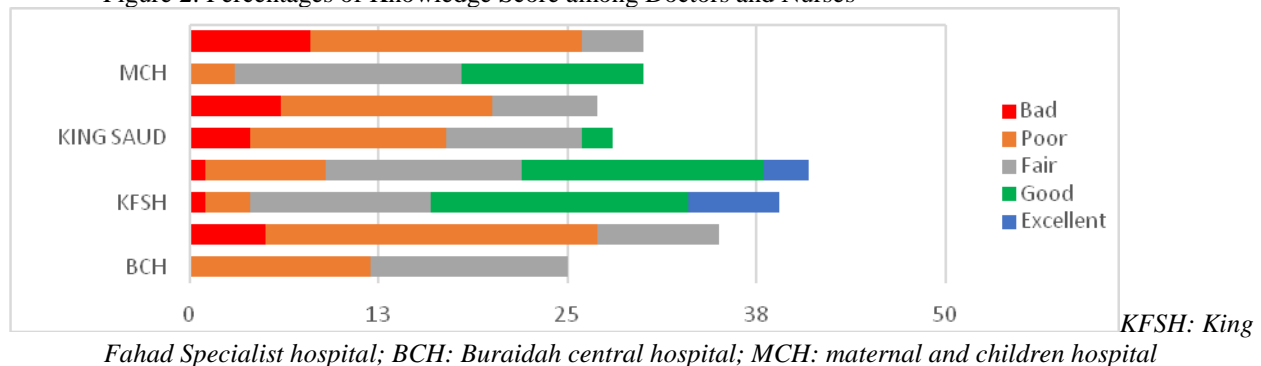
KFSH: King Fahad Specialist hospital; BCH: Buraidah central hospital; MCH: maternal and children hospital

Table 4: the results of knowledge scores among doctors in different types of ulcers

Category	Score Category	Final year MBBS	Family Medicine	General Surgery	Other
Dressing	Bad	3	2	11	14
	Poor	2	3	10	19
	Fair	1	4	7	11
	Good	1	2	6	14
	Excellent	0	2	6	4
Diabetic	Bad	2	0	2	7
	Poor	1	4	11	8
	Fair	1	4	4	23
	Good	2	5	18	14
	Excellent	1	0	5	10

Pressure	Bad	3	1	13	22
	Poor	1	4	13	17
	Fair	3	7	10	19
	Good	0	1	2	4
	Excellent	0	0	2	0
Venous Stasis	Bad	2	6	9	15
	Poor	3	1	6	13
	Fair	1	3	8	16
	Good	0	2	10	9
	Excellent	1	1	7	9

Figure 2: Percentages of Knowledge Score among Doctors and Nurses



DISCUSSION:

This study is designed as a cross sectional survey in order to evaluate health care workers within multiple centers in Al- Qassim region regarding their level of wound care knowledge, attitudes, and practice. To the best of our knowledge, no previous similar studies have been done in Al- Qassim region and likely in all Saudi Arabia that aim to assess health care workers knowledge in regard to wound care.

A total of 255 health care workers were participated in the study from multiple centers. Out of 255 health care workers a total of 107 (42%) of the participants were males and 148 (58%) were females, 122 (48%) of the participants were doctors and 133 (52%) were nurses by profession, and most of the participant 80 (31.4%) were from KFSH. in addition to the multiple centers enrolled in our study we tried to include

participants from every age group (table1). However, almost a similar study done in South Africa to assess the knowledge of wound care among general practitioners (GP's), surgical registrars and final-year medical students. A total of 257 participants were included in the study, the proportion of males and females were almost the same (50.4% and 49.6%), and most the participants age group lied between 21-30 years [4].

The participants were asked if they are interested in reading materials regarding wound care management (table3).The participants knowledge regarding wound care management were assessed in the questionnaire (table 4) .In our study we compared between practicing physicians in different medical specialties and medical students regarding wound care

management knowledge among various aspect and we found that medical students scored lower than practicing physicians. The lower score of the medical students can be attributed to their low level of experience in the medical field and short exposure time to patients with wounds that needs special management.

To the best of our knowledge our study is the only study that compared between family physicians and surgeons regarding wound care knowledge. Our study found that family physicians scored better score in all wound care aspect in our questionnaire in compare to surgeons except in case of venous stasis wounds. However, the difference was not significant. JF Coetzee et al. also compared wound-care knowledge between GP's and trainee surgeons. The showed that surgeons are better in compare to GP's, though the difference did not achieve statistical significance. However, looking to the overall results the study appeared that physicians are sored a low grade regarding wound care knowledge⁴. Education courses and materials should be provided for physicians in order to improve their level of knowledge which will lead to better outcomes for the patients.

We also compared wound care knowledge between physicians and nurses and found that physicians scored more fair score compared to nurses in all of the participated centers. The difference in knowledge between physicians and nurses was significant in all of the participated centers except in KFSH were most of the participants either physicians or nurses had a score between fir and good. The difference in the knowledge score between KFSH and other participated hospitals can be explained by courses and materials provided to them by medical administration that can help in refreshment and updating their knowledge. Romero Collando et al. conducted a study in Spain to evaluate the level of the knowledge provided to the nurses regarding wound care assessment and management and found a deficient materials⁵. Wound management and evaluation is very important, nurses should be fully aware regarding different types of wounds and their management in order to produce a better outcomes for the patients.

This study had many limitations including; difficulty to contact the hospitals, limitation of similar research, and limitation of time.

CONCLUSION:

In our study we found that there was an efficient knowledge regarding wound care management

knowledge among health care workers (physicians and nurses) and medical students. Practicing physicians had a better score in compare to medical students, unsurprisingly due to more clinical experience and exposure time with the patients. Universities should provide the medical students with more theoretical courses regarding wound care and more exposure time with patients. In addition, physicians scored better when compared to nurses with significant difference in knowledge indicating that more effort need to done for improving their level of knowledge in order to provide a better outcomes for the patients. Finally, in our study we found that KFSH participants (physicians and nurses) had a significant better score in compare to the other participated centers which is can be attributed to the courses provided by the medical administration.

Recommendation:

We advise that universities should emphasize more on the topics related to wounds management and provide the students with more exposure time to patients with chronic wounds.

The medical and nurse colleges should provide the students with enough education material in regard to wound management. In addition, hospitals needs to provide regularly refreshment and updating courses.

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