

The Provision of Wound Management Services by Community Pharmacists in Dubai, United Arab Emirates

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ABSTRACT

Objective: To investigate the current level of pharmacists' wound management experience and their views on this role in community pharmacies that provide pharmaceutical services within the Dubai health boundaries.

Methods: A questionnaire-based survey.

Results: There was a 92% response rate. 88% of the respondents reported that the pharmacy opening hours were between 14 to 16 hours per day. More than half of respondents, 60%, reported that they dealt with minor wound cases on a nearly daily basis, while 90% of the respondents reported that they had never seen major wounds during their pharmacy practice. 43% of the pharmacists included in the study rated their understanding of wound causes and management as either poor or fair. In response to how important they considered wound management skills to be in the future of community pharmacy practice, 83% of the pharmacists rated it as either important or very important. Moreover, 62% of the respondents disagreed that wound management is only the role of doctors and nurses, and that pharmacists should be excluded from this role.

Conclusions: Despite the evident poor knowledge of wound management amongst the pharmacists studied, 85% of the responding pharmacists showed remarkable willingness to be trained and better equipped for this role, an attitude that is worth encouraging. Furthermore, it was indicated that wound management should not only be a role for other health care professionals (doctors and nurses) but should be considered in any future training plan for pharmacists in the United Arab Emirates.

Keywords: Dubai, UAE, pharmacist, wound management, satisfaction, pharmacist role.

INTRODUCTION

Chronic non-healing wounds are a significant health concern for many patients worldwide. Up until recent times, there was a perception that poor wound care outcomes were due to the disease itself. Consequently, chronic wound patients accepted that, if health care providers could not achieve wound healing, their wounds were therefore non-healable.^{1,2} Problematic, acute and chronic wounds are a major concern for health professionals and patients alike for

three important reasons: the large number of patients suffering morbidity and mortality because of difficult wounds, complications like amputations in diabetics that arise from improperly managed wounds, and the burden to health care systems where resources are stretched and the costs are overwhelming. There are 2.5 - 4.5 million patients with chronic wounds in the United States alone.³ Pressure ulcers consume at least 1% of the health care budget, which could reach 2.8 billion US dollars annually.^{3,4} Pressure ulcers, diabetic foot ulcers, venous leg ulcers, though branded as chronic wounds, have been found to heal with appropriate intervention.^{5,6} Even specialists like dermatologists and plastic surgeons may have difficulties in choosing optimal treatment as they are

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frequently overwhelmed with a vast number of topical drugs, dressings and wound healing techniques.^{7,8} However, the provision of efficient wound care can be maximized by building a multidisciplinary team.^{9,10} It is noteworthy that the pharmacists' contribution to the wound management process has been found to be helpful in studies conducted in Australia.^{11,12} Moreover, such provision of pharmaceutical wound care by pharmacists is supported due to its need in the health care system, the expertise of the pharmacists to provide this in an economical way, and the trust bestowed on pharmacists by the public at large.¹³ Although the health care system is well developed in the Middle East, a good number of patients in the United Arab Emirates (UAE) rely heavily on the advice and expertise of their pharmacists.¹⁴ This increasing involvement of pharmacists as the first port of call for many health services raises discussions about their contribution to patient care by provision of wound management services. There are numerous studies available on the complex biochemistry of wound healing as well as new advanced techniques. However, with the exception of a few studies carried out in Australia,¹² there are hardly any investigations into the contribution of pharmacists to wound management practice.

Despite the increased demand of services that pharmacists can provide, the provision of wound management services by either hospital or community pharmacists has never been considered in the UAE. The rationale of this study was to explore the new role of pharmacists in wound healing in the UAE. The objectives were to investigate the current levels of the pharmacists' wound management experience and views on this role in community pharmacies within the Dubai health boundaries.

Method

A cross-sectional study using an 18-item questionnaire was used to survey a convenience sample of pharmacists across community practices in Dubai. A questionnaire was developed from one survey used in a

1997 Australian pharmacists' study, and was modified in order to suit the UAE pharmacists and practice.¹¹ To ensure face validity after the modifications of the instrument, the questionnaire was sent to two academics with a wide range of experience within the profession. Their comments were considered and then incorporated into the final draft which consisted of 18 items in addition to a cover page describing the background and purpose of the study. The questionnaire covered sections on the pharmacy setting, wound management experience in the pharmacy, availability of resources and background knowledge, the pharmacists' views on his/her role in wound management and a section inviting comments. Sample size was selected with the goal of making inferences about the population based on the proportion within the sample responding to each item. Based on previous studies that used the postal service for distribution of questionnaires,¹⁵⁻¹⁷ a 50 % response rate was estimated and, with an error margin of 0.09(9.0%), this resulted in a target sample size of 118.¹⁸⁻¹⁹ The calculation was as follows:

$$\text{Sample } (n) = \frac{(1.96)^2 pq}{d^2} = \frac{(1.96)^2 (0.5)(1-0.5)}{(0.09)^2} = 118.5, n = 118$$

Where d is the margin of error (9%), p is the predicted proportion (50% response rate) and q is 1-p (50%).

This resulted in a total of 118 pharmacists participating from a total of 379 community pharmacies in the selected areas at the time of the study.²⁰ A community pharmacy would typically have one licensed pharmacist who holds a Bachelor of Pharmacy degree, with one or two pharmacy assistants with diplomas and/or a graduated pharmacist waiting to sit for the licensing exams. Some 24-hour pharmacies have more than one licensed pharmacist. This organization chart was taken into consideration and a clear criteria was used in sampling, where only licensed pharmacists who had equivalent academic qualifications were included, in order to ensure comparable results. Furthermore, only one questionnaire was left per pharmacy in order to cover more pharmacies, in different areas of Dubai. The

pharmacy names, contacts and location were collected according to their availability from the Dubai health directory.¹⁸ The poor response rate expected from using the postal service for distribution of questionnaires necessitated face to face visits to the pharmacies. Licensed community pharmacists representing different areas of Dubai were invited to participate and, after a verbal consent was taken, they were left with a questionnaire which was collected after two weeks. In order to increase the response rate, the non-respondents were reminded by telephone to complete the form, which was then collected in a week's time. However, due to the reluctance of many of the pharmacists approached, a sample of only 100 participants from throughout Dubai responded, instead of the 118 target sample. Nevertheless, the findings of this study can be generalized to represent community pharmacists with similar practices and resources who similarly encounter wound cases in their daily operations. There is no requirement to obtain ethical approval for such a study in the UAE. The study was carried out over a period of six months (January to June, 2006).

Results

Of the 100 questionnaires distributed, the number of pharmacists that responded was 92. Eight forms were returned empty due to lack of time, resulting in a response rate of 92%. There were also 32 forms found to have a significant number of unanswered questions in the 18-item short questionnaire. Following a consultation with the academics, these incomplete forms were excluded in order to get comparable and reliable results. Hence, only the 60 complete questionnaires were included in the study.

Pharmacy setting

In the survey, 88% of the respondents reported that the pharmacy opening hours were between 14 and 16 hours per day. The median estimated number of patients' prescriptions served per day was 120 (lower quartile = 90, upper quartile = 150). The median number of years practiced as community pharmacists for the entire sample pooled was 15 (lower quartile = 8, upper quartile = 21).

Wound management experience in pharmacy

More than half (60%) of the respondents reported that they dealt with minor wounds in their pharmacy 'most of days' or 'all of days'. When the respondents were asked about the frequency of their involvement in the management of wounds in the pharmacy, 48% of the respondents reported that they were involved with wound management '2-3 times per week' or 'every day' while 24% of the respondents selected 'once a week' or 'once a month'. Twenty-eight percent of the respondents reported that they had rarely dealt with wounds, and 90% of the sample pooled reported that they had never seen major wounds during their pharmacy practice. Table 1 shows the responses on the frequency of minor, severe and major wounds seen in the community pharmacies.

Availability of resources and background knowledge

When pharmacists were asked to rate their understanding of wound causes, healing and management, 43% of respondents rated their understanding as "fair" or "poor" while 75% of the respondents reported that they had no earlier exposure to any specific wound management training program. Furthermore, 78% admitted that they did not have any reference books in their pharmacies related to wounds or the wound management protocols. As a matter of interest, 83% of the pharmacists included in the study reported that wound management is either important or very important in the future of community pharmacy practice.

Pharmacist views on his/her role in wound management

The results from the eight items that reference the pharmacists' views on the role in wound management scale showed that the pharmacists included in the study were very enthusiastic about their involvement in wound management. Sixty-two percent of the respondents disagreed with the statement that 'wound management is the role of doctors and nurses only, and pharmacists should be excluded from this role'. Furthermore, 70% of the respondents suggested that a separate treatment area should be available in the pharmacy to provide such services. Almost three quarters (73%) of the pharmacists studied agreed with the statement 'wound management is

an opportunity for the pharmacists to be involved as members of the health care team'. Moreover, 85% perceived that wound management training is important and agreed with the statement "I would like to see increased and improved wound management training". Table 2 summarizes the responses of respondents to eight questions regarding their views on the role of pharmacists in wound management.

Some of the comments of the 18% of the responding pharmacists who took up the offer to add any extra comments included the following: *'practice should be for clinics, as need to hire specialised person', 'from prescriptions we earn more money, dealing with wounds would be at the expense of dispensing and income', 'it is an important aspect in the profession, but no mention of diabetic wound management as I have seen more wounded diabetics than non-diabetics with other wounds', 'it is important but always used to the fact that doctors do this job', 'it is vital that pharmacists be trained and allowed to provide at least primary care in cases of emergency to avoid complications', and 'very interesting the results should be presented to the Ministry of Health in Dubai'.*

Discussion

This study has provided a good preview of the attitudes prevailing amongst community pharmacists on wound management practices. It was found to be encouraging that the majority of pharmacists considered wound management to be important. They were also in agreement on the usefulness of a multidisciplinary role in its management. The response rate of 92% in our study is appreciable considering that, in surveys involving community pharmacists, response rates have varied between 30 and 90%.¹⁵ Despite the 32 incomplete forms that were excluded, it is still considerably higher than the 9% response rate reported in the 1997 Australian study where 425 responded out of 4700 pharmacists.¹¹ While this survey provides valuable data, the possibility of non-response bias cannot be ruled out. Factors influencing the involvement of community

pharmacists in wound management practices were also assessed. Long opening hours and low script volumes give pharmacists the time needed towards such expanded practice roles. A reasonable number of wound related cases can be and should be dealt with, as minor wounds are commonly encountered. The rarity of major traumatic wounds is understandable, as one would naturally rush directly to the hospital amidst crisis, while severe chronic wounds would be dealt with in hospitals during routine check-up visits. Most respondents perceive wound dressing as first aid and, as such, do not feel inclined to charge. The poor to fair knowledge of wound treatment reported is explainable since pharmacists' basic knowledge is not upgraded through further study in this field. However, many were enthusiastic to be trained. One respondent commented that his daily work mainly focused on the sale of drugs; hence he was not keen to keep reference books apart from the British National Formulary. The study results were compared to the previously published study in Australia where similar attitudes were observed for the need and desire for information on an on-going basis, with a minority professing that previous trainings had been adequate.¹¹ It was realized that, as far as willingness to adopt a positive role in wound management is concerned, the respondents' comments follow a pattern of an all-or-nothing phenomena. Such barriers to expanding roles in health management have been reported to be due to the reluctance to go beyond dispensing as well as a lack of educational resources and/or government support.²¹⁻²³ This is something acknowledged in the pharmacists' comments in both this and the Australian study.¹¹ Results from both studies emphasize the need for inclusion of wound management topics in undergraduate as well as continuing pharmaceutical education programs. Health authorities should be urged to support such interventions by providing educational leaflets on the subject and also reviewing pharmacy practices to integrate a multidisciplinary system where pharmacists support health care in both

acute and chronic wound patients.²⁴⁻²⁷ Such developments in wound care can only come to life when pharmacists as individuals promote positive changes in their views on their professional goals and pharmacy practices.^{13,28} Pharmacists should be encouraged to increase the use of information technology as well as technicians in their day to day pharmacy operations.²⁹⁻³⁰ This would give them the extra time and support needed to contribute positively towards wound care outcomes. This study is the first time this base level data has been collected on the topic in the UAE. Moreover, educational and health officials need to encourage pharmacists to not only participate, but to also conduct such constructive pharmacy practice research both here and globally in order to raise the standards of care in the management of wounds and in all practice arenas.

Limitations of the Study

Due to the necessity of distributing questionnaires in face to face visits to the pharmacies and the reluctance of many pharmacists to participate in the survey, the target sample was barely reached. More questionnaires should have been covered during the study period. Recognizing the limitation of convenient sampling methods, the resulting sample may not be representative of the population from which it is drawn. However, since clear criteria was used in sampling, we can argue that the data collected does infer the views and wound management experiences of the pharmacists. The low number of pharmacists involved, with only 60 questionnaires fully completed by the responding pharmacists, may introduce a bias. However, this study was carried out over a large demographic area and many negative opinions were expressed. Therefore one may argue that such an assumption is not supported by the results. However, in order to avoid any hint of selection bias and to make findings more generalisable, final year students from various pharmacy schools can be involved in future studies. Additionally, it would be prudent to follow up with prior non-responders in order to achieve a higher response rate. However, since sample sizes ranging from 30-550 are generally suitable for most research, it can be

argued that the sample number already collected is acceptable.³¹ In addition, similar results were found when compared to the published Australian paper, further supporting that this study's findings are valid and sufficiently represent the population. The study was not based on hospital pharmacists, whose opinions and practices may vary from those of their community-based counterparts. The results cannot be generalized to other areas in the UAE or the Gulf since it included pharmacists from only one state. However, the findings in this study can be valuable to any pharmacist who finds their practice setting, policies and regulations similar to UAE and who has an interest in expanded pharmaceutical roles. Although the questionnaire was modified from a previous Australian study, the test-retest reliability has yet to be checked in the UAE. It is appropriate to develop a questionnaire considering Middle East attitudes and culture. Also there was not a follow-up survey addressing the details of pharmacists' wound management practices, dressings stocked, knowledge of use, nor an assessment test to check their actual background knowledge. If asked to rate their knowledge, subjective results could be obtained. Further studies on the subject are recommended for finding out if there is any association or correlation between the pharmacists' experiences and their views about such services. It would also be useful to analyze the prevalence of pressure ulcers and the specific types of wounds encountered as well as their management by local practitioners and nurses throughout the seven Emirates.

Conclusion

A high percentage of wound related cases are dealt with in the pharmacy. These are primarily restricted to minor wounds. The poor knowledge on wound management amongst the pharmacists is expected because their basic knowledge is not upgraded with training and further reading. Despite this, pharmacists show willingness to train, in order to better equip them selves for the role. Pharmacists expressed interest in learning about wound management and general agreement that it should not be restricted to other health care professionals. However, they are presently not ready to deal with more elaborate roles on wound

management and would require appropriate training and government support.

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Table 1 Pharmacists' responses on frequency of minor, severe and major wounds seen in the community pharmacies.

Statement	Response frequency				
	Never n (%)	Sometimes n (%)	Most of days n (%)	All of days n (%)	Total n (%)
Frequency seen:					
Minor wound	0 (0)	24 (40)	22 (37)	14 (23)	60(100)
More severe wound	24 (40)	33 (55)	2 (3)	1 (2)	60(100)
Major wound	54 (90)	5 (8)	1 (2)	0 (0)	60(100)

Table 2 Responses to eight questions regarding the views of community pharmacists on their role in wound management.

Statements	Response frequency			
	Disagree n (%)	Neither disagree nor agree n (%)	Agree n (%)	Total n (%)
Training and education on wound care have been adequate to meet the needs of my practice.	36 (60)	10 (17)	14 (23)	60 (100)
I would like to see increased and improved wound management training.	5 (8)	4 (7)	51 (85)	60 (100)
Wound management is the role of doctors and nurses, not of pharmacists.	37 (62)	6 (10)	17 (28)	60 (100)
Formal accreditation is important to assure standards of professional excellence.	11 (18)	3 (5)	46 (77)	60 (100)
A professional fee should be applied to certain aspects of wound management in the pharmacy.	32 (53)	7 (12)	21 (35)	60 (100)
A wound management information center would be helpful.	9 (15)	8 (13)	43 (76)	60 (100)
Pharmacies should only practice wound management, if a separate treatment area is available.	12 (20)	6 (10)	42 (70)	60 (100)
Wound management is an opportunity to be involved, as a team with other health care professionals, like doctors n nurses.	13 (22)	3 (5)	44 (73)	60 (100)

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