

Pressure ulcer educational needs for home health care in the Western Region Saudi Arabia

The pressure ulcer is a significant risk for many patients in home health care (HHC). HHC staff should illustrate competences in pressure ulcer management. HHC in the western region of Saudi Arabia provides care for around seven million citizens over an extended area of 153,128Km² in 16 administrative centres. This study aimed to explore pressure ulcer knowledge among a sample of HHC staff in Saudi Arabia. The research questions were “what is the pressure ulcer knowledge among the home healthcare staff?” and “what are the priorities for the coming programmes for HHC?” A cross-sectional descriptive study of 23 participants was carried out in April 2018. The study used the pressure ulcer knowledge and assessment test (PUKAT) to evaluate the level of pressure ulcer care administered. The average age of all participants was around 31 years old. A high percentage of nurses with diplomas and a low number of bachelor holders were the main features of the HHC staff. Also, the majority of participants were females (60.9%) with a higher education degree from Saudi Arabia and almost half of them did not a participant or attend any educational activities in pressure ulcer care (47.8%). The study highlighted the lack of knowledge related to issues of aetiology, assessment, classification and prevention of pressure ulcers, as well as a satisfactory result in the knowledge related to the role of personal hygiene and the importance of turning patients. Therefore, the study recommends that specific educational programmes for the management of pressure ulcers for HHC be established to cover this lack of knowledge.

Authors:

Abdulkarem Iblasi, Aysha Alsaquire and Gassan Watffa

Abdulkarem Iblasi is Wound Care Manager, Wound Management Unit, King Saud Medical City, Riyadh, Saudi Arabia; **Aysha Alsaquire** is Consultant Family Physician & Home Health Care, Assistant Director General, Home Medical Care Administration, Ministry Of Health, Clinical Associated Professor, Princess Norah Bint Abdulrahman University; **Gassan Watffa** is Consultant Geriatric Medicine, Director of Home Health Care Administration, Primary Healthcare and Community Health Sector, King Saud Medical City, Riyadh, Saudi Arabia

Health reorganisational plans focus on depreciating the hospitalisation periods and focus on providing the care in outpatient settings leading to a paradigm shift in medical care delivery from hospital-based care back to home-based care (Berlowitz et al, 2001). In chronic illnesses, hospitals can assign patients from inpatient settings to home health care (HHC) (Fraser et al, 2017). HHC is the first option for hospitals instead of emergency departments, or nursing homes whenever care needs can safely delivered at home (Soundappan et al, 1997).

Chronic patients have unique healthcare needs, so the staff responsible for providing the HHC service should demonstrate a proper understanding for the needs and requirements

for this patient category (Funkesson et al, 2007). Pressure ulcers pose a significant risk for many patients in HHC (Beeckman et al, 2013). Therefore, the staff responsible for providing the HHC services should demonstrate satisfactory competences in pressure ulcer management (Beeckman et al, 2011). HHC staff will be responsible for presenting the management plans for preventing and treating pressure ulcers. The healthcare system is responsible for providing the updated knowledge in pressure ulcer care and ensuring the minimum required level of awareness among the staff (Macdonald, 2017).

HHC staff need periodic updates on pressure ulcer issues. Berlowitz et al (2001) concluded that shifting chronic patient care from hospitals

to the HHC was associated with an increase in the incidence of pressure ulcers due to lack of pressure ulcer awareness. Fraser et al (2017) stressed the importance of continuous educational activities for HHC staff to ensure patient safety. Therefore, there is a general agreement about the role of pressure ulcer knowledge in enhancing the quality of patient care in HHC.

In Saudi Arabia, HHC is a growing medical discipline and has become an essential demand for the population. Services were started by the Green Crescent Hospital in 1980 as a part of their emergency programme (Jastaniah et al, 2004). King Faisal Specialist Hospital and Research Center implemented its HHC service in 1991 under the supervision of a committee to oversee its ongoing planning and implementation, following a pilot study that indicated patients and their families benefited from nursing care and psychosocial support (Jastaniah et al, 2004).

The Ministry of Health (MOH)'s HHC directorate is providing the care for an extended spectrum of patients over an extended area. HHC is playing a significant role in the government health care system. Unfortunately, there are no available data about the knowledge level among HHC staff in pressure ulcer care. This study was a trial to explore undiscussed phenomena in the current western region HHC context in the MOH.

The western region in Saudi Arabia is home to around seven million people distributed over an area of 153,128Km² (Al-Rasheed, 2010) and it consists of 16 administrative centres (Yamin and Mattar, 2016). The capital of the western region is the holy city of Makkah, while Jeddah is the biggest city. The ability to gather clinical representative staff from these areas in one place is hard to arrange. Therefore, the current study investigates the option of having a representative from all of these areas during a training programme centring on modern care for chronic wounds as organised by the general directorate of HHC in the MOH.

Aims

This study aimed to explore pressure ulcer knowledge among a convenience sample of HHC staff in Saudi Arabia. Exploration of pressure ulcer knowledge among HHC staff will guide the efforts of HHC decision makers toward the gaps in pressure ulcer training programmes. Therefore, the research

questions were "what is the pressure ulcer knowledge among the HHC staff?" and "what are the priorities for the coming programmes for HHC?" This study aimed to highlight the importance of knowledge levels in the HHC system. Participants were recruited from HHC settings in the western region of Saudi Arabia during their meeting in Jeddah city for training purposes.

Methods

A total of 23 participants returned the survey from 34 original surveys distributed in April 2018. The participants received the knowledge assessment tools during an educational workshop conducted in the western region of Saudi Arabia organised by the HHC directorate of the MOH.

The study used the pressure ulcer knowledge and assessment test (PUKAT) to evaluate the level of pressure ulcer care being administered (Gunningberg et al, 2015). PUKAT comprises 52 questions, 47 of them statements requiring a true or false answer followed by five multiple-choice questions (Sving et al, 2016). The questions measure the participant's level of knowledge across six central themes: aetiology and development of pressure ulcer, classification, and observation, nutrition, risk assessment, prevention of the magnitude of pressure and shearing, and prevention by the reduction of the duration of pressure and shearing (Beeckman et al, 2010).

The tools presented for the first time in Ghent University, Belgium, and have been tested in several studies all over the world (Manderlier et al, 2017). PUKAT shows high validity and reliability in building a general understanding of the level of participants for the issues related to pressure ulcer knowledge (Beeckman et al, 2011). The current research chose this tool to evaluate the staff knowledge level and provide a general framework for the required pressure ulcer training courses for HHC staff.

The HHC directorate approved the study through the specific Institutional Review Board (IRB) committee as an improvement project to evaluate HHC educational needs. The study presents the overall knowledge level with much more focus on the gaps and areas for improvement in the required training for HHC staff.

Results

The results in *Table 1* show the average age of all participants was around 31 years old

Table 1. Demographic characteristics part one.

	Mean	Standard deviation	Number of missing value
Age	31.7	31.7	2
Experience	7.7 Years	7.7 Years	1
Experience in HHC	4.68	4.68	1
PUKAT result	51.53 %	51.53 %	0

Table 2. Demographic characteristics part two.

	Diploma	BSN	Master	PhD	
Educational degree	56.3 %	30.4%	8.7%	4.3%	
Professional	Nurse technician	Nurse specialist	General practitioner	Others	Missing
	30.4%	34/8%	26.1%	4.3%	0.3%
Gender	M		F		
	39.1%		60.9%		
Country of highest education	Sudan	Saudi Arabia	USA	Egypt	Missing
	17.4%	56.5%	4.3%	4.3%	17.4%
History of any pressure ulcer training	Yes		No		Missing
	47.8%		47.8%		4.3%

with a standard deviation of 4.5. Almost all participants had 7.7 years' worth of experience in the HHC setting. The average experience of staff in the HHC setting was 4.68 years with a standard deviation (SD) of 2.57. The results also show the average score achieved by participants was 51% of questions answered correctly.

Furthermore, the study showed that 56.3% of participants hold diploma degrees, 30.4% had bachelor degrees, 8.7% master's and one participant holds a PhD degree (4.3%). The results also show that 30.4% of participants were classified as technicians and 34.8% as a nurse specialist as seen in *Table 2*. Also, the majority of participants were females (60.9%) with a higher education degree from Saudi Arabia, while almost half of participants had not attended any educational activities in pressure ulcer care (47.8%) [*Table 2*].

Table 3 shows the percentages of correct answers for each question. Question numbers 1,2,6,16,20,21,23,25,26,28,29,32,41,42 and 43 all indicated a satisfactory percentage of correct responses (more than 80%).

On the other hand, the results also underline an opportunity to improve the knowledge level of participants in terms of the issues related to treatment and prevention as presented in the question numbers 4,7,8,9,11,12,14,17,19,22,27,31,33,34,37,38,39,40,49,50 and 51 (percentages of correct answers to these questions was below 50%).

Table 3 also shows that the participants are utilising traditional treatment methods and are not aware of the new pressure ulcer treatment guidelines from 2014 (National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance, 2014).

Discussion

The quality of pressure ulcer management is playing a significant role in reflecting the quality of care offered in the HHC setting (Elliott, 2011). Therefore, the healthcare system should provide a comprehensive set of policies and procedures to maintain evidence-based practices for pressure ulcer care (Beeckman et al, 2011). HHC staff need to have a sufficient grounding in the methods of pressure management (Padula et al, 2015).

This study underlined a lack of updated knowledge among HHC staff in relation to pressure ulcer aetiology, pressure ulcer classification and pressure ulcer prevention. Therefore, there is an urgent need to create comprehensive pressure ulcer training courses to address these issues. The training should focus on updating staff knowledge of pressure ulcer prevention. Question numbers 14 and 17, which present the procedures for the repositioning of patients on a chair and the usage of donut-shaped devices, received 21.7% and 13% correct answers, respectively. This is a strong indication that staff are applying outdated management modalities for pressure

Table 3. Percentage of correct answers per PUKT question.

Question	% of true answers	Question	% of true answers	Question	% of true answers	Question	% of true answers
1. Stage I pressure ulcers (PUs) are defined as intact skin with nonblanchable erythema in lightly pigmented persons.	100%	14. Donut devices/ring cushions help to prevent PUs.	13.0%	27. Eschar is good for wound healing.	19.0%	40. Devices that suspend the heels protect the heels from pressure.	34.8%
2. Risk factors for the development of PUs are immobility, incontinence, impaired nutrition, and altered level of consciousness.	100%	15. In a side lying position, a person should be at a 30-degree angle with the bed unless inconsistent with the patient's condition and other care needs that take priority	17.4%	28. Bony prominences should not have direct contact with one another.	100%	41. Shear is the force that occurs when the skin sticks to a surface and the body slides.	100%
3. All hospitalised individuals at risk for PUs should have a systematic skin inspection at least daily and those in long-term care at least once a week.	73.9%	16. The head of the bed should be maintained at the lowest degree of elevation (hopefully, no higher than a 30-degree angle) consistent with medical conditions.	87.0%	29. Every person assessed to be at risk for developing PUs should be placed on a pressure-redistribution bed surface.	100%	42. Friction may occur when moving a person up in bed.	95.7%
4. Hot water and soap may dry the skin and increase the risk of pressure ulcers.	39.1%	17. A person who cannot move him or herself should be repositioned every 2 hours while sitting in a chair.	21.7%	30. Undermining is the destruction that occurs under the skin.	100%	43. A low Braden score is associated with increased pressure ulcer risk.	82.6%
5. It is important to massage bony prominences.	65.2%	18. Persons who can be taught should shift their weight every 30 minutes while sitting in a chair.	56.5%	31. Eschar is healthy tissue.	8.6%	44. The skin is the largest organ of the body.	78.3%
6. A stage III PU is a partial thickness skin loss involving the epidermis and/or dermis.	87.5%	19. Chair-bound persons should be fitted for a chair cushion.	43.5%	32. Blanching refers to whiteness when pressure is applied to a reddened area.	95.0%	45. Stage II PUs may be extremely painful due to exposure of nerve endings.	73.9%
7. All individuals should be assessed on admission to a hospital for risk of PU development.	49.1%	20. Stage II PUs are a full-thickness skin loss.	100%	33. A pressure redistribution surface reduces tissue interface pressure below capillary closing pressure.	26.1%	46. For persons who have incontinence, skin cleaning should occur at the time of soiling and at routine intervals.	78.3%
8. Cornstarch, creams, transparent dressings (e.g., Tegaderm, Opsite), and hydrocolloid dressings (e.g., DuoDerm, Restore) do not protect against the effects of friction.	43.5%	21. The epidermis should remain clean and dry.	100%	34. Skin macerated from moisture tears more easily.	30.4%	47. Educational programmes may reduce the incidence of PUs.	73.9%
9. A stage IV PU is a full thickness skin loss with extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structure.	30.4%	22. The incidence of PUs is so high that the government has appointed a panel to study risk, prevention, and treatment.	47.8%	35. PUs are sterile wounds.	78.3%	48. For which factors in the Braden Scale are you evaluating the patient's ability to respond to verbal command?	56.5%
10. An adequate dietary intake of protein and calories should be maintained during illness.	60.9%	23. A low-humidity environment may predispose a person to PUs.	100%	36. A PU scar will break down faster than unwounded skin.	73.9%	49. Minimally, a patient in the acute care setting should be assessed for PU risk at least every day?	8.6%
11. Persons confined to bed should be repositioned every 3 hours.	52.2%	24. To minimise the skin's exposure to moisture on incontinence, underpads should be used to absorb moisture.	52.2%	37. A blister on the heel is nothing to worry about.	12.0%	50. How often should you, the RN, assess and document skin condition?	26.1%
12. A turning schedule should be written and placed at the bedside.	34.8%	25. Rehabilitation should be instituted if consistent with the patient's overall goals of therapy.	100%	38. A good way to decrease pressure on the heels is to elevate them off the bed.	39.1%	51. What can you, the RN, do when one of your patients has discolouration of the skin (red, purple, blue), indicating pressure?	47.8%
13. Heel protectors relieve pressure on the heels.	52.2%	26. Slough is yellow or creamy necrotic tissue on a wound bed.	100%	39. All care given to prevent or treat PUs must be documented.	26.1%	52. Who is the primary person accountable for patient skin assessment, PU prevention, and documentation?	65.2%

ulcer care. Updating the guidelines required for current and future staff is, therefore, necessary. On the other hand, the educational programme should play a role in terms of educating newly employed staff in HHC, as well as the current staff. The current training programme should be updated promptly to ensure safe practices. The study results show that, currently, unsafe pressure ulcer care is suspected among HHC staff.

The results also indicate that knowledge is presently lacking in terms of pressure ulcer assessment. Question numbers 49, 37 and 31 show that healthcare providers are finding it difficult to determine eschar and blister risk. The percentages of correct answers were 8.6%, 12% and 8.6%, respectively. Therefore, the authors believe that HHC education should be based on international protocols to enhance the ability of HHC staff to differentiate between the different stages of pressure ulcers based on the current guideline and enhance their wound assessment skills.

Furthermore, the study indicates a satisfactory knowledge level in issues pertaining to the role of personal hygiene and the vital role of turning patients every 2 hours for bedridden patients. This is reflected in different questions with the percentage of correct answers being 80% or more. In general, HHC directorates in the Ministry of Health are aware of the importance of pressure ulcer training, and there are constant activities to enhance the pressure ulcer knowledge among the HHC staff.

On the other hand, the study indicates the importance of creating a pressure ulcer competency of care. The competence of care will determine the minimum amount of knowledge, skills and attitudes needed for staff before performing pressure ulcer management.

Limitations

There were some limitations to this study. It was a descriptive cross-sectional study, and there are no further interventions to explore the knowledge level. Also, the limited number of participants (only 23) makes it difficult to expand the analysis and explore the relations between the questions posed and the demographics. Therefore, there is a need to keep progressing the knowledge of HHC staff in terms of pressure ulcer prevention and establish further education initiatives regarding the importance of pressure ulcer issues in the current HHC practice.

Conclusion

Pressure ulcers are a significant problem in the HHC setting. In conclusion, the priorities for HHC pressure ulcer training should focus more on the issues of pressure ulcer aetiology, assessment, and classification, as well as issues of pressure ulcer prevention. In the current cross-sectional study, the results highlight opportunities to improve the staff knowledge level relating to issues of pressure ulcer care. The study shows the urgent need to enhance the ability of HHC staff when assessing pressure ulcers and enable effective prevention measures. On the other hand, the study also flags up the need for an adequate knowledge level relating to issues of personal hygiene for patients and the important role of turning for bedridden patients. WME

Conflict of Interest

The research team declares there is no conflict of interest in this study.

References

- Al-Rasheed M (2010) *A History of Saudi Arabia*. Cambridge University Press, Cambridge
- Beekman D, Clays E, Van Hecke A et al (2013) A multi-faceted tailored strategy to implement an electronic clinical decision support system for pressure ulcer prevention in nursing homes: A two-armed randomized controlled trial. *Int J Nurs Stud* 50(4): 475–86
- Beekman D, Defloor T, Schoonhoven L, Vanderwee K (2011) Knowledge and Attitudes of Nurses on Pressure Ulcer Prevention: A Cross-Sectional Multicenter Study in Belgian Hospitals. *Worldviews Evid Based Nurs* 8(3): 166–76
- Beekman D, Vanderwee K, Demarre L et al (2010) Pressure ulcer prevention: development and psychometric validation of a knowledge assessment instrument. *Int J Nurs Stud* 47(4): 399–410
- Berlowitz DR, Young GJ, Brandeis GH et al (2001) Health care reorganization and quality of care: unintended effects on pressure ulcer prevention. *Med Care* 39(2): 138–46
- Elliott J (2011) Applying pressure ulcer prevention theory to practice. *Nurs Res Care* 13(6): 276–9
- Fraser KD, Sales AE, Baylon MAB et al (2017) Data for Improvement and Clinical Excellence: a report of an interrupted time series trial of feedback in home care. *Implement Sci* 12(1): 66
- Funkesson KH, Anbacken EM, EK AC (2007) Nurses' reasoning process during care planning taking pressure ulcer prevention as an example. A think-aloud study. *Int J Nurs Stud* 44(7): 1109–19
- Gunningberg L, Martensson G, Mamhidir AG et al (2015) Pressure ulcer knowledge of registered nurses, assistant nurses and student nurses: a descriptive, comparative multicentre study in Sweden. *Int Wound J* 12(4): 462–8
- Jastaniah NA, Al-Tayyeb F, Bin Sadeq B (2004) The length of hospital stay of home care patients at King Khalid

- National Guard Hospital, Jeddah, 1999. *Middle East Journal of Family Medicine* 2(5): (page numbers not available)
- MacDonald J (2017) Pressure ulcer education—new ways to educate and motivate. *Wounds UK* 13(2): 77–9
- Manderlier B, Van Damme N, Vanderwee, K et al (2017) Development and psychometric validation of PUKAT 2: 0, a knowledge assessment tool for pressure ulcer prevention. *Int Wound J* 14(6): 1041–51
- National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance (2014) *Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline*. Cambridge Media, Perth
- Padula WV, Mishra MK, Makic MBF et al (2015) Increased adoption of quality improvement interventions to implement evidence-based practices for pressure ulcer prevention in U.S. academic medical centers. *Worldviews Evid Based Nurs* 12(6): 328–36
- Soundappan A, Goodwin T, Greengold R, Siegler E (1997) How to get the most benefit from a changing home health care system. *Geriatrics* 52(10): 83–6
- Sving E, Hogman M, Mamhidir AG, Gunningberg L (2016) Getting evidence-based pressure ulcer prevention into practice: a multi-faceted unit-tailored intervention in a hospital setting. *Int Wound J* 13(5): 645–54
- Yamin M, Mattar R (2016) e-Government in Saudi Arabia—An Empirical Study. *BIJIT* 8(1): 944–9



Writing for the *Wounds Middle East* journal

The *Wounds Middle East* journal welcomes a range of articles relating to the clinical, professional, and educational aspects of wound care. If you have written an article for publication or if you are interested in writing for us and would like to discuss an idea for an article, please email the editor Adam Bushby: abushby@omniamed.com