Barriers to wound debridement: results of an online survey

KEY WORDS
- Tissue Viability
- Debridement
- Online survey
- TIME

This paper presents the results of an online survey that investigated healthcare professionals' knowledge of wound debridement and the techniques used. The survey, using purposive sampling, was distributed to healthcare professionals working within tissue viability services (*n*=252) via Survey Monkey across the UK to investigate healthcare professionals' knowledge of wound debridement and the techniques used. Response rate was 31% representing 77 participants practicing in wound care within various healthcare organisations throughout the UK. The majority of respondents (72; 93.5%) reported that they debrided wounds with seventy one respondents (95.9%) reporting they were aware of the TIME concept of which 52 stated they used TIME in their wound management approach. The findings demonstrate that healthcare professionals are aware of the importance of preparing the wound bed for the healing process with the majority of respondents using the TIME (Tissue, Infection/Inflammation, Moisture, Epithelial Edges) concept to support their assessment of wounds. However the knowledge of wound debridement was limited. There was no consensus regarding whether or not health professionals recognised the differences between the terms desloughing and debridement. The majority of healthcare professionals identified time and lack of knowledge and skills as barriers to effective wound debridement techniques.

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Optimising moisture levels of the wound bed provides the ideal environment for wound healing to progress; a hydrated wound bed allows for wound cleansing through the promotion of autolytic debridement. Removal of devitalised tissue via a moist healing environment is an effective alternative to surgical and enzymatic debridement (Ousey et al, 2016). Debridement is the removal of non-viable tissue from the wound bed which assists the conversion of the molecular and cellular environment of chronic wounds to resemble that of acute wounds promoting healing (Schultz et al, 2003). Debridement helps to reduce bacterial burden within the wound, controls on-going inflammation and malodour whilst encouraging formation of granulation tissue thus promoting wound healing (Sieggreen and Maklebust, 1997). There are a range of wound debridement techniques that healthcare professionals may employ including autolytic, enzymatic, hydro surgical, ultrasonic, bio-debridement, mechanical, monofilament polyester fibre pads, sharp and surgical. Effective and accurate assessment of the wound and patient is required prior to commencing debridement. Using the TIME (Tissue, Infection/Inflammation, Moisture, Epithelial Edges) concept (Schultz et al, 2003; Leaper et al, 2012) practitioners can accurately assess clinical needs through a structured framework. Although debridement is often referred to as a form of wound bed preparation it is important that the wound edges and peri-wound skin are also considered, as such the definition of debridement should encompass removal of bioburden from the wound bed and *'liberation of wound edges as well as of peri-wound skin'* (Strohal et al, 2013, p:4). It is important that the decision to debride and the method of debridement selected is the most effective for the patient with the practitioner possessing the appropriate skills and knowledge to undertake the intervention safely and competently.

Table 1. Band of respondents

Answer options		
Band	**Response**	**Response count**
4	0.0%	0
5	1.3%	1
6	10.4%	8
7	58.4%	45
8a	23.4%	18
8b	3.9%	3
8c	1.3%	1
Other	1.3%	1

Table 2. Respondents' job titles

Answer options		
	Response percent	**Response count**
Tissue viability specialist or consultant nurse	72.3%	55
Staff nurse	1.3%	1
Community nurse	1.3%	1
Other	25.0%	19

Table 3. length of time spent in wound care

Answer options		
	Response percent	**Response count**
Up to 12 months	1.3%	1
Between 12 months and 5 years	11.7%	9
Between 5 and 10 yeras	20.8%	16
Over 10 years	66.2%	51

Table 4. Type of Trust worked for

Answer options		
	Response percent	**Response count**
Acute trust	28.6%	22
Community Trust	36.4%	28
Joint Acute and Community Trust	28.6%	22

Conflict of interest

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METHOD

This online survey, using purposive sampling, was distributed to healthcare professionals working within tissue viability services (*n*=252) via survey monkey across the UK to investigate healthcare professionals' knowledge of wound debridement and the techniques used. Ethical approval to distribute the survey was received from the School of Human and Health Sciences Research and Ethical Panel at the University of Huddersfield. A total of 77 responses to the survey were received (31%). All but 5 respondents practiced in England, 3 in Scotland and 2 in Wales.

RESULTS

Most items were answered by all 77 respondents: a few items were omitted by a small number of respondents. Only the last item (eliciting opinions on the best method of debridement) was subject to a substantial number of missing responses. All item percentages refer to those providing a valid answer to that item.

DEMOGRAPHICS

The majority (*n*=45; 58.4%) of responses were from Band 7 nurses, with most of the remainder (*n*= 22; 28.6%) from Band 8 nurses (*Table 1*).

Nearly three quarters of respondents reported that they were tissue viability nurses or consultant nurses *(Table 2*). Additionally, of respondents reporting their job title as "other", a further 6 respondents included tissue viability as part of their role; hence effectively the proportion of tissue viability nurses represented in the sample was around 80%. Seven respondents who answered "other" to this question stated their job to be a podiatrist.

Respondents were asked how long they had worked in wound care. About two thirds had worked over 10 years: with most of the rest working between 5 and 10 years (*Table 3*).

Respondents were asked about the type of Trust in which they were employed. Acute, community and joint acute/community trusts were represented in approximately equal proportions (see *Table 4*).

KNOWLEDGE OF DEBRIDEMENT TERMS

Respondents were asked about their knowledge of the terms "desloughing" and "debridement". All

respondents considered removal of soft devitalised tissue to represent debridement whereas 61 respondents (80.3%) considered this represented desloughing. Removal of hard necrotic tissue was considered to represent debridement by 7 respondents (9.2%) and considered to represent desloughing by 66 respondents (86.8%). Removal of hard devitalised tissue was considered to represent debridement by 17 respondents (22.4%) and considered to represent desloughing by 72 respondents (94.7%).

AWARENESS OF TIME CONCEPT

Seventy one respondents (95.9%) reported to be aware of the TIME concept, with 52 reporting that they used TIME in their wound management approach (73.2% of those who were aware of the concept). Of these respondents, the majority (above 80%) used the TIME concept to assess the wound bed, provide a structured and systematic approach to the management of non-healing wounds, identify barriers to healing and wound management planning (*Table 5*). A small number of respondents chose other reasons; many of which related to teaching or training purposes, these included not having undertaken debridement courses and not feeling competent to debride wounds.

EXPERIENCE OF WOUND TREATMENT

Seventy two respondents (94.7%) reported that they treated both acute and chronic wounds. Four respondents (5.3%) reported that they treated chronic wounds only.

Respondents were asked what sort of wounds they treated (more than one response could be selected). Venous leg ulcers, mixed ulcers, pressure ulcers and surgical wounds were all treated by over 80% of respondents, with smaller numbers treating diabetic foot ulcers and burns (*Table 6*). Amongst the "other" types of wounds treated, the most common responses were fungating wounds and skin tears.

EXPERIENCE OF WOUND DEBRIDEMENT

The majority of respondents (72; 93.5%) reported that they debrided wounds. Of the 5 respondents who reported that they did not debride wounds, 4 cited lack of experience or education in the

Table 5. Reasons for using TIME concept (percentages refer to respondents using TIME)

Answer options	Response percent	Response count
To assess the wound bed	80.8%	42
To provide a structured and systematic approach to the management of non-healing wounds	82.7%	43
To identify barriers to healing	82.7%	43
Wound management planning	92.3%	48
Other reason(s)	26.9%	14

Table 6. Types of wounds treated

Answer options	Response percent	Response count
Diabetic foot ulcers	75.0%	57
Venous leg ulcers	81.6%	62
Mixed ulcers	82.9%	63
Pressure ulcers	92.1%	70
Burns	59.20%	45
Surgical wounds	89.5%	68
Other	35.5%	27

Table 7. Types of debridement used (percentages refer to those respondents who debride wounds)

Answer options	Response percent	Response count
Autolytic	93.1%	67
Enzymatic	47.2%	34
Mechanical	72.2%	52
Wet-to-dry	8.3%	6
Pad	62.5%	45
Surgical	47.2%	34
Larvae	86.1%	62

Table 8. Preferred means of debridement		
Answer options		
	Response percent	**Response count**
Autolytic	23.4%	15
Enzymatic	0.0%	0
Mechanical	17.2	11
Wet-to-dry	0.0%	0
Pad	6.3%	4
Surgical	35.9%	23
Larvae	17.2%	11

Table 9. Response rate to survey questions		
Answer options		
	Response percent	**Response count**
Grade/band	100.0%	77
Job title	98.7%	76
Length of employment	100.0%	77
Location	100.0%	77
Type of trust	100.0%	77
Awareness of TIME concept	96.1%	74
Types of wounds treated	98.7%	76
Types of debridement used	100%	72
Preferred means of debridement	83.1%	64

necessary techniques, and one cited lack of time. Whether they debrided or not, almost all respondents (76; 98.7%) agreed that debridement aids the wound healing process; and all respondents agreed that if they had a simple but effective method of debridement that aided wound healing, they would use that method.

Respondents who had reported that they debrided wounds were asked about the method(s) they would use for wound debridement (more than one option could be chosen). The most common methods used were autolytic and larvae, both selected by over 85% of respondents. Mechanical and pad debridement were also used by over 60% of respondents, with other methods being used less frequently (*Table 7*).

Respondents were asked what would be the preferred method of wound debridement. Responses were received from 64 respondents. This item had the highest proportion of missing data (17%) of all items.

The most popular method quoted was surgical debridement, selected by about one third of respondents providing a valid answer to this question, followed by autolytic, mechanical and larvae methods; each of which was selected by between 17% and 24% of respondents (*Table 8*). No respondent selected enzymatic or wet-to-dry debridement as their preferred method.

DISCUSSION

Debridement is defined as being instrumental in reducing devitalised tissue and cellular burden found in chronic wounds (Schultz et al, 2003) and reduces dead, infected or compromised tissue, cells and foreign material from a wound bed (National Institute for Health and Care Excellence [NICE], 2001). It is an umbrella term which can comprise a single clinical action or the use of multiple methods synergistically or sequentially that facilitate removal (NICE, 2001; Ayello and Cuddigan, 2004).

To achieve an acceptable rate of healing, wounds must be properly cleansed and debrided/desloughed (Milne, 2015). The survey respondents referred to desloughing and debridement, with no clear consensus as to whether these were two distinct terms. Key opinion leaders, at the European Wound Management Association Conference (2015), debated whether or not desloughing should become a recognised term that would sit alongside debridement and encourage clinicians to focus more on the rapid removal of slough (Cowan, 2015).

Slough and necrosis have been defined as distinct entities (Percival and Suleman, 2015), with slough produced as a result of the metabolic effort and inflammation required to remove the necrosis. Milne (2015) argued that the prevailing view of clinicians is that the only

difference between deslouging and debridement is moisture; i.e. slough is thought to be rehydrated necrosis with the presence of slough in a wound being perceived as a progression towards the removal of necrosis. She suggested that this confusion over the two terms has been exacerbated by the concept of applied wound management, which suggests a progression from black to yellow tissue. Percival and Suleman (2015) proposed that best practice for slough removal should include disruption of the outer membrane of slough with surfactants; rapid removal of slough with dressings; consideration of the use of antimicrobials and the adoption of therapies that prevent reoccurrence or adoption of maintenance therapies to remove its build up at dressing changes.

During the 2015 European Wound Management Association Conference, White stated that necrotic tissue is usually firmly attached to a wound, whereas slough generally is not. This led to the question: is there a difference between debridement and desloughing? The suggested differences between the two terms remains an area for debate with no clear consensus as to whether or not there is a difference. Nonetheless, both necrosis and slough have been linked to wound chronicity and must be removed to stimulate healing (Shultz et al, 2003).

It was interesting to note that although 71 respondents were aware of the TIME concept only 52 reported using this as a means of assessing the wound bed. It is unclear as to how the 52 respondents assessed the wound bed and this requires further investigation. The majority of respondents agreed that debridement aided the wound healing process but lack of time, knowledge and appropriate skills could prevent them from undertaking the intervention.

LIMITATIONS OF THE SURVEY

The one limitation identified from this online survey was the low response rate. Whilst the survey was distributed to a sample of 252 healthcare professionals, the response rate was 77 (31%). However, most questions were answered by all, or almost all respondents; with a small minority of respondents choosing not to select a preferred means of debridement (*Table 9*), this may be due to lack of confidence with selection of an optimum debridement method.

SUMMARY

This survey investigated the knowledge and debridement technique used by healthcare professionals throughout healthcare organisations in the UK. It is evident that respondents were aware of the importance of preparing the wound bed for the healing process, with the majority of respondents using the TIME concept to assist in their assessment.

Whilst the respondents recognised the importance of removing devitalised tissue, their understanding of debridement and desloughing was limited. Continued education and the development of skills to enable practitioners to safely and effectively debride wounds is essential; however funding cuts to education and limited study make it difficult for practitioners to secure time away from clinical practice.

This survey calls for a more in depth exploration of practitioners' knowledge regarding debridement and potential barriers to undertaking this critical aspect of wound bed preparation to promote wound healing. WUK

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