Exploring healthcare professional's perceptions of the real-world costs of wounds

KEY WORDS

- Burden of wound care
- Holistic wound management
- Real-world
- Shared care
- Wound care

Background: Wound care is a significant financial burden in healthcare and the cost of wound dressings are reported as explicit expenditures. However, there are many financial aspects associated with wound dressings that are less understood, but play an important role in understanding how to manage the wound care burden. **Aim:** This study explored the real-world costs of wound dressings for the management of acute and chronic wounds. **Methods:** A round table discussion with 6 healthcare professionals with expertise in wound care was undertaken. **Results:** Thematic analysis identified four main themes (supported by eight sub-themes); holistic wound management; wound dressing expenditure; specialists and generalists in wound care; and patient factors. **Discussion:** The real-world cost of managing wounds encompasses a variety of factors that are frequently underrepresented. A holistic approach is essential for patient health and wellbeing and managing patient expectations of wound healing. While wound dressing costs should be considered, the focus should be on choosing the right product for each patient. Simplifying the number of products available to clinicians is an important aspect of supporting individuals to treat and manage patients in their care.

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Wound treatment, prevention and management are a commonly reported financial burden to the National Health Service (NHS). The work by Guest et al (2020), described the increasing cost of the management of chronic wounds is often cited as exemplifying this burden. Chronic wounds are defined as those that do not follow the normal healing trajectory (Frykberg and Banks, 2015). Many sources of financial expenditure, such as nursing time, salaries, the cost of dressings and equipment are explicit and readily acknowledged, however there are some less obvious costs that contribute to the "real-world" costs associated with wound care. Wound dressings, in particular, have been linked with less explicit financial burdens; unnecessary dressing changes, inappropriate dressing selection and use (leading to referrals to specialist services and inadequate wound management practices), as well as the costs of the dressings themselves, are some of the factors that are less easily reported and understood. Frequent dressing changes, for example, has been associated with increased patient pain, delayed wound healing and increases in wound size, in addition to increased nursing time associated with application and removal (Rippon et al, 2012; Brindle and Farmer, 2019).

Failure to optimise wound dressing performance can result in financial and clinical burdens. Unnecessary dressing changes have been attributed to a nurses' lack of confidence and competence, where they are undertaken in response to an individual need to inspect the wound, rather than a clinical one (Blackburn et al, 2019). Other research has highlighted the effect that such practices, nurse perception of knowledge and education, and confidence to

manage patients' wound healing (Fletcher, 2007; Eskilsson and Carlsson, 2010) can have on clinical practices around wound dressings. Other aspects of wound care including nurses travel time in the community setting, the impact on patient quality-of-life and the patient experience, are additional costs that are not necessarily considered but clearly have an influence on effective clinical practice and care. Exploring healthcare professionals perceptions of the "real-world" cost of dressings is fundamental to changing practice and reducing the financial impact.

Aims and objectives

The aim of this study was to explore healthcare professionals perceptions of "real-world" costs of wound dressings for the management of acute and chronic wounds.

METHODOLOGY

A round table discussion involving healthcare professionals with expertise in wound care was undertaken, which lasted approximately two hours. Participants were recruited through an advertisement on the Tissue Viability Network Facebook page. Interested participants were provided with an information sheet and consent form; written consent was obtained from all participants before the discussion took place. Ethical approval was obtained through The University of Huddersfield's School Research and Ethics Committee. Participants were offered a £50 Amazon voucher as a thank you for their time. The discussion centred around exploring the participants' thoughts and experiences about what they considered to be the real-world costs associated with wound dressings.

Data analysis

The round table discussion was audio and video recorded using Microsoft Teams and the recording was transcribed by the research team. The transcript was entered into NVIVO qualitative data analysis software and the data examined using thematic analysis to identify patterns and common themes among the participants' experiences. Common high level themes and appropriate sub-themes were identified to describe the experiences emerging from the data.

RESULTS

We recruited six participants, including staff working in both the acute and community setting with a range of roles and experiences including tissue viability nurses, district nurses, staff ward nurses and key opinion leaders.

The analysis revealed four main themes that described the real-world costs associated with dressings in wound care: holistic wound management; wound dressing expenditure; specialists and generalists in wound care; and patient factors. The main themes were also supported by several sub-themes which are described below (*Table 1*).

Theme 1: holistic wound management

Holistic wound management incorporates a comprehensive, in-depth wound care strategy, where the focus is on the patient's health and wellbeing. It was a central discussion point for the participants who felt that adopting this model of care would address several of the limitations of wound care practices, particularly relating to dressing choice, dressing usage and the associated financial burdens.

Table 1. Data analysis themes and sub-themes

Theme	Sub themes
1: Holistic wound management	The importance of the holistic approach Effective wound assessments and wound healing
2: Wound dressing expenditure	Wound dressing choice and selection Wound dressing changes
3: Specialists and generalists in wound care	Staff education
4: Patient factors	Patient self-management Patient expectations of wound healing Patient-related costs

The importance of the holistic approach

The group highlighted that the holistic model of care was currently lacking within wound care in favour of a focus on the effectiveness of dressings and their ability to heal wounds. Participants believed that wound healing would be an inevitable consequence if other aspects of patients' wellbeing, such as mobility, nutrition, and mental health, were the primary focus of care. However, participants stated that, often, emphasis on choosing the best wound dressing was prioritised over patient health and wellbeing. Participant 1 described how dressings are not a focal point of their clinical practice and explained the benefits of a holistic approach to wound management in addressing patient quality-of-life and reducing some of the financial implications associated with inadequate dressing choice and wound management.

> *"We're not interested in the dressings, what we're interested in is getting the patient better, getting the patient mobile, getting the patient back to being independent and those are the things that make the patient heal. If you can get a patient from being stuck in their chair to walking round the garden every day, actually their leg ulcer is probably going to heal irrespective of what dressing product you put on..."* Participant 1

There was a disconnect between the participants' beliefs about appropriate wound management and the healthcare focus on suitable dressing usage. They acknowledged that choosing the correct dressing does have an impact on wound healing time, but felt the most important aspect of care was holistic management.

> *"I manage a specialist wound healing clinic and I don't really remember the last time we talked about dressings. The primary focus is holistic assessment, is nutrition, is hydration, is exercise, mobility, smoking, diet, referral to the correct people... I honestly can't remember a conversation about dressings."* Participant 6

Effective wound assessment and wound healing

A holistic approach encompasses an effective and appropriate wound assessment, which many of the participants felt was also lacking from current models of care, meaning many patients are not receiving the right treatment at the right time. This has an impact on the real-world costs of dressings, as inappropriate assessment typically results in inappropriate dressing usage.

> *'I suppose it goes back to wound assessment doesn't it and the assessment is the key and I say to patients they're only a fancy plaster, it's what you do as well, you know, we can't do all the job, it's a two-way thing.'* Participant 3

Wound dressings were also described in terms of the cost to the patient and ensuring the patient has a good quality-of-life. While the emphasis from an overall healthcare perspective is reducing the consumable cost of dressings, the participants felt that the wider cost is to the individual patient living with a wound, which is often overlooked in favour of reducing the cost of specific dressings. Participant 6 explained how the focus of their clinical practice is patient wellbeing:

> *'So I suppose my first thing always comes into cost is time to heal. So reducing the time to heal costs. So we place a lot of focus on dressing costs and consumable costs, but the cost to the patient and their quality-of-life and the time that they live with that wound to me, I always find is a huge thing that we consider'* Participant 6

Theme 2: wound dressing expenditures

Several implicit and explicit costs associated with dressing usage in the clinical setting were identified throughout the discussion including dressing choice and selection and frequency of dressing changes.

Wound dressing choice and selection

Wound dressing expenditure is an inevitable factor of the management of chronic wounds and the participants narrative emphasises dissatisfaction with a healthcare focus on the cost of the dressings themselves rather than dressing performance or dressing suitability for wound status or wound type. Cost sometimes take priority over performance and there were frustrations about how a more expensive dressing

may be more cost-effective long term due to its healing capabilities or suitability for the wounds; participant 6 described the challenges associated with this approach in the community setting.

'**Interviewer:** *in general, do you think people sort of think about using a cheaper dressing versus a more expensive dressing?*
Participant 6: *Definitely and the balance and the challenges that you have with, you know, the balance between saving money on a unit price, so when you're talking to your meds management and your pharmacy people and the challenges of cost versus outcome is a really difficult one isn't it and providing that evidence that something will be cost effective in the long run...'*

Inconsistencies in the type of dressing used for patients were also reported as a real-world cost of dressings in the community and there were examples of how different nurses favour different products for the same patient. Consequently, many patients are left with numerous un-used wound dressings in their homes; a real-world cost not often acknowledged.

'You know, so you look at some patients with a different dressing depending on which nurse goes in every single time, or multiple layers of dressings, and sometimes those patients still do quite well because they're younger or they're healthier. But if you look at the cost of products that's being used on them and the cost of the residual products left in the home because each nurse changes their mind every single time, you know, that huge cost' Participant 1

Where patients have to pay for their own dressings (in private care or through prescription costs for example), cost is a fundamental aspect of nursing and patient decision making around dressing choice. The quote from participant 4 (below) describes how, in their clinical practice, where patients have to purchase their own dressings, patients will often opt for the cheapest product rather than one that has been recommended, which would provide optimal wound healing.

'They will point blank refuse to go and get it from a pharmacy, because they have to buy it at a pharmacy, because its private.' Participant 4

Selecting the appropriate wound dressing presents its own problems and contributes to the real-world cost of dressings. The vastness of products available with differences in the claimed wound healing rates, performance, and longevity, contribute to the complexities healthcare professionals face when choosing a dressing. Participants felt that this overcomplicated wound care contributes to the real-world cost because nurses are faced with having to prioritise their reasons for dressing selection. Staff in more junior roles, or those with less experience, are thought to be overwhelmed with making such decisions and often resort to using their 'preferred' dressing that they feel confident using, which is not always appropriate.

'I think the other thing is people aren't really thinking about dressing selection. So you know, the more experienced of us can tweak our dressings in order to maybe make it more appropriate to change it more frequently or less frequently, dependent on our demands. So you know, if I was going to see a patient more frequently, I might make do with a slightly cheaper dressing, or a slightly cheaper product, thinking well actually I'm going to take that off later, so you know, it's just got to keep the wound covered and moist, but I don't really need all singing all dancing because someone is coming to see it tomorrow, or because I'm sending them to the GP for a review... but I think that the less skilled clinicians don't have the knowledge and the education often, even of the product that they're using, let alone being able to flex the products and the system and what they're doing halfway through a patient's care. Participant 6

Simplifying and reducing the amount of choice was considered one way of addressing this issue.

'No I genuinely think a formulary should be maximum four products. Something to wet things, something to dry things, something

that's sticky and something that's not sticky.' Participant 1

'If you just literally draw the line through it and say go back to basics, it makes a huge impact' Participant 4

Wound dressing changes

The frequency of dressing changes and the factors that determine when a dressing might be changed were points for discussion. The demands of the community service mean that frequent dressing changes are inevitable but the financial expenditure of this could be mitigated by appropriate dressing selection (through using a cheaper dressing that may be changed daily, for example). There was a discussion about less experienced nursing staff being less confident about their decision making and therefore making more frequent dressing changes, which contributes to the real-world costs. Unnecessary dressing changes are also evident in the acute setting, with participants describing how some clinicians may want a dressing removed so they can 'look' at a patient's wound.

"When I worked in the Acute Trust, a hundred percent agree with (P1), they would get taken off in A&E, then on AMU, then on the Surgical Ward, then the next day on the ward round, then the next day and there was no sort of rhyme or reason." Participant 6

"...some clinicians are more experienced, some clinicians have more skills and knowledge about dressings and those that probably are less experienced or less confident will want to remove a dressing because, you know, or as one of you just mentioned, oh that's not working, let's change it." Participant 2

Theme 3: specialists and generalists in wound care

A fundamental aspect of the real-world costs of dressings focuses on the differences in clinical practices between specialists and generalists in wound care. Generalists, such as community nursing staff and healthcare assistants, often manage patients with chronic and acute wounds in the absence of specific knowledge, education or training on dressings and appropriate wound management. This was described as contributing to the real-world dressing costs and the participants described ways to overcome this burden.

Staff education

The participants felt that generalists may feel 'deskilled' compared with their specialist counterparts feeling ill-equipped to make decisions. Rather than teaching all staff about wound care, providing basic education around the signs of normal wound healing, basic dressing usage and when to refer to specialist services would prevent generalists feeling deskilled and reduce escalation to specialist services for chronic and acute wounds that have failed to heal due to inappropriate decisions.

*"***Participant 4:** *And its demoralising for the district nurses as well.*
Participant 6: *Its awful, they [the generalist] absolutely hate it, they hate it when they have to ask for assistance because a wound is failing to progress.*
Participant 4: *I work so closely with my district nurses, they're my team, I'm literally sitting within the district nursing service and they want to do the right thing. They 1) won't necessarily know how to do it, 2) again time, sixteen, seventeen patients, how do you fit in more than what you're asking me to do?"*

Empowering generalist nursing staff to make decisions about when to refer to specialist services or feel confident in making decision about wound care practices was believed to reduce some of the real-world costs. Providing these staff with specific knowledge on how to undertake basic wound care tasks such as dressing changes and correct product use, was considered one way of overcoming this problem. However, one participant stated:

"...and it's like well you've done of a lot of education, the education has not made any difference, stop doing education, do something different because, or at least do different education" Participant 1

Using unregistered staff who are increasingly required to care for patients with wounds was a discussion point for the participants who felt this staff group could be upskilled to confidently provide fundamental wound care.

"For us it can be capacity sometimes, so it can be a lot of unregistered staff. However, they're not always meant to see an unregistered clinician. But at the moment due to the capacities in the community, it can be unregistered staff quite often (who manages the wound care). However, to be honest sometimes when you speak to the unregistered, they can be better than the registered." Participant 3

However, other participants felt that a dependence on unregistered staff increased their workload and had associated cost implications, due to increased referrals to specialist wound care services that could be undertaken by the registered generalist practitioner. All the participants thought upskilling unregistered staff has the potential to reduce inappropriate referrals and consequently reduce some of the financial implications associated with specialist wound care services. Participant 2 warned that the presence of a specialist service may lead to increases in referrals, despite education, stating that:

…You've got those that refer anything and everything, you know, because oh we've got a wound service or we've got a leg ulcer nurse specialist, or we've got a wound care specialist. So they don't even think about what they're doing, you know and they refer everything and then we have the opposite where they've got that service, or we see referrals six months down the line, twelve months down the line." Participant 2

Participant 4 concurred saying:

"…their reliance on us as the specialist has taken over and the head in the sand avoidance is the easiest way to do it because 'I'm scared of this (wound care) now." Participant 4

Theme 4: patient factors

A number of patient-level factors were identified as contributing to the real-world costs of wound dressings. Comorbidities, involvement in self-management and patient's expectations, were all considered as potentially contributing factors that are often not recognised as having a financial impact.

Patient self-management

Patient self-management was a common theme in the dialogue. The recent drive for patients to take an active role in managing their wounds has been amplified by the COVID-19 pandemic and is evidenced by more patients being involved in virtual consultations and self-management practices rather than face-to-face contact (Brown, 2020). This promoted discussion around the cost implications associated with this approach.

There are undoubted benefits to encouraging patients to take a proactive approach to their own wound care. However, there were also concerns around appropriate dressing application and removal when patients performed their own dressing changes. There were discussions surrounding patients changing their dressing too frequently, meaning nurses had to actively restrict the number of dressings they provided, or found that patients purchased more dressings so they could change them more often. This results in a consumables cost of the dressings themselves, but also contributes towards delayed wound healing (due to frequent application/removal), and the potential for increased community nursing visits to address delayed wound healing.

"I think self-care is a really interesting one with cost because you think it's going to save cost because the patients going to do it, but actually I find most patients change it too frequently." Participant 6

"So they've got supported self-care, so the practice nurse gives them, a bit like you (Participant 6), I might be a bit stingy and only give them [unclear audio], but then they go online and they've told me they go on Amazon and they'll order them and they'll order them so they can change them more frequently, so that's again a cost we don't see do we?" Participant 2

There was also some discussion around the

hidden costs of treating patients in their own homes such as using the patient's water, electric and consumables such as towels and blankets.

Patient expectations of wound healing

Living with a chronic wound has become a way of life for some patients and the participants conveyed examples of patients who had no expectation of their wound healing. This also has a real-world cost not often considered as these patients are content continuing with attending specific clinics and receiving nursing visits without taking active steps for their wound to heal.

> *"Do we need to add into that mix as well about managing the expectations? Because touching on that, our expectations as tissue viability or wound care compared to the staff nurses and the healthcare assistants out who are running around compared to the patient and their family members, that expectation of outcomes and experience, I think that's got a huge impact on the overall management and cost and expectation of dressing management and wound management."* Participant 4

> *"They see that with the Leg Club patients, it's become their life because they socialise with people, at least in Leg Club they encourage them to come back and maintain the social contact when they've healed."* Participant 1

Managing patients' expectations and uncovering what is important to them was thought to have significant cost implications for wound management.

Patient related costs

Some staff also discussed patient choice and cited examples where some patients from more deprived backgrounds had to make lifestyle choices to prioritise health and wellbeing. The cost to the patient for ongoing wound treatment and care was felt to be a hidden cost, not readily acknowledged or recognised when considering the burden of wound care. Maintaining a basic standard of living is priority for some patients who are unable to travel to wound clinics for treatment.

> *"We have patients that have said to us recently that they have to make a choice when they come to clinic whether or not they buy an item of food or they pay for the taxi or the bus because they don't have the money."* Participant 5

The participants felt the financial burden to the patient was a key factor in understanding the real-world cost of wound dressings and one that should be incorporated into models of care to optimise patient outcomes and experiences of care.

DISCUSSION AND CONCLUSIONS

Real-world costs in wound care comprise of a multitude of different factors that are often embedded within other, more obvious economic burdens such as the cost of specific dressing products or staff costs. Wound dressing costs were a consideration for the participants in this discussion, but it was evident that they felt the focus should be on what is the 'right' product for each patient. An increasing number of available dressings was thought to complicate wound care and subsequently increase dressing-associated costs, especially for generalists, who may not feel confident making decisions about what dressings to use, or when to change to a different product depending on the patient's wound healing status and individual needs. Some nurses, therefore, are thought to continue using products they are comfortable with and trusted, rather than one that is specifically suited to an individual patient's wound and healing rate. One mechanism of overcoming this problem is limiting the number of dressings available to nurses and going 'back to basics' where dressing type, usage and availability is simplified.

Participants acknowledged that frequent dressing changes contributed to the real-world cost of wound management and that dressings were sometimes changed unnecessarily, commonly in the community setting (Blackburn et al, 2019), but that this was inevitable in wound care services due to service demands. There were also discussions around inconsistent product use, where different nurses treating the same patient would use a variety of different dressings because of individual preferences. Such practices are thought to increase dressing-related costs as dressing wear time

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performance may not be optimised and may be changed too frequently. There were also accounts of inappropriate dressing changes in the acute setting, where senior clinicians would want a dressing removed so they could 'have a look' at the patients wound, which was considered an added cost of wound care not often acknowledged.

Wound dressing costs were low priority in favour of a holistic approach to wound management, which focuses on improving patient outcomes, quality of life and experiences of care. Undertaking an effective wound assessment is preparatory to this approach and was described as empowering nurses to make decisions about when patients might need referring for specialist treatment. Education and training is central to this, participants felt that this should be tailored to enable all staff to have some basic knowledge of wound care and recognise the signs and symptoms of normal wound healing and appropriate use of dressings, all of which would have a positive impact on the financial burdens.

A number of patient-related factors were discussed as real-world costs of wound care in the community, where patients involved in self-management activities may change their dressing too regularly, have a 'stock' of wound dressings that are provided to them by the nurses, or purchase different dressings online rather than their allocated wound dressing which may not be as effective. This overuse of dressings often leads to a further increase in nursing visits when the incorrect product has been used leading to, for example, delayed wound healing, increase risk of leakage, leading to moisture-related damage (e.g. maceration). There were also discussions around the financial implications of using facilities such as water and electricity in the patient's home, which was a cost not considered.

The real-world cost of managing wounds encompasses a variety of factors that are frequently underrepresented when considering the cost of wound care in healthcare. This round table discussion has shed light on some of these less obvious costs and described potential facilitators to addressing some of these problems. A strategic and holistic approach to wound management is essential for managing patient expectations of wound healing and ensuring patient health and wellbeing is part of the overall focus in wound care. Focusing on simplifying the number of products available to clinicians is an important aspect of supporting individuals to treat and manage patients in their care. WUK

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