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RESEARCH ARTICLES

Facilitating personal hygiene choices for renal patients with central venous lines: a multi-phase study

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ABSTRACT

This study explored personal hygiene options of renal patients that maintain the integrity of central venous catheter exit site dressings between dialysis sessions.

Background: Infection is a major life-limiting risk for patients undergoing haemodialysis via a central venous catheter. Meticulous attention to keeping the exit site dressings clean and dry is an essential defence in preventing local and systemic infections. It is difficult to maintain the integrity of water-resistant dressings in tropical environments.

Study Design: A three-phase exploratory study was conducted in a northern Australian Renal Service.

Methods: Phase 1 employed a cross-sectional, anonymous, online survey of renal nurses about the acceptability and feasibility of two hygiene options for patients: bathing wipes and a waterproof dressing cover. The survey also canvassed their concerns about the options. Descriptive statistics were used to summarise Likert-scale responses and content analysis was used for responses to open-ended survey questions. Phase 2 used conversational-style interviews with patients about their hygiene preferences, how they endeavoured to keep their dressings dry, and their impressions regarding the proposed options. Phase 3 was a series of case studies of patients trialling the provided options over a six-week period. Participants were progressively recruited to this phase and were provided with the product/s of their choice at each dialysis session; renal nurses also assessed the integrity of the dressings at each dialysis session. Research nurses discussed with the participants their experiences with the options.

Results: Phase 1: Nurses (N=37, response rate 58.7%) considered both options acceptable and feasible for patients, noting some practical concerns related to their use. Phase 2: Patients (N=27, 100% participation rate) described hygiene preferences and difficulties they encountered with keeping dressings dry. Only one participant had a bath, as per written advice. All were enthusiastic about trying the proposed options. Phase 3: Patients (N=22) appreciated being able to shower without wetting their exit site dressings. Individuals were inventive in modifying

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the application and use of the waterproof cover according to their body shape and the central venous catheter exit site location. Although participants liked both options, the waterproof covering was most popular and most frequently used. Intactness of the dressings was 83% during the trial; there were no central venous catheter-associated infections during the study.

Conclusion: Self-management and choice were motivating factors for participants. Patients embraced being able to keep their dressings dry and intact during personal hygiene in a tropical environment.

Implications for research, policy, and practice: Patients demonstrated their willingness to undertake a more active role in their dressing care, while exercising choice with respect to personal hygiene. Studies that further increase patients' participation in other aspects of their self-care warrant further investigation. The organisation is pursuing options for the ongoing provision of the products used in this study and how their use can be monitored in clinical practice.

What is already known about the topic?

- Intact dressings provide an important line of defence against infection in the vulnerable population of patients receiving dialysis via central lines.
- Hygiene needs are also an important consideration for quality of life, empowerment, and autonomy.
- Patients' current attempts to meet their own hygiene needs often result in a disruption to the intactness of the dressing site and predispose them to systemic infections.

What this paper adds

- This study facilitated exploration of two feasible hygiene options in an open and culturally safe manner, from both patients' and nurses' perspectives.
- The opportunity to perform personal hygiene according to individual preferences resulted in a willingness of participants to undertake a more active role in the care of their dressing.
- The identification of two acceptable and feasible personal hygiene options has the potential of removing one of the many lifestyle modifications faced by people who undergo haemodialysis via a central venous catheter.

Key words: Behaviour change; central venous catheter; chronic condition self-management; hygiene; wound dressing care

OBJECTIVES

This study aimed to explore patients' personal hygiene options while maintaining the integrity of their central venous catheter (CVC) exit site dressings between dialysis sessions. The objectives were to:

1. Identify enablers and barriers to patients using different options for their personal hygiene, as perceived by the nurses working within the Townsville Renal Service;
2. Ascertain feedback from patients with a CVC *in situ* about their preferences regarding personal hygiene between dialysis sessions; and
3. Evaluate participants' experiences with being supported to use different options to assist with their personal hygiene between dialysis sessions

BACKGROUND

There are many reasons for CVC access for haemodialysis, including late referrals, patients' preferences and patients' fear of pain associated with needling of fistulas.[1] Patients' preferences may mean that CVC access becomes long-term, even if they are aware that CVC exit sites are more likely to lead to systemic infections.[1] The risk of hospital-acquired bacteraemia is very real, with serious consequences for the patient and significant cost to the organisation. In Australia, the prolonged length of hospital stay associated with central line infections may cost a hospital up to AUD$34,843.[2] Patients with invasive devices such as CVCs and those who have multiple morbidities, such as those undergoing haemodialysis for kidney failure, have a greater infection risk than patients without such complications.[2, 3]

Meticulous attention to CVC exit site care, which includes a dry, intact dressing, is essential to prevent bacterial contamination.[4 5] In a crossover randomised controlled trial of an opaque dressing and a transparent dressing conducted in the tropics, both dressings remained fully intact between dialysis sessions less than 70% of the time.[5] Nurses are keenly aware of the risks of acquiring infections from wet dressings and the risks associated with patients changing their own dressings.[1] There are no standardised approaches to teaching patients the principles of managing their CVC exit site dressings, such as how to keep the dressings dry, how to replace dressings that have loosened between dialysis sessions, how to replace dressings that have become wet during showering, or how to care for exit sites in 'difficult to reach' areas such as the groin.[6] Patients are sometimes given extra dressings to place over an exit-site dressing when they shower, but this does not guarantee that the dressing itself stays dry. Such practices do not encourage self-care by the patient; nor is this practice evidence-based.[7]

In addition to the numerous daily lifestyle adaptations associated with haemodialysis, many patients who live in rural and remote areas of Australia need to relocate to a regional city that may be hundreds of kilometres from their home, to live in shared accommodation with little family support. Although patients have been able to maintain the integrity of their CVC dressings and reduce their risk of CVC-related infections by covering their site when they have a shower,[1] wound dressings are water-resistant rather than waterproof, and adhesives may fail in hot, humid climates. Supporting patients to attend to their personal hygiene as they wish is respectful and dignified care that may give back some control to the individual patient who requires haemodialysis long-term.

There are several frameworks for considering behaviour change, such as that required by patients undergoing haemodialysis.[8-11] This study was guided by the 'COM-B system' framework which has three essential components: capability; opportunity; and motivation for changing the behaviour. The person must be capable (psychologically and physically) of the behaviour, and be motivated to change, along with the opportunity for the desired behaviour to occur.[8] Each of the three components (capability, opportunity, motivation) can influence the other. The COM-B framework has been used in other research about lifestyle research[10,12,13] including that involving Aboriginal and Torres Strait Islander participants.[14] This framework guided the design, implementation, analysis and interpretation of results.

In a study of self-care dialysis patients, the support of nursing staff was considered essential to their ongoing self-management.[15] Discussions about personal hygiene practices can be quite confronting and need to be non-judgemental and culturally sensitive. Patients attending one north Australian Renal Service live in a range of accommodation types including shared or temporary accommodation and hostels,[16] and individuals attend to their hygiene in many ways. Patients may not have access to a bath, recommended as safer than a shower.[17] There are products that can be used instead of showering/bathing (e.g. bath wipes) and there are waterproof products that can be placed over CVC exit site dressings to protect them during showering/bathing. Understanding patients' hygiene preferences is critical to providing patient-centred care and promoting patients' dignity.

METHODS

STUDY DESIGN

This was a three-phase mixed methods exploratory study corresponding to the study's three objectives. Phase 1 was a cross-sectional survey of renal nurses. Phase 2 used a qualitative narrative design for the initial patient interviews, and Phase 3 used a multiple case study (qualitative) approach[18, 19] for the patient participants. The findings in Phases 1 and 2 informed Phase 3 participant selection.

SETTING

The setting for all three phases was a Renal Service in a regional city within the tropical region of northern Australia. The sample, recruitment, outcome measures, data collection, and data analysis varied by phases and are described separately for each phase.

PARTICIPANTS AND RECRUITMENT

Phase 1: All nurses (N=63) working in the Renal Service at the time of survey distribution were invited to complete an anonymous online questionnaire, which was distributed in late August 2018. Two reminder emails were sent. The only exclusion criterion was being a member of the research team.

Phase 2: All patients (N=27) undergoing haemodialysis via a CVC, at the time of data collection toward the end of 2018, were invited to participate in a conversational style, semi-structured interview about their hygiene preferences (such as frequency, bath/shower), and their initial thoughts about two hygiene products – bath wipes and a waterproof dressing cover (the interventions). There were no specific exclusion criteria.

Phase 3: Patients with a CVC (n=22), assessed by nursing staff to have the dexterity to use the different options while they showered/bathed, were invited to participate in the study. Exclusion criteria were: a previous skin reaction to the products being trialled; an exit site or CVC-related infection at the time of recruitment; unable to provide informed consent; medically unstable at the time of recruitment. Recruitment to this phase began in January 2019.

THE INTERVENTIONS

Two products were made available to participants. The first was a packet of eight, disposable bath wipes that could be heated and/or cooled ('Bath in bed wipes', Reynard Health Supplies), each wipe measuring 33cm by 23cm, and cost less than AUD$1 per pack. The other product was a waterproof cover ('Keep Dri Dressing', Sutherland Medical Pty Ltd) that was placed over the exit site dressing and removed and disposed of after showering. The cover was available in two sizes, 23cm by 17cm and 26cm by 23cm depending on patient preference. Each individual cover cost a little over AUD$1 and were available in packs of five or 25.

DATA COLLECTION

Phase 1

A questionnaire was developed by the research team on the Qualtrics platform, with iterative revisions pre-tested. Photographs and descriptions of the options were included within the questionnaire to stimulate recognition if participants had used the options previously. The questions focused on the advice nurses usually gave patients about managing their CVC exit site, and the acceptability, feasibility, benefits, and barriers to the use of each option. There were no questions regarding the demographic characteristics of the respondents, to preserve anonymity.

Phase 2

An informal interview guide was developed with questions that sought to elicit open discussions about actual hygiene practices in a non-judgmental, plain English style. Because a large proportion of prospective participants were Aboriginal and/or Torres Strait Islander, a conversational interviewing style was used, congruent with the 'yarning' method of Indigenous research.[20] These short (no longer than 10 minutes) conversations were not audio recorded, but rather the interviewer took handwritten notes. Participants were asked about: their usual hygiene practices and routines at home; ways they tried to keep their dressing dry while bathing or showering; and whether those strategies were successful. They were then shown the two products and discussed if they thought these would be helpful for them. Data for this phase was collected between September and November 2018. There were no questions related to patient characteristics; behavioural details related to matters of hygiene are presented in the results.

Phase 3

Participants were provided with the product/s of their choice as they attended dialysis (either two or three times per week) over a six-week period. At each dialysis session, the CVC exit site was inspected by the renal nurses for dressing intactness and dryness. Intactness was defined as "all four edges of the dressing remaining adhered to the skin".[16] At least weekly, a research nurse used an informal 'yarning' conversational approach as in Phase 2, to talk with the participants about their experiences with the products, how they attended to their hygiene and whether the dressings remained dry. Data were collected about select patient characteristics: age, sex, ethnicity, and catheter insertion site.

DATA ANALYSIS

Descriptive statistics were used to summarise the Likert-style survey responses. Responses to open-ended survey questions were analysed using content analysis[21] with the codes derived from the objectives of the study. One researcher (WS) led the analysis of the conversational interview notes and mapped the findings to the elements of the COM-B Model. All team members then reviewed and discussed the analysis. Exemplars of patient stories are presented to highlight emergent themes.

ETHICAL CONSIDERATIONS

As part of the research ethics approval process, the researchers met with the Health Service's Aboriginal and Torres Strait Islander Health Leadership Advisory Council to ensure that the study incorporated the values and principles underpinning research with Aboriginal and Torres Strait Islander Peoples,[22] and that study documents were culturally appropriate. This advice led to the development of strategies to mitigate the risk of coercion. The Leadership Council also advised on the wording of the study documents to facilitate informed consent/decline. Participants were able to provide written or verbal consent or indicate their consent drawing a cross. The Health Service's Human Research Ethics Committee approved the study (HREC/18/QTHS/46).

RESULTS

PHASE ONE

The link to the questionnaire was emailed to all 63 nurses working within the Renal Service; 47 nurses consented to participate, and 37 questionnaires were completed, giving a response rate of 58.7% (37/63). More than half of the respondents agreed that providing either the bath wipes or waterproof dressing cover to patients to assist with their hygiene needs between dialysis sessions would be both acceptable and feasible. Even though the nurse respondents were least familiar with the waterproof cover, it was rated overall as more acceptable (81%) and feasible (70%) than the bath wipes (61% and 51%, respectively) (Refer to Table 1). The mode for all responses was "Agree".

Nurses identified many benefits of patients using bath wipes between dialysis sessions. The most frequently identified benefit was that patients did not have to take either a bath or a shower, both of which potentially led to wet dressings and infections. Nurses indicated that the wipes might be an easy option for those patients who currently have difficulty meeting personal hygiene needs, with a subsequent improvement of their self-esteem, or that it would reduce the likelihood of patients forgetting about the need to keep their dressings dry because they would not be standing in the shower. Using the wipes would negate the need to try and cover the dressing with plastic and tape, advice that some respondents gave to patients. The wipes were perceived as particularly beneficial for non-ambulatory patients.

The continued availability of the product and ongoing costs were potential barriers noted by some nurses to the use of bath wipes between dialysis sessions. The nurses queried whether the product would be as refreshing as having a

TABLE 1: NURSES' RATINGS OF THE ACCEPTABILITY AND FEASIBILITY OF THE TWO OPTIONS

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Acceptability of interventions:					
It would be acceptable to provide bath wipes to renal patients as a way to meet their hygiene needs between dialysis sessions (n=36)	5 (14%)	17 (47%)	7 (19%)	4 (11%)	3 (8%)
It would be acceptable to provide waterproof dressing covers to renal patients as a way to meet their hygiene needs between dialysis sessions (n=37)	11 (30%)	19 (51%)	6 (16%)	0 (0%)	1 (3%)
Feasibility of interventions:					
It would be feasible to provide bath wipes to renal patients as a way to meet their hygiene needs between dialysis sessions (n=37)	2 (5%)	17 (46%)	11 (30%)	4 (11%)	3 (8%)
It would be feasible to provide waterproof dressing covers to renal patients as a way to meet their hygiene needs between dialysis sessions (n=37)	7 (19%)	19 (51%)	10 (27%)	0 (0%)	1 (3%)

shower or bath in a tropical climate, or whether the patients would feel as clean using the wipes compared to having a shower. Practical aspects such as whether the eight wipes included in each pack would be adequate for some of the larger patients, whether the patients might feel cold when using them, and disposal of the used wipes, were also noted as potential barriers to their use. Also, use of bath wipes did not resolve how patients wash their hair, which they may usually do in the shower.

The opportunity for patients to shower safely if they used a waterproof dressing cover, keeping their dressing dry and intact, was overwhelmingly the major benefit of this option, according to nurses. One nurse commented that the provision of a waterproof cover for the dressing would be less suggestive to patients that there was any deficit in their personal hygiene and would respect patients' preference for traditional methods of attending to their personal hygiene (showering or bathing) rather than using wipes.

There were some very practical responses to the question about barriers to patients using the waterproof dressing cover, including: patients may have difficulty applying the waterproof cover, or forget to use it before they get into the shower, which could lead to the exit site getting wet; patients may not remove it after showering, which may lead to accumulation of moisture around the exit site; it may not adhere to the skin of "hairy men"; some patients may be allergic to the product; concerns that it may not suit femoral catheters, or that it may give the patient a false sense of security when bathing, or that the patients may believe that they could go swimming with this cover in place. Another concern was that patients may accidentally remove the exit site dressing at the same time as removing the waterproof cover, which would leave the CVC exit site exposed. There were also concerns about the ongoing cost, continuity of supply and waste disposal of the product.

PHASE TWO

All 27 patients with a CVC *in situ* at the time of recruitment consented to participate in the study. Usual hygiene practices varied from showering independently (n=22); (six patients used a hand-held shower, 14 a fixed shower head), to showering with assistance (n=3), or taking a 'bird bath' rather than a shower or bath (n=2). The phrase 'bird bath' is a local colloquialism and refers to sitting or standing at a sink and then selectively splashing water on parts of the body or using a wet and/or soapy washcloth/face flannel to do so. Only one patient had a bath as per the written advice provided to them.

Participants detailed quite elaborate and time-consuming actions they took to keep their dressings dry. One patient who covered her dressing with a towel folded in three to try and keep it dry (often unsuccessfully) when she showered every second day, was non-committal about trying the bath wipes but was highly motivated to start using the waterproof cover immediately. Another patient saw the benefit of the waterproof cover because she "struggles with keeping the dressing dry", despite taking a lot of care when using a hand-held shower. This patient, although not as keen to try the bath wipes, had seen them previously in hospital and felt they would potentially be useful on days she didn't shower. Another patient thought the wipes felt thick and they could perhaps be used in place of one of her twice-daily showers. One patient, who patted his dressing dry if it got wet even after he tried to avoid the area around the catheter by using a hand-held shower, was adamant that the wipes "wouldn't clean him" but was very motivated to try the waterproof cover. He even hoped he could swim with the cover, which evoked some nurses' concerns.

Generally, participants expressed a preference for showering and feeling the water on their skin. For example, a woman with a femoral dressing who tried to shower herself twice daily under a fixed shower head thought the cover "would be better and easier than [plastic] wrap" but was not so keen on trying the bath wipes because she said she would always prefer a shower. Some participants raised concerns, however, about their capability of using the waterproof cover. For example, one participant who showered herself but had someone in the house in case she should fall, said, “If I put it [the cover] over that [the dressing] I might peel the whole thing off”. This echoed a concern of the researchers, and one of the inclusion criteria for participants in the third phase of the study having the manual dexterity to apply and remove the cover. A younger patient who “likes the water running over [her] skin” was willing to try the bath wipes. But she was also keen to try the waterproof cover, saying it “might cover the lines too so they don’t get wet – good”. Another participant said that although the wipes felt nice on her hands, she would continue with having a shower and did not wish to change her hygiene routines. Yet another participant was very excited at the possibility of using the waterproof cover, saying, “at last I can have a shower without a garbage bag on”. The two women who had a ‘bird’ bath/sponge had slightly different responses to the options offered. One was not that interested in the wipes but was extremely happy to think that she could shower again by using the waterproof cover. The other was willing to try the bath wipes and seemed to like that they can be warmed. But her eyes ‘lit up’ when shown the waterproof cover and said that her daughter or husband could help stick it on because “showers are better, cleaner”.

PHASE THREE

Twenty-two patients (13 women, nine men; aged between 24 and 89 years) were progressively recruited to this phase commencing mid-January 2019, with data collection completed end-July 2019. Ten participants (45.5%) identified as Aboriginal and/or Torres Strait Islander; other participants were either Caucasian (n=11, 50%) or Asian (n=1, 4.5%). Catheters were inserted into the right internal jugular vein (n=16), left internal jugular vein (n=3), left femoral vein (n=2) or the right femoral vein (n=1).

The waterproof dressing covers were most popular, and most frequently used, being supplied 247 times compared to 120 times for the bath wipes. One patient used only bath wipes, and two participants only used the waterproof dressing cover. No participant had signs or symptoms of an infected CVC site while participating in the study. There is some missing audit data related to either patients not attending all their scheduled dialysis sessions or data collection forms being incomplete. Exit site dressings were intact 236/283 (83.4%) of the completed audits. Eleven individuals’ dressings were fully intact on all audits. The lowest fully intactness rate was 22.9% (two of the nine completed audits) for one participant. Only 16/312 (5.1%) dressings were wet at the time of dialysis; 14 of the 22 participants (63.1%) always presented to dialysis with a dry dressing. However, 29/299 (9.7%) dressings were assessed as having been wet between dialysis sessions but were dry by the time of dialysis.

In this phase, participants described how they experimented with the products, particularly with the waterproof dressing cover. A 52-year old woman said the dressing covers were fine once she used tape to reinforce the edges. A 48-year old woman said that the dressing covers were “fantastic” and showering was “less stressful” although sometimes they came unstuck when she raised her arms. Sometimes participants needed assistance to apply the waterproof dressing cover but once it was in place showering was much easier. Sometimes the patients forgot to use it, whilst a middle-aged man said he sometimes did not use it because it was time-consuming putting it on.

Participants who used the bath wipes commented that they felt clean and refreshed. Not needing assistance to use the bath wipes was a positive experience for several participants, and they chose them over the waterproof dressing cover so that they could be independent.

Examples of four patients’ experiences, representative of participants, are now presented. A 52-year old woman who lives in the city with family support told the researcher in Phase 2 that she had a bird bath to ensure she kept her dressing dry. She used both products during Phase 3 and said that the waterproof cover was better and loved being able to shower again. It made her feel good, and she was smiling when talking about her experiences; her son corroborated his mother’s preference for the waterproof cover. Her CVC dressing was dry and fully intact at 100% of the audits, even though she occasionally missed a dialysis session (which meant that her dressing needed to remain *in situ* for longer).

A 79-year old woman told the researcher in Phase 2 that she used a hand shower, every second day. She used and liked both options over the six weeks in Phase 3. She found the bath wipes easier to use, saying that she sometimes found it difficult to remove the waterproof dressing cover from her “thin skin”. However, using the waterproof cover was “terrific, you can use both hands” which made washing her hair and washing under her right armpit (the side her catheter was located) easier. Her CVC dressing was dry and fully intact at 100% of her dialysis sessions.

A 59-year old man who did not participate in Phase 2, used only the waterproof cover in Phase 3. He felt clean after his daily shower and said that it sealed well on his hairy chest, without giving him a “wax” when removed. His CVC dressing, however, was fully intact at only 3/11 (27%) of his dialysis sessions, most likely due to diaphoresis. It was dry on all but one dialysis session (10/11, 91%), indicating he managed to protect his exit site reasonably well.

A 58-year old woman with limited vision who previously had to pat her dressings dry with a towel after showering, found that the waterproof cover minimised the itching associated with a wet exit site dressing. Although she needed a little help from her carer to apply and remove the waterproof dressing cover because of her poor eyesight, she felt “more confident in the shower" and more independent. She commented "they are deadly", which is a positive expression of Australian Indigenous persons. During this phase, her dressings were intact 16/18 (89%) of the audits, were always dry at the time of the audit, but appeared as though they had been wet on 2/18 (11%) occasions, which, according to the nurses was an improvement on her usual situation.

DISCUSSION

Nurses considered both offered options acceptable and feasible, and that they would enable patients to attend to their personal hygiene safely (Objective 1). Capturing the nurses' perspectives highlighted that patients' hygiene preferences and practices were rarely discussed in detail. The full participation of eligible patients in Phase 2 reflected their eagerness to be involved, with their responses indicating that they were aware of the ideal being to keep their dressing dry and intact between dialysis sessions. They described detailed, personalised and quite inventive strategies for trying to meet that goal, thereby satisfying Study Objective 2. In Phase 3, the participants responded positively to being given a choice and being supported to attend to their hygiene safely, and according to their preferences (Study Objective 3).

Participants' preferences for showering is consistent with research with other hospitalised patients.[23] The patients welcomed this opportunity to shower afforded by the waterproof dressing cover. Nurses' positive ratings of the acceptability and feasibility of the waterproof dressing covers contributed to the 'opportunity' to shower, since they provide education and assistance to patients relating to self-care.[15] The possibility voiced by some nurses that patients might push the boundaries, however, was realised by a couple of patients who tested how long they could remain in the shower before the dressing's integrity was breached.

Facilitating personal hygiene choices strengthened the partnership between nurse and patient. By starting a conversation about hygiene care practices and preferences, patients shared the impact the CVC had on their lives and afforded the nurses greater insight into the challenges faced by the patients in their care. Greater attention to psychosocial needs and holistic care in a supportive and safe cultural environment can help achieve common goals and positive health outcomes.[24,25] The invitation to participate in own care decisions promoted autonomy, independence, and preserved quality of life.[24] The opportunity to have a choice of which product to use ensured patient-directed goal setting which allowed the outcome of care (dry and intact dressing) to become a goal that the patient was motivated and equipped to achieve.[26]

The results of this study resonated with the components of the COM-B system for understanding behaviour and behaviour change.[8,27,28] The opportunity to change was presented by the securing of two products that were previously not used in the Renal Service. Each product had features that appealed to individual participants. The option of safely showering reduced any dissonance between the advice previously provided to patients that having a bath was the best option, yet most patients were unable to comply with that option as they did not have a bathtub in their homes. Nurses should be able to provide appropriate education for patients to use either option safely in the future. After minimal instruction, most patients demonstrated their capability to use both products. Nurses can be reassured by the patients' responses that indicated their motivation to keep their CVC dressings dry and intact. Motivation to make a change in behaviour was evident by enthusiastic participation in this study, and continued desire to have access to the products of their choice.

There are aspects associated with using these options that the organisation needs to resolve. Both products generate additional rubbish for disposal, an environmental concern to all. Patients can purchase the bathing wipes online but will pay a little more than it costs the health service. Whilst patients may be prepared to pay a nominal cost for bath wipes for a short-term,[29] this additional ongoing cost will be a challenge to some of our patient cohort, many of whom are in a low socio-economic status bracket. It is even more difficult and costly for individuals to purchase the waterproof dressing cover. However, patients clearly preferred this option and embraced being able to shower without compromising their exit site dressing.

STRENGTHS AND LIMITATIONS

This study explored a topic about which little was known, personal hygiene preferences of patients with CVCs in a tropical climate, and the information provided by nurses about this sensitive topic. There was minimal burden for participants in the study, other than providing feedback about the use of the hygiene options. There is no intention to endorse either of the specific products used in this study; the bath wipes are used in other areas of the hospital, and the waterproof dressing cover is an Australian product. We cannot attest to the safety of other brands of bath wipe products on the fragile skin of patients undergoing haemodialysis for end-stage renal disease.[30] It is acknowledged that the observational nature of study design was not developed with infection as an outcome of interest. The observational study design also limits the generalisability of the findings to other settings. Since the study design allowed for participants to choose what products they used, and how often they used them, it was not possible to compare dressing intactness and wetness rates according to the two products provided. A final limitation is the lack of demographic data in Phases 1 and 2, limiting our ability to describe the sample more fully.

CONCLUSION

The heat and high humidity of the tropics will continue to pose challenges to maintaining the integrity of an occlusive dressing and preventing sepsis. From their involvement in this study, nurses can work with patients to resolve some of the potential barriers. However, the exploration of options to enable patients to keep their dressings dry and intact while they attended to their personal hygiene as they wished, promoted patient dignity and autonomy. It is possible for nurses to provide solutions for some of the potential barriers.

There was enthusiastic participation in the study, even by some patients who are traditionally somewhat reluctant to engage in conversations, reflective of incorporating the core values underlying research with Aboriginal and Torres Strait Islander Peoples.[22] For some patients, it has increased their willingness to take a more active role in their dressing care, and nurses are integral to supporting these opportunities and efforts. Funding for ongoing provision of the products needs to be considered by the Renal Service, to continue to provide the opportunity for behaviour change. Monitoring of the continued use of the options in a non-research environment will be required (for example, to guard against complacency on the part of patients and nurses).

IMPLICATIONS FOR RESEARCH, POLICY, AND PRACTICE

This study demonstrated that relatively low-cost options were effective in maintaining the integrity of exit site dressings. The cost of such options is far less than the cost of a bacteraemia to the individual and organisation. It was a simple solution to remove one of the many lifestyle modifications faced by people on haemodialysis via a central line.

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