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Exploring quality of life, physical and psychosocial morbidity for patients with non-infected wounds: a pilot study

KEY WORDS

- ▶ Acute wounds
- ▶ Non-infected wounds
- ▶ Pilot study
- ▶ Quality of life
- ▶ Resilience

This article reports on the results of a pilot study exploring health-related quality of life and the experience of being resilient in patients who develop acute, non-infected surgical wounds. By investigating this under-researched area of wound management, the project team intended to highlight the aspects of patient empowerment in healing post-surgery, encompassing the physical, social and psychological domains. Participants were recruited from patients who had undergone a surgical procedure resulting in an acute non-infected healing wound, and who met the inclusion criteria of the study. Patients were excluded if they had a chronic wound in addition to their acute surgical wound. Valid scores on the physical health (PCS) and mental health (MCS) domains of the SF-12 could only be obtained from six patients pre-operatively. A further six patients completed the SF12 instrument pre-operatively (five valid sets of scores obtained); these patients did not complete the HADS scale. Paired samples t-tests conducted on patients from whom both pre- and postoperative scores were obtained found no significant difference between pre-operative and postoperative PCS scores ($p=0.468$) or MCS scores (0.806); or between pre-operative and postoperative scores on the anxiety subscale on the HADS scale ($p=0.951$) or the depression subscale ($p=0.951$). However, as a pilot study, the study was not powered to detect significant differences. Higher levels of anxiety were revealed in this pilot study than in the wider population. No differences were observed between pre-operative and postoperative scores for physical and mental wellbeing. The findings, while from a small sample set, indicate anxiety is experienced by people living with a wound, and needs to be a consideration in care management plans to enhance adaptation.

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With the ever-increasing priority of healthcare providers internationally to reduce the length of in-patient stay, there has been an increase in day case surgery, and the amount of patients who return to the community with an acute wound healing by primary intention. Many of these patients will not require follow-up visits by healthcare professionals, as their wounds are not infected and sutures are dissolvable. Pain and fatigue associated with post-surgical procedures have been discussed as being obstacles to maintaining quality of life (Carlsson et al, 2010; Goldberg and Beitz, 2010; Probst et al, 2013).

Additionally, the experience of living with a wound, either acute or chronic, is connected

to the loss of mobility, loss of financial capacity (unable to work during some of the wound healing period) and changed social roles (Goldberg and Beitz, 2010).

The psychological impact for patients with wounds can be significant, and adverse psychological effects occur most often when there are permanent changes in the body's structure or function. The emotional, social and psychological impact of wounds has been the focus of some studies, however, the idea of being resilient in the context of having a wound has received little attention to date. More specifically, there has been little research to explore the effect an acute wound can have on the quality of life and psychological

morbidity of these patients. Furthermore, no research has identified which resilient strategies are required by patients and their family care givers to effectively manage the day to day activities of living with a closed wound.

This article examines the results of a pilot study exploring health-related quality of life, and depression and anxiety in patients who have a closed surgical wounds. The notion of resilience in this group is also considered a theoretical construct and is discussed in relation to the findings. For the purpose of this research, resilience was defined as self-righting capabilities, transcending the negative impact of illness (Edward et al, 2009; Edward, 2013). By investigating this under-researched area of wound management, the project team intended to highlight the aspects of patient empowerment in healing post-surgery, encompassing the physical, social and psychological domains.

Sample details

Participants were recruited from a day-case unit and urology ward and were patients either undergoing a day surgical procedure or urological procedure.

Inclusion/exclusion criteria

Patients admitted to a surgical/day-case ward for an elective surgical procedure with a wound healing by primary intention; who were able to understand, read and speak English; and who understood information about the study and give informed consent for study participation were recruited to the study. Patients were excluded if they had an infected wound defined using the Centers for Disease Control and Prevention (CDC; 2014) criteria, and/or a chronic wound in addition to their acute surgical wound; could not speak or understand English; and/or were unable to give informed consent/lacked capacity to do so.

Ethical considerations

Confidentiality was maintained with no identifying patient features being collected. Each participant was assigned a non-identifiable study number when collecting data. All participants were advised they could leave the study at any

time and this would not affect the treatment they were receiving. Ethical approval was sought and successfully received from National Health Service ethics, 13/WM/0209 IRAS project ID: 124204 and local research governance.

METHODS

Participants were randomly identified from a day-case surgical unit and a urology ward. The researcher then visited the ward and gave the patient the information sheet and explained the nature of the study to them. Following this, if the patient still wanted to be involved they were consented. For this pilot study, the researchers collected pre-operative and postoperative quality of life scores using the SF-12 quality of life instrument, and anxiety and depression scores using the Hospital Anxiety and Depression Scale (HADS).

Scores on the physical health (PCS) and mental health (MCS) domains of the SF-12 were obtained using the Quality Metric Health Outcomes Scoring Software. These scores are scaled in the population to have a mean of 50.0 and a standard deviation of 10.0. Anxiety and depression scores from the HADS instrument are scaled in the population to have mean values of 4.4 and 4.8 respectively for males, and 5.0 and 4.7 respectively for females.

Both the SF-12 and HADS questionnaires were distributed during the initial pre-operative patient visit to allow for identification of pre-operative health-related quality of life scores. The second SF-12 and HADS questionnaires were given to the patient with instructions to complete two weeks post-operatively, and a date written on the questionnaire to remind the patient of the completion date. An acute wound will usually heal within 2 weeks: therefore, a 2-week period for completion of the second questionnaires allowed the patient to assess their health status during the acute wound healing phase.

Sample size

No formal sample size calculation was undertaken, as this study was envisaged as a pilot study that could inform the sample size requirement for a subsequent full-scale study. Fifteen participants were recruited and

“By investigating this under-researched area of wound management, the project team intended to highlight the aspects of patient empowerment in healing post-surgery, encompassing the physical, social and psychological domains.”

Measure	Pre-operative (mean (SD))	Postoperative (mean (SD))
SF12-PCS	44.2 (14.2)	43.9 (11.7)
SF12-MCS	47.8 (11.6)	45.1 (14.6)
HADS-A	5.75 (5.28)	4.88 (4.05)
HADS-D	3.87 (4.49)	4.13 (3.09)

asked to complete two questionnaires on two occasions; while sufficient data were required to be collected to provide estimates of study parameters and effect sizes, there was no pre-requisite that data should be obtained from all 15 participants. The protocol also anticipated that five participants would be interviewed to offer an in-depth exploration of how patients and their significant others develop strategies for resilience. All participants were approached about being interviewed during the initial visit and given written and verbal information regarding the interview. Unfortunately, none of the participants volunteered to be interviewed.

RESULTS

Although 15 participants were recruited only 8 patients provided both pre- and postoperative responses. As the study was conceived as a pilot, it provided the team with some, albeit limited, data. Valid scores on the PCS and MCS domains of the SF-12 could only be obtained from six patients pre-operatively (responses from two patients included a large proportion of missing data, and therefore the PCS and MCS domain scores of the SF-12 instrument could not be obtained for these patients). In addition, a further six patients completed the SF-12 instrument pre-operatively only (five valid sets of scores obtained).

Pre- and postoperative scores on both instruments are summarised in *Table 1*. Mean pre- and postoperative SF-12 scores obtained were below the mean values in the population in both domains, indicating below-average functionality in the sample. These scores were not significantly different from the population means (pre-operatively: $p=0.203$ for PCS, $p=0.546$ for MCS; postoperatively: $p=0.184$ for PCS, $p=0.376$ for MCS).

Mean values from the anxiety subscales of the HADS instrument were above mean values in the

population for both males and females, indicating greater levels of anxiety in the sample than in the wider population. Mean values from the depression subscales of the HADS instrument were below mean values in the population for both males and females, indicating lower levels of depression in the sample than in the wider population. Due to small numbers in the subsets created by the partition of the sample by gender, single sample inferential tests were not conducted on this data.

Paired samples t-tests conducted on the six patients from whom both pre- and postoperative scores were obtained found no significant difference between pre-operative and postoperative PCS scores ($p=0.468$) and MCS scores ($p=0.806$); or between pre-operative and postoperative scores on the anxiety subscale on the HADS scale ($p=0.951$) or the depression subscale ($p=0.951$).

Quality of life (measured by SF-12) scores were lower in this pilot study sample than in the wider population, but not significantly lower. Anxiety (measured by HADS) scores were higher in the pilot study sample than in wider population both pre- and postoperatively. Depression (measured by HADS) scores lower in the pilot study sample than in wider population both pre- and postoperatively. No significant differences between pre- and postoperative scores using either SF-12 or HADS were detected. However, this is probably due to the low response rates and the small size of the study, which as a pilot study was not powered to detect significant differences. Information related to being resilient during the period of postoperative healing was not able to be obtained through interviews as no participants volunteered to be interviewed during this pilot.

DISCUSSION

Anxiety and acute non-infected wounds

The results from this pilot indicate anxiety was experienced by participants both pre- and postoperatively and is worthy of further examination in a larger more robust study design. Living with a wound can create anxiety for an individual, since there may be concerns related to changes in individual's experiences. These can include changes to the individual's social role, for example, loss of functionality, feelings of pain

and discomfort, and stigma attached to having a wound (e.g. body image). While the majority of available evidence examines these issues in chronic wounds little has been undertaken to explore the anxiety for people with acute non-infected wounds.

Anxiety in people who have an acute wound – for example, a person with a total knee replacement may be nervous of bending their knee in case the sutures break open, can result in a negative impact for recovery. More specifically, these considerations are important, as patients' perceptions can contribute to healing (Wilson et al, 2011). Feelings of anxiety (with or without a mood disorder) can also negatively impact a person's quality of life (Lo et al, 2012; Milne, 2013; Gorecki et al, 2014). Quality of life is experienced by individuals as being a component of their sense of overall wellbeing and incorporates objective and subjective aspects including – material, social, emotional and physical wellbeing, as well as development and activity (Felce and Perry, 1995; Phillips, 2012).

Physical and mental wellbeing

No differences were observed between the pre-operative and postoperative scores for physical and mental wellbeing. However, as a pilot, this study was not sufficiently powered to detect any real differences. Living with pain, loss of mobility, experiencing altered sleeping habits and adapting to living with a wound can detrimentally impact both the physical and mental wellbeing of people. Losing control over the body can also impede feelings of resilience in patients, which may also be exacerbated by a lack of information and advice about how to manage the wound, as well as the physical limitations and psychosocial consequences (Probst et al, 2013). Psychosocial consequences can also encompass mood disturbances, such as depression (Winkley et al, 2012).

When individuals believe they are incapable of controlling what happens in a situation, their adaptive skills become restrictive and potentially ineffective. However, when individuals believe that outcomes are manageable, learned helplessness is avoided and attempts are made by the person to overcome the aversive situation.

This, in turn, provides individuals with the possibility of moving forward and achieving resilience. In this context, by being resilient, individuals have the power to recover, adjust, resist stress and potentially thrive in the face of adversity (Edward 2005; 2008; 2013; Edward and Warelow, 2005). Due to the absence of any data arising from this pilot study and the paucity of information on resilient personality types and wound healing for people with wounds, further research into this area is warranted.

Limitations

This was a small sample and, as such, the results are not transferrable. The results were non significant, but as a pilot study this is acceptable as the study was not intended to be sufficiently powered to detect significant effects. The research team had anticipated there would be qualitative data generated through semi-structured interviews that would provide an insight into the effect living with a wound had on quality of life and resilient behaviours with which to inform clinical practice of working with people's strengths when they have a wound. However, none of the participants volunteered for interviews.

As this study was non-experimental, results may have been subject to confounding bias; for example, due to variations in the type of surgery to which participants were subject, pain levels, and family support. A full-scale study would account for such variables and additional demographic variables, in a multiple analysis. However, such a rigorous treatment was not possible in a small-scale pilot study. The limited data collected does identify the importance of developing a larger research project to investigate the quality of life and the impact of anxiety for this group of patients.

CONCLUSION

The aim of this study was to explore quality of life, depression and anxiety, as well as physical and psychosocial morbidity for patients with non-infected acute wounds. The findings indicate that anxiety is experienced by people living with these wounds over at least a limited period of time. The improvements in anxiety and depression

levels recorded over the 2-week period may correspond with the natural time to healing of most acute wounds. After 2 weeks, both anxiety and depression scores were approaching those found in the general population. These early findings suggest that this improving effect is unlikely to be maintained beyond the 2-week analysis period. However, further analysis would be required to verify this point and any potential impacts on the person's quality of life and subsequent personal adaptation. Other factors, such as the reason for the surgery, may also affect the measured outcomes.

The importance of investigating and exploring this area of patient care cannot be over-emphasised. There is an increasing priority of healthcare providers internationally to reduce the length of in-patient stay and increase personal adaptation experienced by patients in the context of post-surgical recovery. Although some of the patients in this study were undergoing day-case surgery, it is necessary that the importance of providing clear information as to how patients and their families can self-manage wounds on discharge home is recognised, and that the clinician is able to effectively recognise a healing wound — for example, the normal inflammatory stage of healing — and not to confuse this with early signs of infection.

However, there has been little research to explore the effect an acute non-infected wound can have on the psychological morbidity or wellbeing of patients, or indeed the resilience that patients and their family caregivers have to develop to manage day-to-day activities of recovery with an acute non-infected wound. Importantly, it is recognised that psychosocial factors, such as anxiety and depression are associated with delayed healing of wounds, and that when patients are actively involved in their care, outcomes are improved (European Wound Management Association, 2008).

Psychosocial variables can be powerful predictors of health-related quality of life and wellbeing, and in this context need to be considered in care planning and discharge

management for patients (and their significant others) with these wound types. 

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