A Descriptive Study to Assess Wellbeing, Quality of Life and Satisfaction of Omani Patients with Chronic Wounds

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Abstract

Background: A chronic wound is one that has failed to proceed through the normal phases of wound healing in an orderly manner. Chronic wounds are a common problem around the world. They can be distressing to the patients causing physical, social and emotional damage such as decreased activities of daily living, pain, discomfort, unpleasant odor, and insomnia. Wellbeing, quality of life and satisfaction of these patients with chronic wounds can be impaired by a complex set of aspects. The purpose of this article is to describe the impact of chronic wounds on the wellbeing, quality of life and satisfaction of Omani patients with chronic wounds.

Methods: This is a descriptive cross-sectional study of 275 patients with chronic wounds attending three tertiary care hospitals in Muscat city, Sultanate of Oman. Adult patients of 18 years and above with wounds of duration of more than 4weeks were chosen by consecutive non-probability sampling. A pre-tested, semi-structured self-reported questionnaire was provided to each patient to complete. Data was analysed using SPSS IBM version 23.

Results: The average age of the patients was 47.13 ± 16.917 and the majority of them (64.7%) were males. Most of them (29.1%) had diabetic ulcers and 45.8% of them presented with mildly severe wounds based on Bates-Jensen wound assessment scale. Patients with chronic wounds reported a poor wellbeing scores ($M=10.47$, $SD= 1.813$), moderate quality of life ($M=5.22$, $SD= 2.388$) and satisfaction scores ($M=6.89$, $SD= 2.388$). Significant mean differences were reported with age, gender, educational level, and type of wound at $p<.05$ levels.

Conclusion: These findings demonstrated that chronic wounds could influence the wellbeing, quality of life and overall satisfaction with the quality of life of patients suffering with it. These results also suggest a need to pay increased attention by the healthcare providers to the patients suffering from chronic wounds on the aspects of wellbeing and quality of life along with treating the physical symptoms.

Background

Chronic wounds are distressing conditions that can impact all facets of a patient's health-related quality of life, in particular well-being and satisfaction [1]. Chronic wounds are defined as the wounds which "fail to proceed through the normal phases of wound healing in an orderly and timely manner" [2]. The elderly and patients with comorbidities are the most affected by these chronic wounds which most commonly include arterial and venous leg ulcers, diabetic foot ulcers and pressure ulcers [3]. Chronic wounds are considered a widespread problem across the globe [4]. In a systematic review of the literature, Martinengo L, Olsson M, Bajpai R, Soljak M, Upton Z, Schmidtchen A, Car J and Järbrink K [5] found that the point prevalence of chronic wounds is approximately 0.2% and the lifetime prevalence is around 1%. However, many studies have shown that although chronic wounds present a significant burden on patients, they are widely underreported [6, 7]. An approximate 2% of the total American population is affected by chronic wounds, which is between 2.5 - 4.5 million patients [8]. The prevalence is higher in the United

Kingdom where Phillips CJ, Humphreys I, Fletcher J, Harding K, Chamberlain G and Macey S [9] have shown that 6% of the Welsh population is affected by chronic wounds. In the Arab world in general and in Oman in particular, the prevalence of chronic wounds is unknown. However, one could expect a significant number of the Arab population is experiencing or will experience chronic wounds at a certain point. This is even more probable when considering that the prevalence of diabetes is the highest worldwide in this region which could eventually lead to diabetic ulcer in many patients [10].

Chronic wounds can seriously affect patients' wellbeing and quality of life [11]. Quality of life differs from well-being. While well-being is the subjective emotional response the patient has over their wound, its treatment and the outcome of the wound; quality of life is the evaluation that a patient makes about the impact of a disease on their everyday life [12]. Patients with chronic wounds have a higher level of anxiety when compared to healthy patients [13]. This anxiety affects their well-being and stems from worry, disappointment, frustrations, the wound's uncertain nature of healing and the threat of relapse [11]. Understanding chronic wounds patients' wellbeing allows health care professionals to focus on the worries of the patient and to deliver a holistic treatment [14].

Moreover, patients with chronic wounds have difficulties coping with their injuries resulting in body image problem, low self-esteem, a restricted social life, and professional and financial burdens [15]. These aspects have great repercussions on the health-related quality of life of the patients. A low quality of life has been shown to cause poor health outcomes and increase the risk of comorbidity decreasing the patients' life expectancy [16].

The World Health Organization predicted that the proportion of people aged 60 and above will double by 2050, which could undoubtedly mean that the burden of chronic wounds will only increase, and countries will face a difficult task preparing their health care system [17]. Therefore, we need to understand the impact of chronic wounds on patients' wellbeing, quality of life, and satisfaction in order to find coping strategies to improve those variables. Although it is well known that chronic wounds negatively impact patients' well-being, health-related quality of life, and satisfaction, patients' attitudes and opinions may differ between countries and cultures. The concepts of well-being and quality of life are known to be particular to each individual, changes over time, and depends on culture and context [18]. Therefore, assessing the wellbeing and quality of life of Omani patients who suffer from chronic wound is primordial to offer a better treatment, a holistic one with centring not only on wound healing.

The Cardiff Chronic wound scale is a questionnaire containing seven items focusing on patients' wellbeing in relation to the chronic wound, and more particularly tackles the anxiety about the impact and the result of the wound [14]. A new version of the questionnaire was developed and an overall rating of health-related quality of life using a 10-point scale was incorporated, as well as a rating of patient's satisfaction.

To our knowledge, no studies have addressed well-being, quality of life, and satisfaction of Omani patients with chronic wounds. Yet, failure to address these important measures can negatively impact

patient outcomes. Therefore, the aim of this cross-sectional study is to assess the impact of chronic wounds on these three variables in Omani patients.

Methods

Study design and settings

This was a cross-sectional study conducted in three tertiary hospitals in Muscat, Oman from June 2020 to December 2020.

Participants

A total consecutive sampling of 275 patients meeting the inclusion criteria were recruited from the wound care clinics of the three tertiary care hospitals (Sultan Qaboos University hospital, Royal Hospital and Khoula hospital) of Muscat, Oman. A sample size of 300 individuals was determined by G power analysis and 275 participants (91.6%) responded to the self-reported questionnaire. Inclusion criteria consisted of adult patients of 18 years and above suffering from chronic wounds (healing was arrested in any wound healing stages for more than four weeks duration) and participants were excluded if they had mental illness, dementia, or they had suffered a major traumatic event in the six months prior to the study.

Ethical consideration

Ethical approval was received from the research and ethics committee of Sultan Qaboos University and respective hospitals. All participants gave their informed consent prior to data collection. Both the researchers and the participants agreed to use the data for scientific research purposes only. All personal identifications of patients remained anonymous to ensure that there was no violation of privacy. Data confidentiality was maintained, and all physical data files were kept in locked cabinets in the researcher's office. All the signed informed consent forms with the respondent's details were stored and locked separately from the data. Confidentiality was also maintained by assigning code numbers instead of names to the data files.

Data collection and analysis

Three research assistants (RAs) who were working as senior nurses in the hospitals were recruited and trained on ethical considerations in recruiting the participants for the study and data collection. Information about the patients with chronic wounds who were admitted to the hospital wards for treatment or visiting the outpatient department were accessed from the hospital registry. A consecutive sample from the list was approached by the RAs and the purpose of the study and voluntary nature of participation was explained. After obtaining their informed consent, they were taken to a separate room for a data collection interview which lasted for 15 minutes. Participants were given the self-reported questionnaire and those who required assistance were helped by the RA. A pilot study was conducted with 20 patients who were excluded from the target study sample. This assured the reliability and validity of the questionnaires.

Instruments used in data collection

The self-reported questionnaire consisted of four parts. The first part consisted of socio-demographic details like age, gender, educational level, marital status, monthly income, occupation. The second part included clinical details like type of wound, presence of co-morbidities and treatment, which were accessed from the medical records of patients and filled in by the RA. The third part consisted of the Bates-Jensen wound assessment tool to assess the severity of the wound with the help of 13 items ranging from 1 to 5 with specific characteristics [19]. Wound assessment was made through observation by the research assistants who were trained to use the Bate-Jensen wound assessment tool. The severity scores were interpreted as follows: 13-20 as minimum severity, 21-30 as mild severity, 31-40 as moderated severity and 41-65 as extremely severe wound. In addition, the fourth part uses the Cardiff wound impact scale (CWIS) to assess the wellbeing and quality of life of the participants and satisfaction of overall quality of life of the participants. Wellbeing was assessed with seven items in a Likert scale of 1 to 5 (1=strongly disagree, 2=disagree, 3=not sure, 4=agree and 5=strongly agree). The scores were combined as 1 (strongly disagree, disagree and not sure) and 2 (agree and strongly agree). The total scores ranged from 7 to 14 with higher scores indicating poor wellbeing. One item was reverse scored. The participants were asked to rate their overall quality of life in the preceding week on a numerical rating scale of 0 to 10, ranging from the worst possible to the best possible. The participants were also asked to rate their satisfaction with the overall quality of life in the preceding week on a numerical rating scale of 0 to 10, ranging from not at all satisfied to very satisfied. The internal consistency of the CWIS subscales had a standardized Cronbach's alpha range from 0.715 to 0.797 [20] and in our study the Cronbach's Alpha for the wellbeing scale was 0.726.

Data analysis

SPSS Statistics (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.) was used for data entry, data cleaning, and data analysis. The data was audited for accuracy by two investigators. A probability of <0.05 was considered statistically significant for all tests. Descriptive summaries of sociodemographic and clinical characteristics (means, standard deviations, frequencies, percentages) were used to describe the sample. Comparison of wellbeing, health-related quality of life and satisfaction with quality of life scores with demographic and clinical variables were done using independent t test and analysis of variance. Pearson correlation was used to identify the relationship between wellbeing, quality of life and satisfaction.

Results

Among the 275 participants who responded, 87 (31.6%) were in the age group of 31 to 45 years and 178 (64.7%) were males. Overall, 179 (65.1 %) had lower level of education and 244 (88.7%) had a monthly income of less than 1000 Omani riyals. The majority 190 (69.1%) of them were married and 102 (37.1%) were employed.

Regarding the type of wound, 80 (29.1%) had diabetic ulcers followed by 61 (22.2%) with surgical wound ulcers and 51 (18.5%) had pressure ulcers. Most of them, 187 (68%), had co-morbidities like diabetes, hypertension, stroke, and heart diseases and 130 (47.8%) were treated with dressing.

Wound severity was classified with the help of Bates-Jensen wound tool as: scores of 13 to 20 was considered as minimum, 21 – 30 as mild, 31-40 as moderate, and 41 -65 as extreme severity. Many of the patients 126 (45.8%) presented with mildly severe wounds followed by 70 (25.5%) with moderately severe wounds.

Table 2 revealed the perception of wellbeing of patients with chronic wounds. The total scores ranged from 7 to 14 with higher scores indicating poor wellbeing. The mean and SD of wellbeing scores of the participants was 10.47 ± 1.813 . There was significant difference with chi-square analysis between those who strongly disagreed and those who strongly agreed with the statements at $p < .05$. The patients with chronic wounds agreed and strongly agreed for the following items: "I feel anxious about my wound" (68%), "I feel frustrated at the time it is taking for the wound to heal" (59.3%), "The appearance of the wound site is upsetting" (65.8%). They strongly disagreed or disagreed for the following items: "I am confident that the wound I have will heal" (85.5%) and "I worry that I may get another wound in future" (56.4%).

As seen in figure 1, when the patients were asked to rate their quality of life and satisfaction with the overall quality of life in a visual analogue scale of 0 (worst possible) to 10 (best possible), the mean and SD were 5.22 ± 2.508 and 6.89 ± 2.388 respectively.

The results of association of wellbeing scores, quality of life and satisfaction scores with demographic and clinical profile of the patients with chronic wounds are presented in table 3. A one-way analysis of variance showed that the wellbeing mean scores and satisfaction with overall quality of life scores were significantly different with type of wounds, $F(3, 271) = 4.49$, $p = .004$, and $F(3, 271) = 4.35$, $p = .005$. Post hoc comparisons using Tukey HSD showed that patients with pressure ulcers had worse wellbeing scores ($M=11.16$) and low satisfaction with overall quality of life ($M=5.90$) than patients with other type of wounds. There was also a significant mean difference found between the age group and the wellbeing scores, $F(3, 271) = 3.47$, $p = .017$. Post hoc comparisons revealed that patients above 60 years reported poor wellbeing scores ($M=11.09$) than other age groups. There was also a significant mean difference found between the educational levels of patients and the wellbeing scores. Patients with lower educational levels had poor wellbeing ($M=10.64$) than the patients with higher educational levels ($M=10.15$), $t(273) = 2.18$, $p = .03$. There was a significant difference in the perception of wellbeing between male and female patients with chronic wounds, $t(273) = -2.71$, $p = .007$. Female patients had reported poor wellbeing ($M=10.87$) compared with the male patients ($M=10.25$). There were no significant differences in the mean scores of wellbeing, quality life and satisfaction of overall quality of life with other demographic and clinical characteristics of the participants.

As presented in table 4, there was a significant positive correlation between quality of life and satisfaction with overall quality of life of patients with chronic wounds, ($r(275) = .44$, $p < .001$). Negative

correlations existed between wellbeing scores and the quality of life, ($r(275) = -.28, p < .001$) and satisfaction with overall quality of life, ($r(275) = -.30, p < .001$).

Discussion

Patients with chronic wounds face challenges and obstacles in several aspects of their daily living. The presence of chronic wounds tends to lead a person to negative feelings of wellbeing in physical, emotional and social spheres of life; as well, it can affect the quality of life and satisfaction with their overall quality of life.

In the present study, Omani patients above 31 years old with chronic wounds accounted for more than 80% of the participant population with males being the majority of around 65%. A study on American patients have revealed that male gender and old age are risk factors for chronic wounds [21]. This result is widely observed and most probably due to the fact that men and the elderly are at higher risk for type 2 diabetes, accidents, and vascular diseases which increase their risks for chronic wounds more than females and younger adults [22]. Moreover, the better management of diseases, especially infectious, cardiovascular and cancer in the older population increased the survival rate, and consequently the prevalence of chronic wounds in the elderly [23].

Diabetic ulcers were the most common types of wounds in almost 30% of patients while surgical wound ulcers were the second. The Arab region is estimated to have the highest diabetes mellitus prevalence worldwide and reports have shown a recent increase in the prevalence among Omani nationals, and this prevalence is expected to increase significantly in the upcoming years [24]. This might explain why diabetic ulcers the most common type of wounds are observed in this study.

A study in Oman revealed that the level of knowledge about chronic wounds in general and Pressure ulcers wound is relatively low among nurses. Most Omani nurses were unfamiliar with the management of wounds as they lacked knowledge and skills [25]. The majority of the participants expressed a low wellbeing level with the majority reporting not being confident that the wound will ever heal, and many felt anxious about their wound. The wellbeing of a patient with chronic wound should be given more attention by empowering the health care providers caring for them in the clinical setting.

Several factors negatively influenced wellbeing in patients with chronic wounds including female gender, older age, low educational level, and the type of wounds. In this study, the predominant level of education was elementary and high school education. This is in line with the studies carried out in other places [26, 27]. Lower levels of education may lead to extended recovery time because of lack of understanding of self-care management and non-adherence to the treatment protocol.

In Research, both quality of life and wellbeing are used interchangeably although being related but not the same. Well-being is an emotional response to health circumstances, whereas health-related quality of life refers to how patients evaluate what they perceive to be happening in terms of your health. Participants in this study expressed a relatively low level of quality of life and low level of satisfaction

with their overall quality of life. The findings are similar with another research conducted across the world [27-29]. One possible reason could be due to a non-optimal care. A study in Oman revealed that the level of knowledge about chronic wounds in general and Pressure ulcers wound is relatively low among nurses. Most Omani nurses were unfamiliar with the management of wounds as they lacked knowledge and skills [25]. Patients with pressure ulcers reported lower satisfaction with overall quality of life. Pressure ulcers are a common chronic wound affecting approximately 1 in 7 hospital and 1 in 20 community patients [30, 31]. Many patients with pressure ulcers have viewed the ulcer as “the worst thing that can happen”. The impact of pressure ulcers on an individual is tremendous, ongoing, and unique. Research focussing on the impact of pressure ulcers is limited and it presents the need to understand their issues and challenges. A success story of a hospital in Abu Dhabi, which implemented risk assessment and prevention pathway protocols, reported the reduction in prevalence of pressure ulcers [32] and improvement in satisfaction of quality of life of patients can be trailed in the clinical setting of Oman too.

It was also observed that female patients perceived that their wellbeing was adversely affected more than males. It is well established in the literature that women are more prone to negative health and wellbeing than men [33]. Existing data reveals that women with diabetes feel that they are not supported by the family members, friends and health care providers [34]. In a Gulf country like Oman where the role of women is mostly confined to the care of the home and family, chronic wounds could greatly affect their caring role. Franks MM and Stephens MAP [35] showed that women might feel guilty if they are not able to meet their care duties and responsibilities. Women are found to be using negative coping styles such as emotion-focussed, which can lead to poor emotional wellbeing [36]. More research focussing on the emotional aspects and coping mechanisms of women with chronic wound could shed extra light in this area.

When the factor “quality of life” is increased, the satisfaction level on quality of life is also increased. Both are reported to be low when the wellbeing of the patient is reduced in this study. The Sultanate of Oman is a beautiful country with the culture as rich as any other Arab nation encourages the individual to follow their religious practice of faith in God in all situations. This religious coping is interpreted as a strategy used to deal with uncertainties associated with the disease and overcome crises [37]. Holistic care of patients with chronic wounds through a multi-disciplinary team approach can improve the wellbeing as well the quality of life and satisfaction of these patients.

Limitations

One of the major limitations in our study is the consecutive sampling approach that relied on research assistant nurses to recruit participants. This limitation could lead to the recruitment of a sample that is not representative of the population because patients who are more prone to participate are those who are chronically ill [38]. This was true for our population where most participants have more than one comorbidity. This study was conducted among Omani population attending the three tertiary care

hospitals in Muscat city which leaves it open to cultural bias. The data was collected using a self-reported questionnaire which makes it subjective, and this may affect the accuracy and precision.

Conclusions

To attain optimal patient care, the health care professional must understand the impact of chronic wounds on the wellbeing, quality of life, and satisfaction of patients. Living with chronic wounds can cause emotional distress which is known to impact the physiologic process of wound healing [39]. Moreover, interventions tackling wellbeing have been shown to improve healing of both acute and chronic wounds [39]. Therefore, having a greater focus on patients' wellbeing could be key to offering better health outcomes. Coping strategies such as social support networks which provide emotional help need to be developed especially tackling new patients with chronic wounds. Hospitals should provide support for patients to explore new relaxation techniques, which might improve patients' wellbeing and enhance their health-related quality of life.

Declarations

Ethical approval and consent to participate – Written informed consent with the signature of the participant was obtained before collecting data.

Consent for publication – All the authors have agreed for publication

Availability of supporting data – If needed it will be made available

Competing interests - None

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Author's contributions – First and second author contributed from the conception of the study to manuscript preparation. All other authors contributed in data collection, data entry, data analysis, reviewing and revising the manuscript.

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Tables

Table 1. Demographic and clinical profile of the participants

Demographic Characteristics	Categories	Frequency	Percent
Age	15 - 30 years	51	18.5
	31 - 45 years	87	31.6
	46-60 years	73	26.6
	Above 60 years	64	23.3
Gender	Male	178	64.7
	Female	97	35.3
Educational level	Lower level(up to high school)	179	65.1
	Higher level (Higher secondary and above)	96	34.9
Marital status	Unmarried	53	19.3
	Married	190	69.1
	Separated/Divorced	12	4.4
	Widowed	20	7.2
Monthly Income	less than 1000 riyals	244	88.7
	Above 1000 riyals	31	11.3
Occupation	Employed	102	37.1
	Unemployed/student	69	25.1
	Housewife	45	16.4
	Pensioner	59	21.4
Type of wound	Diabetes ulcer	80	29.1
	Pressure ulcers	51	18.5
	Surgical wound ulcers	61	22.2
	(Others) Traumatic , burn, arterial and venous ulcers	83	30.2

Wound severity	Minimum	50	18.2
	Mild	126	45.8
	Moderate	70	25.4
	Extreme	29	10.6
Presence of Co-morbidities	Yes	187	68.0
	No	88	32.0
Treatment	Medications and dressing	176	64.0
	Medication, dressing after wound debridement	99	36.0

Table 2. Perceived Wellbeing scores of the participants

Wellbeing Items	Strongly disagree and disagree		Agree and strongly agree		p value
	Frequency	Percent	Frequency	Percent	
I feel anxious about my wound	88	32	187	68	.000
I feel frustrated at the time it is taking for the wound to heal	112	40.7	163	59.3	.002
I am confident that the wound I have will heal	235	85.5	40	14.5	.000
I worry that I may get another wound in the future	155	56.4	120	43.6	.035
The appearance of the wound site is upsetting	94	34.2	181	65.8	.000
I feel anxious about bumping the wound site	147	53.5	128	46.5	.252
I worry about the impact of the wound on my family/ friends	140	50.9	135	49.1	.763

Table 3. Association of wellbeing and satisfaction scores with the demographic and clinical profile of the participants

Demographic characteristics	Category	N	Mean of wellbeing scores	Std. Deviation	F/T value	P value
Type of wound	Diabetic ulcers	80	10.14	1.914	4.490	.004
	Pressure ulcers	51	11.16	1.391		
	Surgical wounds	61	10.11	1.790		
	Trauma, burn, arterial and venous ulcers	83	10.63	1.846		
Educational level	Lower education level	179	10.64	1.813	2.180	.030
	Higher education levels	96	10.15	1.777		
Gender	Male	178	10.25	1.819	-2.711	.007
	Female	97	10.87	1.742		
			Mean scores of satisfaction with QOL			
Type of wound	Diabetic ulcers	80	7.40	2.138	4.352	.005
	Pressure ulcers	51	5.90	2.617		
	Surgical wounds	61	6.89	2.388		
	Trauma, burn, arterial and venous ulcers	83	7.01	2.330		

Table.4. Descriptive statistics and correlation between wellbeing, quality of life and satisfaction

Variable	n	M	SD	1	2	3
How good is your quality?	275	5.22	2.508	-		
How satisfied are you with your overall quality of life?	275	6.89	2.388	.440**	-	
Wellbeing Score	275	10.47	1.813	-.282**	-.300**	-

****.** Correlation is significant at the 0.01 level (2-tailed).

Figures

Figure 1

Mean and SD of Quality life and satisfaction scores as perceived by the patients