

Functional capacity and quality of life of adults and elderly people with wounds

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ABSTRACT:

Introduction. Wounds affect the general population and negatively compromise the quality of life and generate biopsychosocial impacts. **Objective.** Analyze the association between functional capacity and quality of life in adults and elderly people with chronic wounds. **Methods.** Cross-sectional study with 135 people with chronic wounds registered in the primary health care services of a municipality in Minas Gerais, Brazil. For data collection carried out from 2017 to 2018, the following were used: i) Cardiff Wound Impact Schedule, which was translated, culturally adapted and validated for the Brazilian Portuguese language; ii) Katz Index and iii) a sociodemographic questionnaire with information about the health/illness profile and injury characteristics. Results. There was a predominance of female participants (59.3%), aged over 60 years (70.4%), and until 4 years of study (72.6%). In the Cardiff Wound Impact Schedule questionnaire, the domain with the lowest score was well-being (mean 45.6 ± 18.2). In the evaluation of functionality using the Katz Index, 30 (22.2%) people were considered dependent on bathing and 33 (24.4%) needed help to get around. There was a statistically significant association between the following independent variables of the Katz Index and Cardiff Wound Impact Schedule for "social life" and "bathing", "social life" and "dressing", "social life" and "personal hygiene", "social life" and "locomotion", "social life" and "feeding", "physical symptoms and daily life" and "dressing", "well-being" and "continence". **Conclusions.** Functional disability is associated with decreased quality of life in adults and elderly people with chronic wounds.

Keywords: Wounds, Functional capacity, Quality of life, Primary health care, Enterostomal therapy.

INTRODUCTION

Wounds are defined as any interruption in the continuity of body tissue, to a greater or lesser extent, resulting from trauma or clinical conditions [such as diabetes mellitus (DM), systemic arterial hypertension, neoplasms, and leprosy], which present a difficult healing process and lasts for more than six weeks. Consequently, they generate high costs for health services since they demand home care, prolonged hospitalizations, and complex treatments.¹

It is noteworthy that chronic lesions affect 5% of the adult population in Western countries, are slow to develop, refractory to various types of treatment, and result from systemic biological conditions that hinder normal healing. Other factors that directly interfere with healing and tend to contribute to the chronicity of these wounds are advanced age, personal hygiene, poor nutritional status, prolonged immobility, neurological

injuries, spinal cord trauma, and difficulties in accessing health services.^{2,3}

In Brazil, chronic wounds affect the general population regardless of sociodemographic issues such as gender, age, or race.⁴ There are no data on the number of people with chronic wounds in Brazil, but a study carried out in Primary Care in Teresina identified a prevalence of 11.8% of this condition among the elderly in the urban area.⁵ Studies state that chronic wounds negatively compromise the quality of life (QoL) and generate physical, social and emotional impacts on these people and their families.^{3,5,6}

As far as QoL is concerned, the concept varies according to different cultures. However, the assessment of QoL is necessary because it enables the individualization of care, as well as provides an understanding of the consequences of diseases and treatments to health professionals.⁷ In Brazil, the concept of QoL is based on the understanding that the individual possesses

in relation to the cultural context in which they live, their social position, goals, expectations, and concerns.³ Furthermore, functional capacity is considered to be the absence of difficulty to perform the activities of daily living (ADLs). Therefore, it is fundamental to maintain people's well-being and autonomy. Any addiction can negatively affect biopsychosocial aspects in addition to directly affecting QoL.³

In this sense, it is believed that studies that allow us to know the sociodemographic profile allied to the functional capacity and QoL of people with wounds can contribute to the adoption of measures that identify risk factors for their development, being increasingly necessary for nursing, the promotion of assertive treatment actions to improve the quality of care for this population. Therefore, this study aimed to analyze the association between functional capacity and QoL of adults and elderly with wounds.

METHODS

This was a cross-sectional study that followed the guidelines of the *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE), conducted from July 2018 to February 2019 in a medium-sized municipality in Minas Gerais state, Brazil, which has 71.04% of the population covered by Primary Health Care (PHC) services.⁸

All people with wounds registered at the PHC units in the urban area of the municipality who were 18 years or older and could answer for themselves were invited to participate in the study. The inclusion criteria were: the presence of wounds longer than six weeks, being followed up by the PHC health team, and being older than 18 years.

The identification of the population eligible for the study occurred by consulting the database of the municipality's Health Information System (172 adults and elderly). After this survey, the researchers from the Enterostomal Therapy Research Center of the Federal University of São João del-Rei made telephone contact, and all people with wounds were invited to participate in the research. After acceptance, a home visit was

scheduled for data collection, where participants were informed about the research and, after consent, two copies of the Informed Consent Form (ICF) were signed.

This study was approved by the Ethics Committee for Research Involving Human Beings of the Universidade Federal de São João del-Rei, Campus Centro-Oeste, Divinópolis-MG, CAAE 07330012.8.0000.5545, under opinion number 863.835, November 10, 2014.

One hundred and thirty-five people with wounds participated in the study. Data collection was performed by an interview using a structured questionnaire prepared by the researchers where sociodemographic and clinical information, as well as the application of instruments validated for Brazil (Katz Scale^{9,10} and Cardiff Wound Impact Schedule^{11,12}).

The sociodemographic questionnaire was composed of four sections: the first contained information to identify the participant (name, Health Information System Code, health unit, professional responsible for the treatment, and date of data collection). The second contained information about the socioeconomic profile: date of birth, age (≤ 60 or > 60), place of birth, sex (female and male), telephone, address, religion, color/race, schooling (years of study), literacy, profession, occupation, income, number of residents in the residence, housing, location, sanitation. The third section had information on lifestyle habits and past history: sleep, insomnia, eating route, dietary habits, water intake, physical activity, alcoholism, smoking, preexisting diseases (DM, Systemic Arterial Hypertension, stroke, congestive heart failure, renal failure, hypothyroidism hyperthyroidism, dyslipidemia, dementia, Parkinson's disease, leprosy, anemia, urogenital cancer, skin cancer, venous and/or arterial insufficiency, obesity, cataract, depression, respiratory, autoimmune, and rheumatic diseases), and medications used.

The definition of alcoholism according to the World Health Organization (WHO) is the chronic, continuous, or periodic consumption of alcoholic beverages, as well as uncontrolled consumption, frequent intoxication, and alcohol dependence.¹³ The definition of smoking is the act of smoking sporadically or daily.¹⁴ Next, the fourth section

covered information on the simplified physical examination (personal hygiene, physical mobility, blood pressure, weight, height, BMI, and pain).

The questionnaire about the clinical history had questions to be filled out by the researcher for a better understanding of the management of the wounds such as: location, time of existence, the reason for the wound appearing, whether it is the first occurrence or if it is a recurrence, classification (acute or chronic), odor, technique/solution used for cleaning, who performs the dressing, coverage used, the main difficulty in performing the dressing.

The Katz scale (KS) is an instrument developed to assess the treatment outcome functionality in the elderly and prognosis in the chronically ill. It contains six items that measure people's performance in ADLs and self-care, such as: feeding, sphincter control, transferring, personal hygiene, dressing, and bathing. Interpretation of results: 0 = independent in all six functions; 1 = independent in five functions and dependent in one; 2 = independent in four functions and dependent in two; 3 = independent in three functions and dependent in three; 4 = independent in two functions and dependent in four; 5 = independent in one function and dependent in five; 6 = dependent in all six functions.⁹ After each participant was classified, they were divided into independent and dependent; those who were not dependent in performing any of the six functions and dependent were considered independent and those who had at least one dependency in all six functions. Since a person becomes dependent on another person from the moment that one needs help to perform a basic daily activity.

The Cardiff Wound Impact Schedule (CWIS)¹¹⁻¹² is a self-administered instrument with 57 questions divided into three sections: the first verifies demographic and clinical characteristics; the second measures the impact of the wound on lifestyle; the third proposes a self-assessment of QoL. The first section has 10 questions about personal data. The second section has 45 questions distributed over three domains: well-being (questions 1 to 7), physical symptoms and daily life (questions 8 to 31), and social life (questions 32 to 45). Each question is scored from 1 to 5, according to a Likert-type scale. The last section has

two questions and proposes a self-assessment, scored from 1 to 10, according to a Likert-type scale. Question 3 of the "well-being" domain is inversely scored, from 5 to 1. The instrument provides the score for the domains separately, there is no overall score for the questionnaire. For the calculation, the scores are transformed so that the domain scores range from 0 to 100, where higher values are indicative of better QoL. It is noteworthy that the CWIS instrument was used, which was translated, culturally adapted, and validated for the Brazilian Portuguese language.¹¹

The statistical analyses were performed using the software Statistic Package for the Social Sciences (SPSS) version 2.0, processed by double entry of data to control for possible errors. Compare QoL in its domains (well-being, physical symptoms, and daily life and social life) with KS in activities of daily living (eating, sphincter control, locomotion, hygiene, ability to dress and bathe). The dependent variable was the QoL score for people with wounds by the CWIS instrument. The independent variables were the degree of dependence according to the KS, which is an instrument that assesses the functional capacity of patients. The measures of central tendency (median, mean), dispersion (standard deviation), minimum and maximum values, and relative frequency of the study variables were performed. The association between QoL and KS was performed using the Kruskal-Wallis independent samples test. Comparisons that showed results with $p < 0.05$ were considered statistically significant.

RESULTS

Regarding the sociodemographic characteristics of the 135 participants with wounds, 80 (59.3%) were female aged over 60 years (70.4%). Regarding the participants' education, 98 (72.6%) people studied from 0 to 4 years, 33 (24.4%) people studied 5 years or more and 4 people were unable to inform. Among the main comorbidities, there was a predominance of Systemic Arterial Hypertension (58.5%) and DM (32.6%). People with concomitant Systemic Arterial Hypertension and DM totaled 24.4% of the population, and 46.7% of them had other chronic noncommunicable diseases

(CNCDS). Regarding lifestyle habits, 42 (31.1%) people were drinkers, 34 (25.2%) smokers, and 124 (91.9%) were sedentary. The median age of the participants was 67 years, and the median education was 4 years (Table 1).

Table 2 presents the QoL scores on the CWIS questionnaire. Among the domains with a minimum score of 0 and a maximum score of 100, the domain with the lowest average score was well-being, with an average of 45.6 ± 18.2 .

On the CWIS instrument, 77 people (57%) said they had some walking difficulty, 57 people

(42.2%) had difficulty walking indoors, and 82 people (60.7%) had difficulty walking outdoors. Moreover, 48 people (35.6%) said they had difficulty with bathing, 73 people (54%) had problems with ADLs, and 77 people (57%) were dependent on others.

In Table 3, QOL was compared with the Katz Scale. There was a statistically significant association ($p < 0.05$) between the following KS and CWIS independent variables: social life and bathing, social life and dressing, social life and personal hygiene, social life and locomotion, social life and eating, physical symptoms and daily life and dressing, well-being and continence. In the functionality evaluation performed using the KS, 30 (22.2%) people were considered dependent for bathing, while 20 (14.8%) people were dependent for personal hygiene, and 23 (17%) were dependent for getting dressed. Regarding bowel movements and physiological eliminations, 17 (12.6%) people depended on help to perform them, 33 (24.4%) people needed help to move around, and 8 (5.9%) people depended on help to feed themselves. In 89% of the associations between the three CWIS domains and the six KS items, people who were dependent on help had lower mean scores than independent people (Table 3).

Table 1

Sociodemographic and clinical profile of people with wounds, Brazil, 2018 (N = 135).

Variables	N	%
Sex		
Female	80	59.3
Male	55	40.7
Age		
≤ 60 years old	40	29.6
> 60 years old	95	70.4
Education (years)		
0 to 4 years	98	72.6
5 years or more	33	24.4
Could not inform	04	3.0
Comorbidities		
SAH	80	58.5
DM	44	32.6
SAH + DM	33	24.4
Others NTCDs	63	46.7
Lifestyle habits		
Alcoholics	42	31.1
Smokers	34	25.2
Sedentary	124	91.6

N = number of participants; % = percentage.

DISCUSSION

This population consisted predominantly of women and elderly people with a low level of education. This result corroborates other studies, which state that women's life expectancy is longer than men's, because they are less exposed to risk situations (automobile accidents, licit and

Table 2

Scores of quality of life (QoL) domains of people with wounds, Brazil, 2018 (N = 135).

	Well-being	Domains				
		Physical symptoms and daily life	Social life	QoL1	QoL2	
Score	Mean ± standard deviation	45.6 ± 18.2	72.1 ± 17.3	69.9 ± 20.2	7.3 ± 2.4	7.6 ± 2.6
	Minimum	7.1	23.9	21.4	01	01
	Maximum	89.3	100	100	10	10

N = number of participants.

Table 3

Association between basic activities of daily living and quality of life domains, Brazil, 2018 (N = 135).

Basic activities of daily living	N (%)	CWIS domains							
		Well-being		<i>p</i> *	Physical symptoms and daily life		<i>p</i> *	Social life	
		M (min-max)			M (min-max)			M (min-max)	
Bathing									
Independent	105 (77.8)	42.9 (7.1-89.3)	0.438	75 (33.3-100)	0.205	75 (21.4-100)	0.032		
Dependent	30 (22.2)	44.6 (7.1-75.0)		67.2 (24-92.7)		62.5 (21.4-96.4)			
Getting dressed									
Independent	112 (83.0)	46.4 (7.1-71.4)	0.608	75.5 (33.3-100)	0.015	75 (21.4-100)	0.001		
Dependent	23 (17.0)	39.3 (7.1-71.4)		64.6 (24.0-88.5)		55.4 (25.0-100)			
Personal hygiene									
Independent	115 (85.2)	46.4 (7.1-75.0)	0.249	75.0 (33.3-100)	0.142	75.0 (21.4-100)	0.005		
Dependent	20 (14.8)	35.7 (7.1-75.0)		66.1 (24.0-88.5)		57.1 (25.0-85.7)			
Locomotion									
Independent	102 (75.6)	42.9 (7.1-89.3)	0.102	75.0 (33.3-100)	0.099	75.9 (21.4-100)	0.001		
Dependent	33 (24.4)	42.9 (7.1-78.6)		66.7 (24.0-90.6)		60.7 (21.4-85.7)			
Continence									
Independent	118 (87.4)	44.6 (7.1-89.3)	0.030	75.0 (24.0-100)	0.500	73.2 (21.4-100)	0.050		
Dependent	17 (12.6)	35.7 (7.1-75.0)		66.7 (34.4-88.5)		57.1 (32.1-85.7)			
Feeding									
Independent	127 (94.1)	42.9 (7.1-89.3)	0.560	75.0 (24.0-100)	0.066	73.2 (21.4-100)	0.014		
Dependent	8 (5.9)	37.5 (21.4-64.3)		59.4 (34.4-83.3)		49.1 (37.5-69.6)			

N = number of participants; M = median; min = minimum; max = maximum; **p* = independent-samples Kruskal-Wallis test.

illicit drug use), besides using health services more frequently due to gynecological and obstetric conditions. Because of this, they have higher numbers of wounds that mainly affect older people.^{15,16}

It is noteworthy that elderly people have a higher occurrence of wounds because the integrity of the skin is more susceptible to ruptures as a result of the cellular aging process and the decrease in dermal thickness. Furthermore, one must consider that elderly people are vulnerable to the consequences of CNCs that can compromise circulation and consequently wound healing.¹⁷

It is known that CNCs are triggered by social determinants of health that shape the conditions of daily life in which people are born, grow, work, live, and age. Among the social determinants that affect the health of individuals negatively are: smoking, alcoholism, sedentary lifestyle, poor working conditions, environmental pollution, low income, low education, and stressful

circumstances.¹⁸ Moreover, some of these social determinants were identified in this study, among them, smoking, alcoholism, sedentary lifestyle, and low education.

Low education is a risk factor for health and disability when coupled with a lack of financial resources and access to health services. Therefore, it can cause damage to the health and QoL of individuals.^{19,20} Given this, it is important that health professionals improve their communication skills and adapt the orientations to the educational and cultural level of the patient since orientations are essential for the continuity of treatment and health promotion.²¹

In addition, the sedentary lifestyle was high among the research participants, which is a cardiovascular and metabolic risk factor. The main harmful effect of a sedentary lifestyle is the development of DM.²²

In this research, the occurrence of Systemic Arterial Hypertension and DM was also registered, which corroborates the results of

other studies that state that CNCs, as well as their decompensation, can generate complications and compromise the individual's functional capacity. These comorbidities can cause social isolation, loss of self-esteem, poor self-care, and affect QoL.^{3,19,20,23}

Corroborating the findings of this study, it is known that the main factors in functional decline are aging, socioeconomic status, gender, education, income, and CNCs.²⁴ In the present study, participants reported having difficulties performing daily tasks that lead to dependence on others. Individuals who find themselves in this situation become vulnerable and their autonomy is limited, which compromises their self-care and social life. Consequently, it causes psychological damage, in addition to impacting the family, society, and the healthcare system.^{6,20,24}

Thus, wounds can cause pain, edema and hinder mobility, factors that impair functional capacity.³ People's mobility is impaired mainly in outdoor environments where there is a greater existence of physical barriers that increase the risk of falling among people who already have other risk factors, such as imbalance, low physical performance, visual impairment, pain, decreased sensitivity, use of medication, etc.^{1,6,20,23,25}

Furthermore, the findings of this study revealed that people had some difficulty getting around inside and/or outside the home. In addition, there was statistical significance in the association between the domain "social life" and the items "locomotion" and "food", which highlights the limitation that these people must interact socially and perform the ADLs. As other studies also point out, self-care and functional capacity regarding the need to commute to distant points (i.e., shopping and carrying them, performing physical activities) and nearby commutes (i.e., preparing one's own meals, using the bathroom, dressing) is affected by aging, CNCs, and painful wounds.^{3,6,26}

Although aging is not the only factor responsible for incontinence, the physiological changes that occur over the years have the potential to damage the urinary and fecal systems. The difficulty of locomotion combined with incontinence may contribute to the appearance of wounds caused by moisture.²⁷

As a result of this study, there was statistical significance in the association between the domain "well-being" and the item "continence", besides the fact that about 13% of the people depended on help for bowel and urinary elimination. This dependence is considered embarrassing, with the potential to lead to social isolation and cause psychological damage to the person, in addition to decreasing QoL and well-being.^{3,6,27}

On the other hand, hygiene habits are also impaired in people with these conditions. In the present study, there was statistical significance in the associations between the domain "social life" and the items "personal hygiene", "bathing" and "dressing", as well as the domain "physical symptoms and daily life" and the item "dressing". Approximately 22% of people rely on help to bathe and perform personal hygiene, acts that are important for removing pathogenic microorganisms that build up on the skin during the day and can infect the wounds. Moreover, it provides well-being, comfort, and improved self-image.²⁸

Thus, the stimulation of autonomy and independence of people with wounds is important for them as well as for their families and society. The need for health professionals to be qualified to assess the functional level is indicated, which can be done through the use of validated instruments such as the KS, in addition to monitoring risk factors for the prevention and/or reduction of dependence, stimulating the autonomy and independence of these people, as well as planning strategies to maintain functional capacity.^{19,24}

The limitation of the study concerns the particularities of a cross-sectional study conducted in a single municipality and, therefore, its results cannot be generalized, nor can it determine causality among the variables studied. Thus, it is necessary to conduct longitudinal studies that investigate the relationships between factors associated with functional capacity and QoL in this population. In addition, there was sample loss due to incomplete data.

CONCLUSIONS

This study profiled people with wounds and investigated their functional capacity and QoL in a municipality in the mid-western of Minas

Gerais. There was a predominance of female participants, aged over 60 years, with low education and high rates of sedentary lifestyles and CNCDs. It was found that QoL is related to the functional capacity and autonomy that the person has when performing ADLs, and the more dependent the person is, the worse their QoL is. The results point to the need for health professionals who provide care to people with wounds, especially in PHC services, to qualify user-centered care by investigating the impact of the lesion on QoL, as well as the performance in performing ADLs and self-care.

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