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HEALTH LOCUS OF CONTROL AND HOPE FOR CURE IN INDIVIDUALS WITH DIABETIC FOOT ULCER

LOCUS DE CONTROLE DA SAÚDE E ESPERANÇA DE CURA EM INDIVÍDUOS DIABÉTICOS COM ULCERAÇÃO NO PÉ

LOCUS DE CONTROLE DA SAÚDE E ESPERANÇA DE CURA EM INDIVÍDUOS DIABÉTICOS COM ULCERAÇÃO NO PÉ

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ABSTRACT

Objective: to compare the health locus of control and hope for cure among diabetic patients with and without ulcerated feet. **Method:** a quantitative, descriptive, analytical, controlled study with 118 adult diabetic patients, of which 59 patients without ulceration and 59 patients with foot ulcer. The instruments used were the Health Locus of Control Scale, and the Herth Hope Scale. **Results:** patients with and without ulcerated feet presented a mean score of 8.98 and 27.90, respectively, in the Herth Hope Scale, and 9.56 and 28.05, respectively, in the Health Locus of Control Scale, with significant difference between groups. **Conclusion:** the diabetic patients without ulceration expressed hope for cure and believed that the improvement or cure of the disease depends on the professionals involved in their care. On the other hand, diabetic patients with ulcerated feet showed little hope that the wound would improve or heal. **Descriptors:** Diabetes Mellitus; Diabetic Foot; Hope; Nursing Care.

RESUMO

Objetivo: comparar o locus de controle da saúde e esperança de cura entre pacientes diabéticos com e sem pé ulcerado. **Método:** estudo quantitativo, descritivo, analítico, controlado, realizado com 118 pacientes diabéticos adultos, 59 pacientes sem ulceração e 59 pacientes com ulceração no pé. Foram utilizados os instrumentos: Escala de Locus de Controle da Saúde e Escala de Esperança de Herth. **Resultados:** os pacientes com e sem pé ulcerado apresentaram um escore médio de 8,98 e 27,90, respectivamente, para a Escala de Esperança de Herth, e 9,56 e 28,05, respectivamente, para a Escala de Locus de Controle da Saúde, com diferença significativa entre grupos. **Conclusão:** os pacientes diabéticos sem ulceração manifestaram esperança de cura e acreditavam que a melhora ou cura da doença depende dos profissionais envolvidos em seus cuidados. Já os pacientes diabéticos com pé ulcerado apresentaram pouca esperança de que a ferida fosse melhorar ou cicatrizar. **Descritores:** Diabetes Mellitus; Pé Diabético; Esperança; Cuidados de Enfermagem.

RESUMEN

Objetivo: comparar el locus de control de la salud y esperanza de cura entre pacientes diabéticos con y sin pie ulcerado. **Método:** estudio cuantitativo, descriptivo, analítico, controlado, realizado con 118 pacientes diabéticos adultos, 59 pacientes sin ulceración y 59 pacientes con ulceración en el pie. Fueron utilizados los instrumentos: Escala de Locus de Control de la Salud y Escala de Esperanza de Herth. **Resultados:** los pacientes con y sin pie ulcerado presentaron un puntaje medio de 8,98 y 27,90, respectivamente, para la Escala de Esperanza de Herth, y 9,56 y 28,05, respectivamente, para la Escala de Locus de Control de la Salud, con diferencia significativa entre grupos. **Conclusión:** los pacientes diabéticos sin ulceración manifestaron esperanza de cura y creían que la mejora o cura de la enfermedad depende de los profesionales envueltos y sus cuidados. Ya los pacientes diabéticos con pie ulcerado presentaron poca esperanza de que la herida fuese mejorar o cicatrizar. **Descriptor:** Diabetes Mellitus; Pie diabético; Esperanza; Atención de Enfermería.

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INTRODUCTION

Diabetes mellitus is a syndrome of multiple etiology resulting from the lack or inability of insulin to properly exercise its effects on the body.¹ According to the World Health Organization and the International Diabetes Federation there was an estimated population of about 160 million people with diabetes mellitus in the year 2002 worldwide. The projections for 2025 are 300 million people with this condition.²

Lower limb ulcers are common in patients with chronic diseases, especially those related to the circulatory system and diabetes mellitus.³ In Brazil, wounds are a serious problem for public health due to the large number of people with chronic and degenerative diseases. However, there is no record of the number of individuals with wounds. It is estimated that 15% of diabetes mellitus patients will develop at least one foot injury throughout life.⁴⁻⁵

Diabetic foot is one of the most devastating chronic complications of diabetes mellitus, due to the large number of cases that progress to amputation. This term is used to characterize the lesion that occurs in the feet of diabetes mellitus patients, resulting from the combination of several factors, such as chronic sensory-motor and peripheral autonomic neuropathy, peripheral vascular disease, biomechanical changes leading to abnormal plantar pressure, and infection, which may be present and further aggravate the case.⁶

Self-care is a process present in the stage of acceptance by the individual of their new physical and physiological condition. This condition should be seen as a necessary therapeutic treatment that aims to improve the pathological condition, with the purpose of healing these patients, not to reduce the quality of life of diabetes patients with foot ulcers, but rather to prioritize their health in all areas.⁷

Some changes in the daily life of these individuals are noticeable, ranging from physiological and anatomical changes to self-care. Besides these physical changes, there are the psychological, emotional, social changes, and these individuals may feel incapable, useless, before activities of their daily life, especially self-care. It is not unusual to see patients ending up showing a change in religiosity and hope, finally losing faith and hope of healing or improvement, fearing being unable to perform self-care. This results in changes in the quality of life, self-esteem, spirituality, self-image,

sexuality, making these patients to isolate from family, social and leisure activities.

Hope is a state related to the positive perspective towards the future, a way of coping with the situation experienced, where the individual has faith and hope for healing or improving. Hope leads individuals to act, give them strength to solve problems of coping such as loss, tragedy, loneliness, illness and suffering.⁸⁻¹⁰ Hopelessness is characterized by passivity, loss of affection and verbalization, and hopeless expressions, decreased responses to stimuli, changes in sleep, lack of initiative and lack of involvement in care. The loss of a part of the body or a wound can lead to profound disorganization of the psychological structure of the individual, de-structuring his corporal scheme, necessitating a complex process of reorganization of life. This process may be mainly responsible for the patient's difficulty in assimilating a prosthesis that may replace the missing limb or adapting to the treatment and the dressing, which must be often done in daily basis, and the change of the secondary dressing may sometimes be necessary more than once a day.^{4,9-10}

Individuals who believe they have a controlling attitude over a successful outcome are more likely to confirm their initial expectations. Life events are viewed by them as challenges to be faced and overcome, so that they repeatedly assure themselves of their success. On the other hand, people who do not believe that they can influence the consequences of their acts end up losing opportunities to exercise control over life events. From this passivity and avoiding difficult tasks, they may refrain from developing new skills.¹¹

Locus of control refers to the beliefs that individuals establish about the source of control of habitual behaviors or events that occur with them or in the environment in which they are inserted, indicating the existence of an internal-external reinforcement control, which alludes to the extent to which the individual believes that the reinforcements are contingent to their conduct.¹²⁻¹³

The evaluation of the locus of control of health, spirituality and hope for cure can become a fundamental instrument in the orientation of health actions to wounded individuals. This evaluation provides subsidies to better understand the psychosocial factors involved with the management difficulties of this chronic disease, diabetes mellitus, with consequent individualized, systematized and humanized care planning.

OBJECTIVE

- To evaluate the health locus of control and hope for cure in diabetes mellitus patients with and without foot ulcers.

METHOD

Primary, descriptive, analytical and controlled study carried out at the São João Ambulatory and at the Basic Health Unit of the Colina de Santa Bárbara neighborhood after approval by the Research Ethics Committee of the Faculty of Health Sciences "Dr. José Antônio Garcia Coutinho" under the Opinion (CAAE) number 748.536.

The study included 118 diabetic patients, distributed into 59 patients in the control group (diabetic patients without foot ulcers) and 59 in the study group (diabetic patients with foot ulcers).

The inclusion criteria of the control group were: patients aged 18 years or older; with type 1 and 2 diabetes mellitus; and without foot ulcers. The inclusion criteria of the study group were: patients aged 18 years or older; with type 1 and 2 diabetes mellitus; and with foot ulcers.

The inclusion criteria for both groups were: patients with mixed ulcer, arterial and venous ulcer, and patients who had not been diagnosed as diabetic. The instruments used in the data collection were: a questionnaire on the demographic data, the Health Locus of Control Scale, and the Herth Hope Scale.

The Health Locus of Control Scale has been translated and validated into Portuguese language.¹⁴ This scale is composed of three subscales, each containing six items referring to the following dimensions: internality for health (items 1, 6, 8, 12, 13 and 17), where the scores indicate the degree to which the subject believes that he or she controls the own state of health; externality - other powerful influences to health (items 3, 5, 7, 10, 14 and 18), where the scores indicate the degree to which the subject believes that other persons or entities (doctor, nurse, friends, family, God etc.) can control their health status; and externality - chance for health (items 2, 4, 9, 11, 15 and 16), where the scores indicate the degree to which the subject believes that his or her health is

controlled by chance, without interference of the own or other people's influence.

The scores for each dimension vary from 1 to 5, and for as answer alternatives the individual may choose: I totally agree, score 5; I partially agree, score 4; undecided, score 3; I partially disagree, score 2; and I totally disagree, score 1. The score obtained in the dimensions correspond to the sum of the items in the subscale in question. The sum of the values of the items belonging to each of the three subscales represents the total scores in relation to the dimension of the health locus of control. The total value obtained from each subscale can vary between 6 and 30, and the higher the value, the greater is the belief in the dimension. The scale is presented as unique, where the subscale items intersect. The validation of the instrument, after application in four samples, was verified by reliability (internal consistency) using the Cronbach's alpha, and the values for the subscales were: internality for health varying from 0.62 to 0.71; externality-chance for health, 0.51 to 0.78; and externalities-other powerful influences to health, 0.62 and 0.67.¹⁴

The Herth Hope Scale, a Portuguese version of the Herth Hope Index, is an instrument composed of 12 items with total scores ranging from 12 to 48 points, a scale with Likert-type responses, with scores from 1 to 4 points for each one, and the higher the score, the greater is the hope. Items three and six have reversed score.¹⁵

The data collected were organized in a spreadsheet (Microsoft Excel) and analyzed in the Statistical Package for the Social Sciences (SPSS) program version 15.0. The level of significance in the Chi-square test and t-test was set at 5% (P < 0.05).

RESULTS

Table 1 shows that the majority of the research participants of both groups were aged over 60 years, were white-skinned, female, literate and smokers. Only the ethnicity presented statistical difference between the groups.

Table 1. Sociodemographic characteristics of diabetic individuals with and without foot ulcers. Pouso Alegre (MG), Brazil, 2016.

Variables	Group of diabetic patients						P value
	With foot ulcers		Without foot ulcers		Total		
	N	%	N	%	N	%	
Age group							
32 to 60 years	14	23.7	15	25.4	29	24.6	0.487
61 to 64 years	12	20.3	16	27.1	28	23.7	
65 to 67 years	10	16.9	10	16.9	20	16.9	
68 to 72 years	23	39.0	18	30.5	41	34.7	
Mean	63.31		62.37				
Standard deviation	7.245		7.266				
Total	59	100	59	100	118	100	
Ethnic group							
White	39	66.1	50	84.7	89	75.4	0.031*
Non-white	20	33.9	9	15.3	29	24.6	
Total	59	100	59	100	118	100	
Gender							
Male	19	32.2	19	32.2	38	32.2	1.00
Female	40	67.8	40	67.8	80	67.8	
Total	59	100	59	100	118	100	
Schooling							
Literate	36	61.0	44	74.6	80	67.8	0.292
Incomplete elementary school	12	20.3	8	13.6	20	16.9	
Complete elementary school	11	18.6	7	11.9	18	15.3	
Total	59	100	59	100	118	100	
Tobacco smoking							
Yes	41	69.5	44	74.6	85	72.0	0.682
No	18	30.5	15	25.4	33	28.0	
Total	59	100	59	100	118	100	

Chi-squared test.*Statistical significance (P < 0.05)

In Table 2, we observe that lesions had odor and exudate in the majority of individuals with diabetic foot ulcers. All

variables presented a statistically significant difference.

Table 2. Presence of exudate and odor on the foot injury. Pouso Alegre (MG), Brazil, 2016.

Variables	n	%	P VALUE
Presence of exudate			
Yes	47	39.8	0.048*
No	12	10.2	
Total	59	50	
Presence of odor			
Yes	52	44.1	0.023*
No	7	5.9	
Total	59	50	

Chi-squared test. *Statistical significance (P < 0.05)

Table 3 shows that the mean score on the Herth Hope Scale was 8.98 for individuals with foot ulcers and 27.90 for individuals without foot ulcers. As for the Health Locus of Control Scale, the mean score was 9.56 for individuals with foot ulcers and 28.05 for individuals without ulcers, with a significant difference

between groups. These findings show that diabetic patients with ulcerated foot who participated in the research have little hope for cure or improvement of the wound, and they believe that they themselves are responsible for the improvement or the healing of the wound.

Table 3. Analysis of the total scores of the Health Locus of Control Scale and the Herth Hope Scale in diabetic individuals with and without foot ulcers. Pouso Alegre (MG), Brazil, 2016.

Group	N	Total scores					P value
		Mean	Median	SD	Minimum	Maximum	
Herth Hope Scale							
With foot ulcers	59	8.98	9.0	2.668	6	14	0.001*
Without foot ulcers	59	27.90	28.0	1.826	24	30	
Total	118	18.44	19.0	9.767	6	30	
Escala de Locus de Controle da Saúde							
With foot ulcers	59	9.56	9.0	2.095	6	15	0.001*
Without foot ulcers	59	28.05	28.0	1.934	22	30	
Total	118	18.81	18.5	9.500	6	30	

Kruskal-Wallis Test. * Statistical significance (P <0.05); SD = standard deviation.

Table 4 lists the mean scores for the dimensions of the Health Locus of Control Scale, showing that in the dimension Internality for Health, diabetic patients with foot ulcers presented a mean of 2.93, while diabetic patients without foot ulcers had a mean of 27.12. The mean score in the dimension Externality - other powerful influences was 3.37 for diabetic patients with foot ulcers and 27.7 for diabetic patients

without foot ulcers. Regarding the dimension Externality - chance for health, the mean was 2.83 for diabetic patients with foot ulcers and 28.14 for diabetic patients without foot ulcers. Such findings indicate that individuals with foot ulcers believe that they themselves control their health status, that is, they are responsible for improving the healing of the wound.

Table 4. Scores for the dimensions of the Health Locus of Control Scale in diabetic individuals with and without foot ulcers. Pouso Alegre (MG), Brazil, 2016.

Group	Scores by Dimension						P value
	N	Mean	Median	SD	Minimum	Maximum	
Internality for health							
With foot ulcers	59	2.93	3.0	0.962	1	5	0.001*
Without foot ulcers	59	27.12	28.0	4.403	10	30	
Total	118	15.03	7.5	12.552	1	30	
Externality - other powerful influences							
With foot ulcers	59	3.37	3.0	1.413	1	8	0.001*
Without foot ulcers	59	27.27	29.0	4.867	4	30	
Total	118	15.32	8.0	12.519	1	30	
Externality - chance for health							
With foot ulcers	59	3.83	3.0	3.962	1	32	0.001*
Without foot ulcers	59	28.14	29.0	1.995	23	30	
Total	118	15.98	23.0	12.598	01	32	

Kruskal-Wallis Test. *Statistical significance (P <0.05); SD = standard deviation.

DISCUSSION

In this study, the majority of the participants in both groups were older than 60 years, white skinned, female, literate and smokers, corroborating the results of several studies.¹⁶⁻¹⁹

Schooling is certainly a factor that negatively affects the self-care of elderly individuals, especially those who have chronic diseases, because they have to deal with medications, dressings, diets, foot examination, self-care and other sometimes complex activities.^{4,9,16-17}

Another unfavorable factor among diabetic patients is the use of cigarettes that increase the concentration of fat at the abdominal level, reduces insulin sensitivity and causes high increases in blood glucose concentration, conducing to deficient healing. About 95% of all foot amputations occur among smokers. This is a traumatic procedure that could be avoided by avoiding smoking.¹⁸⁻¹⁹

Foot ulcers cause emotional, psychological and biological suffering, changes in life style and in the quality of life and sleep, making it impossible for individuals to exercise their social activities, participate in leisure and family life. They also cause work absenteeism and even loss of work functions in the case of productive age groups.^{4,8,20-21} The wound can also affect the sexual performance and sexuality which, in turn, may be related to damages for the self-esteem and self-

image.^{4,8-9,21} Many of these patients end up isolating themselves from social life when they perceive that the lesion presents odor and exudate and because of the need for changing the dressing more than once a day, without improvement in the aspect of the wound. These changes make patients feel despised, frustrated, afraid, useless and powerless to develop daily activities. Consequently, they begin to disbelieve in the guidance of the professionals involved in their treatment, lose faith and hopes for healing or improvement of the wound, and many even consider the wound to be a punishment from God. These facts have as consequence the abandonment and non-adherence to treatment.^{3,15,17}

A major challenge for health professionals is the social inclusion of individuals with diabetic foot ulcers. This is because the search for healing or improvement of the lesion by means of dressings, surgical procedures (by debridement or amputation) trigger trauma resulting from changes in organ functions, as well as fear and frustration. Prejudice from a society which is misinformed about this pathology worsens the situation.

In this study, the mean score in the Herth Hope Scale of individuals with foot ulcers was 8.98, and that of individuals without foot ulcers was 27.90. These findings show that diabetic the patients with foot that ulcers that participated in the research have little hope in improvement of the wound or in its

cicatrização; while diabetic patients without foot ulcers are hopeful of cure or amelioration of the disease. These results corroborate the findings of several national and international studies, such as a study where the authors evaluated the hope for cure among individuals with venous ulcer and in diabetic patients with foot ulcers; the authors concluded that diabetic patients with ulcerated feet have lower hope of healing compared to patients with venous ulcer.⁸

In a study that evaluated the hope for cure among diabetic individuals with foot ulcers, the authors concluded that during the treatment, when patients perceive worsening of the wound, pain and increase of the exudate, they expressed little hope and lost the faith that the wound will improve or heal, and they often drop out of treatment and do not rely on the guidance of professionals who provide care.⁴

Hope is a subjective state in which the individual visualizes the possibility of good outcomes, constituting a feeling of an optimistic future that allows the elaboration of plans and objectives in the long term. In the face of everyday situations, people tend to anchor their hope in matters that are significant to them, be they external, such as family, friends or something supernatural, or internal, when the individual places his hopes in himself, thinking about his life and in the possibility of personal achievements.²²⁻²³ Hope drives the individual to act and move to achieve his goals; it provides strength to solve problems and coping with loss, tragedy, loneliness and suffering. Lack of hope makes him opaque, without goals, awaiting death. Hope is related to well-being, quality of life and survival.¹⁹

Regarding the Health Locus of Control Scale, individuals with foot ulcers presented a mean of 9.56 and individuals without foot ulcers presented an average of 28.05, indicating that diabetic individuals with ulcers believe that professionals or the people involved in the care cannot do anything to control their health and improve or heal the wound, that is, these patients have doubts about the care and treatment provided. They believe that they themselves control their health. The locus control construct can be defined as the generalized expectation of someone in the own ability to control the events that follow their actions.¹²⁻¹³

In one study, the adherence of patients with chronic non-oncologic pain to treatment was evaluated, seeking to identify relationships between the belief in health control and adherence to treatment. Thirty

patients were evaluated for six months. Adhesion was classified as full, partial and absent, and the Drug Intake Adjustment Index (DIAI) was calculated. The belief in health control was assessed using the Health Locus of Control Scale. There were high rates of partial adherence and non-adherence to treatment (40.0% to 56.7%, respectively), DIAI means varied between 57.2% and 69.5%, respectively, and patients with beliefs of higher "Internality" adhered less to treatment.²⁴

Another study on the locus of control was also the object of a literature review to assess cultural differences between groups of Latinos and Anglo-Saxons and the implications on primary care and public health practice. American cultural practice and the concept of disease prevention and health promotion are compatible with the internal dimension, through which the individuals believe to control the events of their life, including the ability to prevent certain health conditions. People with this orientation tend not to see these events with fatalism. In turn, traditional Latin beliefs are congruent with the external dimension that evokes fatalism and beliefs in luck, "chance" and God as determinants of health and disease. In this view, people with external locus of control are seen as at risk for developing diseases due to lack of proper care and problems of adherence to medical and public health interventions.²⁵

Regarding the dimensions of the Health Locus of Control Scale, the mean scores for the Internality for Health were 2.93 for diabetic patients with foot ulcers and 27.12 for diabetic patients without foot ulcers. In the dimension Externality - other powerful influences, diabetic patients with foot ulcers had an average of 3.37 and diabetic patients without diabetic foot had the mean of 27.27. Regarding the Externality - chance for health, diabetic patients with foot ulcers had a mean of 2.83 and diabetic patients without foot ulcers had the mean of 28.14.

The locus of control is a model that represents the belief of the individual (internal and external motivation) and determines the action to be taken. Individuals who believe that the results, at least in part, are dependent on the own actions taken are considered internally oriented. In turn, those who have an external orientation generally have no or little belief in the relationship between outcome and individual action.²⁶ The externally controlled subjects have more problems in creating appropriate relationships. Since they do not believe that interpersonal information plays an important

role in relationships with others, they see the luck, opportunity, destiny, fate and power of others as determinants of their outcomes.²⁷ Individuals with an inclination of external control are less satisfied, missing, less involved in their work, and perceive themselves with little control over important organizational outcomes.²⁸

Diabetic individuals with foot ulcers may experience situations of impotence and disbelief caused by several factors. In this context, many begin to realize that the wound is worsening. They experience difficult glycemic control, difficulty to perform foot examination and self-care, and difficulty for daily assessment of feet. They may also experience changes related to interaction with the team of professionals from whom they receive care. The locus of control influences the attitude of the patients in the face of health problems, directing the individuals' perception towards factors dependent on themselves or on external forces. Knowing the direction of the patient's locus of control is important to anticipate the changes needed to better manage the treatment.²⁸⁻²⁹

In order to avoid failures in the process of self-care and treatment, the multiprofessional team should provide a global assistance, meeting the biopsychosocial and emotional needs of diabetic patients with foot ulcers, so as to improve their living conditions. These facts should be analyzed with a focus on care, with concern in developing the interpersonal relationship not only with Psychiatry, but in any area where there is a need for human care. Therefore, the relationship must occur in such a way that the emotional, economic and cultural aspects are taken into account, giving much relevance to dialogue and providing comprehensive care to the individual.

Support networks contribute to coping with these feelings, and such support may come from other family members as well as from friendly relationships in the community, covering the social, economic, functional or affective spheres.³⁰

CONCLUSION

Diabetic individuals without foot ulcers showed hope and believe that their improvement or healing depends on the professionals involved in their care. On the other hand, diabetic patients with ulcers showed little hope that the wound would improve or heal. If the situation depends on the professionals involved in their care, the injury will not improve. The improvement or

healing of the wound depends only on the patient, regardless of the guidelines received from the professionals involved in the care.

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