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The influence of pain on elderly diabetics' quality of life

A influência da dor na qualidade de vida de idosos portadores de Diabetes Mellitus

La influencia del dolor en la calidad de vida de ancianos portadores de Diabetes Mellitus

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ABSTRACT

Objective: to evaluate pain and its repercussions on the quality of life of elderly people with Diabetes Mellitus. **Methods:** in this cross-sectional study of 196 older adults with Diabetes Mellitus, WHOQOL-OLD and WHOQOL-BREF quality of life questionnaires were applied at a primary health care facility in the Federal District. **Results:** of the 196 participants, 54.6% were males, mean age 67.4 (±6.5) years, predominantly 60 to 70 years (72.9%). The WHOQOL-BREF and WHOQOL-OLD scores showed that those who did not report pain returned higher quality of life scores, except in the physical domain (M = 53.94 and M = 59.26) and in the autonomy facet (M = 56.68 and M = 58.19; p ≤ 0.05). **Conclusion:** the study showed the adverse influence of pain on quality of life of older adults with Diabetes Mellitus. Nurses need to be attentive to this, because it is intrinsically connected with treatment quality.

Descriptors: Aged; nursing; primary health care; quality of life.

RESUMO

Objetivo: avaliar a dor e suas repercussões na qualidade de vida de idosos com Diabetes Mellitus. **Método:** estudo transversal com 196 idosos com Diabetes Mellitus, em uma unidade básica de saúde do Distrito Federal. Utilizados os questionários de qualidade de vida WHOQOL-OLD e WHOQOL-BREF. **Resultados:** dos 196 idosos, 54,6% eram do sexo masculino, com média de idade de 67,4(±6,5) anos, com predomínio entre 60 e 70 anos (72,9%). Por meio das pontuações do WHOQOL-BREF e WHOQOL-OLD, observou-se que aqueles que não relataram dor apresentaram melhores pontuações de qualidade de vida, exceto no domínio físico (M=53,94 e M=59,26) e na faceta autonomia (M=56,68 e M=58,19) p≤0,05. **Conclusão:** o estudo demonstrou uma influência negativa da dor na qualidade de vida de idosos com Diabetes Mellitus, sendo necessário que os enfermeiros estejam atentos, pois a mesma está intrinsicamente ligada à qualidade do tratamento.

Descritores: Idosos; enfermagem; atenção primária à saúde; qualidade de vida.

RESUMEN

Objetivo: evaluar el dolor y sus repercusiones en la calidad de vida de ancianos con Diabetes Mellitus. **Método:** estudio transversal junto a 196 ancianos con Diabetes Mellitus, en una unidad básica de salud del Distrito Federal. Se utilizaron los cuestionarios de calidad de vida WHOQOL-OLD y WHOQOL-BREF. **Resultados:** de los 196 ancianos, un 54,6% era del sexo masculino, con promedio de edad de 67,4 (± 6,5) años, con predominio entre 60 y 70 años (72,9%). Mediante las puntuaciones del WHOQOL-BREF y WHOQOL-OLD, se observó que aquéllos que no reportaron dolor presentaron mejores puntuaciones de calidad de vida, excepto en el dominio físico (M = 53,94 y M = 59,26) y en lo que respecta la autonomía (M = 56,68 y M = 58,19) p≤0,05. **Conclusión:** el estudio demostró una influencia negativa del dolor en la calidad de vida de ancianos con Diabetes Mellitus. Siendo así, es necesario que los enfermeros estén atentos, pues la calidad de vida está intrínsecamente relacionada a la del tratamiento.

Descriptores: Anciano; enfermería; atención primaria de salud; calidad de vida.

INTRODUCTION

According to research conducted in 2011 by the Brazilian Institute of Geography and Statistics (IBGE), the number of elderly people in Brazil has doubled in the last 20 years, reaching 23.5 million[1]. Aging can lead to the appearance of diseases and chronic illnesses that require follow-up and continuous treatment. These diseases tend to manifest with greater intensity in older adults and are usually associated with other pathologies[2].

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With the evident increase in the number of elderly, there is also a higher prevalence of Non-Communicable Chronic Diseases (NCCDs), which are reported as one of the leading causes of death worldwide[3]. According to the World Health Organization (WHO), of all deaths that occurred in 2008 worldwide, 63% were due to NCCDs and/or their complications. In Brazil, this number was slightly higher, reaching 74% of deaths in 2012[4]. Diabetes Mellitus (DM) is among the most prevalent NCCDs in the elderly[5].

According to the International Diabetes Federation (IDF), the world population of diabetics is estimated at 415 million people and is expected to reach 642 million by 2040. In addition, 75% of people with DM are in low- and middle-income countries. In the countries of Central and South America, the prevalence of DM was estimated at 29.6 million people and projected to 48.8 million in 2040. In 2015, Brazil was the fourth country with the largest number of adults with DM worldwide, with a diabetic population estimated at 14.3 million, behind only China (109.6 million), India (69.2 million) and the United States of America (29.3 million)[5].

The increase in the number of cases of NCCDs is associated with several factors, including population aging, unhealthy living habits, inadequate diet and obesity. Poor control of DM generates several complications that compromise the productivity, quality of life (QoL) and the life expectancy of individuals[6]. DM is a chronic condition and requires strict control and continuous treatment; thus, when DM is combined with complications such as pain, it becomes an important factor in the determination of QoL[7].

QoL is an important aspect of DM because its reduction leads to low self-care, which, in turn, results in poorer glycemic control and increased risk of complications in both the short and long term[8]. Many factors such as age, financial status, schooling, physical activity, nutrition, associated comorbidities, lifestyle, type of treatment adopted and complications can influence and affect the QoL of diabetic people. Such factors can affect the physical, functional and psychological state, and in general, the well-being of individuals[2,9].

Among them, the presence of pain, especially chronic pain, stands out as a complication of DM that directly influences the life of the elderly, especially in their QoL. Pain in diabetic people has been described as intense and causes discomfort and/or tingling sensation in the feet and/or calves, with burning, stabbing or electric-shock-type pain, numbness and cramps, and also, a nuisance that bothers patients and make them wake up in the night due to the discomfort, especially when related to diabetic neuropathy[10].

Research results have detected a poorer QoL in older people with DM, as investigated with the WHOQOL-BREF instrument[6,8,11]. It is worth mentioning a study performed with diabetic people in primary care that showed a negative correlation between pain intensity and QoL indices, i.e., the greater the intensity of diabetic pain, the worse was the QoL[12]. It is known that the approaches of most studies focus on the identification of the main domains affected in the QoL of the elderly. It is observed, therefore, that there is little research investigation the relation between QoL and measurement of pain.

Considering the above and considering the specificities of the elderly, studies addressing the relationship between pain and QoL in the elderly diabetic population are sorely needed, since there has been a marked increase of NCCDs. Knowledge about this relationship can allow nurses to promote a better QoL for older people who live with pain and has to deal with the presence of a progressive chronic disease, DM, through planned care based on results of investigations carried out with validated instruments of easy application. Therefore, the objective of this study was to evaluate pain and its repercussions on the quality of life of elderly patients with Diabetes Mellitus.

METHODOLOGY

This is a descriptive study with quantitative approach. The research was conducted in a Basic Health Unit (BHU) of the Federal District in 2016. The study population consisted of 500 elderly people with Diabetes Mellitus enrolled in the Diabetes Group of the BHU. The convenience sample was formed according to the following inclusion criteria: elderly people aged 60 years or older who were part of the Diabetes Group of the BHU. The elderly were approached at the meeting of the Group and invited to participate in the study. Data collection took place between September and November 2016. At the end, 196 elderly people composed the final sample of the study.

The interview took place in a reserved place, after the participants signed of the ICF, and three instruments were applied. The first one was a structured questionnaire prepared by the researchers and previously tested containing questions about the socioeconomic and demographic profile of the participants (sex, age, marital status, education, income and occupation), and pain assessment. Pain intensity was measured using the Visual Numeric Scale (VNS) with a score ranging from 0 to 10 points, in which 0 (zero) means no pain and 10 (ten) the worst possible pain. The numeric scale was categorized according to pain intensity: scores 1-3 points (mild pain), 4-6 (moderate pain), 7-9 (intense pain) and 10 (worst possible pain)[13].

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The second instrument was the WHOQOL-BREF, which consists of a short version of the questionnaire proposed by WHO to assess QoL, divided into four domains: Physical, Psychological, Social Relations, and Environment. Finally, the third questionnaire used was the WHOQOL-OLD, a tool created by WHO to evaluate QoL in elderly people and composed of six facets: Sensory abilities; Skills; Autonomy; Past, present and future activities; Social participation; Death and dying; and Intimacy. Both QoL instruments were validated in Brazil[14,15]. A score was calculated for each domain and facet, ranging from 0 to 100, and the higher the score, the better the QoL.

For data analysis, at first, a database was created in the Package for the Social Sciences (SPSS®) software version 21.0. Then, according to the instructions of the instrument, the total score of each respondent was calculated, as well as the average values per group of each of the factors and domains, and a quantitative descriptive analysis was made, where the relative, absolute, mean and standard deviation of the results obtained were calculated. At the last moment, the Komogorov-Smirnov test was used to analyze the normality of the variables. The Student t test was used to analyze the differences between the means of QoL. The chi-square test was use to check the differences between proportions. Values of $p < 0.05$ were considered statistically significant.

The research was approved by the Research Ethics Committee of the Secretary of the State of Health of the Federal District (CAAE: 14557613.1.0000.5553), and the subjects were clarified by the researchers regarding ethical principles, according to resolution CNS 466/2012.

RESULTS

Sociodemographic data and pain measurement characteristics are shown in Table 1.

Table 1: Distribution of demographic and socioeconomic variables of elderly people with diabetes mellitus according to intensity of pain (n = 196). Brasília, FD, Brazil, 2016.

Variáveis	Mild/Moderate Pain n = 71		Intense Pain n = 96		No pain n = 29		Total		p
	n	%	n	%	n	%	n	%	
Sex									0.290
Female	27	38,0	48	50.0	14	48,3	89	45.4	
Male	44	62,0	48	50.0	15	51,7	107	54.6	
Age (years)									0,924
60-70	52	73.2	70	72,9	21	72.4	143	73,0	
71-80	14	19.7	22	22,9	6	20.7	42	21,4	
>80	5	7.1	4	4,2	2	6.9	11	5.6	
Marital status									0.008
Single	31	43.7	35	36.5	14	48.3	80	40.8	
Married	21	29.6	25	26.0	12	41.4	58	29.5	
Widowed	10	14.1	13	13.5	1	3.4	24	12.4	
Divorced	9	12.7	23	23.9	2	6.9	34	17.3	
Schooling									0.052
Illiterate	15	21.1	19	19.8	4	13.8	38	19.4	
Primary Education	50	70.4	74	77.1	20	68.9	144	73.5	
Secondary Education	5	7	3	3.1	5	15.2	13	6.6	
Higher Education	1	1.4	0	0	0	0	1	0.5	
Monthly income									0.046
Up to MW	41	57.7	65	67.7	14	48.3	120	61.22	
1 to 3 MW	22	31.0	24	25.0	11	37.9	57	29.1	
>4 MW	8	11.3	7	7.3	4	13.9	19	9.7	
Occupation									0.012
Unemployed	20	28.2	14	14.6	7	24.1	41	20.9	
Retired	45	63.4	60	62.5	19	65.5	124	63.3	
Others	6	8.5	22	22.9	3	10.3	31	15.8	

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Among the 196 elderly participants in the study, 54.6% were males, with a mean age of 67.47 ± 6.59 years, 73.0% were between 60 and 70 years old, 40.8% were single, 73.5% had primary education, 63.3% were retired, and 61.2% had a monthly income of up to one minimum wage.

Regarding the analysis of pain, it was observed that 49% reported intense pain, 36% reported mild/moderate pain, and 15% did not report pain. Regarding the demographic and socioeconomic variables, there were significant differences in the single marital status, in the low monthly income, and in the retirement of the elderly. Single unmarried diabetic individuals presented higher prevalence of intense pain (36.5%) when compared to married patients (26.0%) (p = 0.008). As for monthly income, it was found that diabetic elderly people with income up to a minimum wage reported more intense pain (67.7%) than those with higher income (25.0%) (p = 0.046). Finally, a greater number of retired elderly people complained of intense pain (62.5%) when compared to the elderly who were unemployed at the time of the study (14.6%) (p = 0.012).

The QoL scores assessed using the WHOQOL-BREF and WHOQOL-OLD questionnaires are presented in Table 2, according to the presence or absence of pain.

Table 2: Mean scores obtained by the WHOQOL-BREF and WHOQOL-OLD questionnaires and report of pain among diabetic elderly (n = 196). Brasília, FD, Brazil, 2016.

	Pain not reported		Pain reported		p
	M	SD	M	SD	
WHOQOL-BREAF					
Physical	53.94	14.76	59.26	14.18	0.053
Psychological	64.36	14.79	59.45	14.83	0.656
Social relationships	67.13	19.66	65.79	21.91	0.091
Environment	60.56	17.78	55.08	15.31	0.046
WHOQOL-OLD					
Sensory abilities	71.33	16.83	62.23	24.45	0.048
Autonomy	56.68	14.45	58.19	18.67	0.879
Past. present and future activities	66.81	20.19	65.98	19.11	0.011
Social participation	61.85	20.95	59.84	19.01	0.026
Death and dying	58.18	31.03	55.12	32.20	0.354
Intimacy	74.35	24.51	68.67	23.27	0.522

It was observed that the elderly who did not report pain presented better QoL scores than those who complained about pain, except in the Physical and Autonomy facets. In the group of elderly patients with DM who did not report pain, a better QoL was observed in Social relations (67.13 ± 19.66) and Intimacy (74.35 ± 24.51) and a worse QoL in the Physical domain (53.94 ± 14.76) and Autonomy facet (56.68 ± 14.45).

On the other hand, in the group of elderly patients with DM who had complaints of pain, a better QoL was observed in the Social relations domain (65.79 ± 21.91) and Intimacy facet (68.67 ± 23.27), and a worse QoL in the Environment domain (55.08 ± 15.31) and Death and dying facet (55.12 ± 32.20).

Table 3 shows the comparison between mean QoL scores between the group that reported mild/moderate pain and the group that reported intense pain.

It was found that diabetic elderly patients complaining of severe pain had lower QoL scores than those with mild/moderate pain, except in the Physical domain (p = 0.053). Significant differences were observed in the Environment domain (p = 0.046) indicating that elderly patients with severe pain had a poorer QoL in this domain.

In the analysis of the results of QoL assessed through the WHOQOL-OLD, the group of elderly people with intense pain had worst QoL in the Sensory abilities (p = 0.048), Past, present and future activities (p = 0.011) and Social participation (p = 0.026) facets (Table 3).

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Table 3: Comparison between mean scores of the WHOQOL-BREF and WHOQOL-OLD questionnaires and intensity of pain in elderly people with diabetes. Brasília, FD. Brazil, 2016.

	Intensity of pain				
	Mild/Moderate		Intense		
	M	SD	M	SD	p
WHOQOL-BREF					
Physical	59.05	12.67	59.41	15.27	0.053
Psychological	61.03	14.94	58.28	14.72	0.656
Social relationships	67.13	19.66	65.79	21.91	0.091
Environment	57.83	15.19	53.05	15.16	0.046
WHOQOL-OLD					
Sensory abilities	66.1	23.94	29.37	24.55	0.048
Autonomy	60.47	18.26	56.51	18.89	0.879
Past, present and future activities	70.33	17.22	62.76	18.88	0.011
Social participation	63.73	15.9	56.96	20.63	0.026
Death and dying	55.45	33.17	54.88	31.63	0.354
Intimacy	70.07	23.83	67.64	22.92	0.522

DISCUSSION

In this study, it was observed that the majority of elderly people with DM reported intense pain, which was related to single marital status, low monthly income, and retirement of the elderly. These results are in line with those shown in another study performed with diabetics in Pará[16]. These results indicate a greater concern, because the presence of a partner could favor elderly people with chronic diseases, acting as a support and encouraging self-care. Therefore, this data reflects the greater need for attention and greater support from the health team, aiming to create a bond with these elderly people and contribute to a better adherence to the therapeutic plan[17].

Low income was also a factor that can compromise the health status and QoL of elderly people, making it difficult to adhere to treatment, and especially to non-drug therapy which includes changing eating habits and practicing physical exercise, both fundamental for an ideal glycemic control so as to avoid the complications of DM[18].

The present study demonstrated that the group that reported pain had lower QoL scores than the group that did not report pain, that is, they presented a lower QoL. It is important to highlight a study carried out with elderly individuals in Montes Claros (MG) where a negative impact of pain on the QoL of diabetic patients was observed, especially on those who lived with the disease for more than 10 years. Indeed, a longer evolution of DM may reflect in a greater intensity of pain and discomfort caused by it, consequently causing a greater interference in daily activities[19].

It is worth mentioning that chronic pain is related to diabetic neuropathy (DN), one of the complications of DM. The prevalence of painful diabetic neuropathy has increased; one in five diabetic patients have chronic pain with characteristics of neuropathic pain[20]. Studies have proven the negative impact of this complication on the atients' QoL. In this context, a study investigated the relationship between painful diabetic neuropathy and QoL in patients with DN. A total of 154 patients participated, and it was observed that QoL was lower in patients with painful neuropathy[21].

In this study, patients with DM who had complaints of pain had lower QoL scores in the Environment domain and in the Death and dying facet. Opposite results were observed in a study with elderly people in Uberaba (MG), where the Death and dying facet obtained higher scores[22]. For the elderly, age allied with health complications can bring the idea of a shorter future and an approach to the idea of death, with a possible reaction of fear and non-acceptance [23].

The domains and facets with lower QoL scores that were significantly associated with the presence of pain were: Environment, Sensory abilities, Past, present and future activities and Social participation. Pain is a limiting factor for the realization of daily activities and tasks of daily living, and may negatively influence social interaction and QoL[24]. A research associated the influence of chronic pain in 50 elderly patients with QoL using the WHOQOL-BREF instrument. The results showed that there was a negative influence of chronic pain on the QoL of elderly people, mainly in the physical domain and in social relations[11].

The Sensory abilities facet assesses the impact of loss of such abilities on the QoL of the elderly. Sensory organs allow the elderly to relate with the environment in which they live. It is known that decreased sensitivity commonly affects DM

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patients, especially in the feet. At the same time, the progress of DM tends to cause microvascular complications such as retinopathy, which when associated with aging-related changes such as hearing impairment, causes an effect on the sensory organs of the elderly. Furthermore, the presence of pain may potentiate the impairment in sensory perception related to persistent inflammatory processes typical of hyperglycemia, related to the lack of control of DM[25].

A study with 146 elderly women who presented DM also showed a worse QoL in the Environment domain (M = 38.91). This points to the importance of encouraging the personal responsibility of society to create friendly environments for the elderly, thus stimulating solidarity among generations[26]. It should be noted that this domain assesses physical safety, protection, the home environment, financial resources, opportunities to acquire new information and skills, pollution/noise/traffic/climate and transportation[14].

In the comparison between elderly patients who felt pain, according to the intensity of this pain, it was evidenced patients who reported intense pain presented worse QoL in the Environment domain than those with mild/moderate pain. Similar to a study carried out in João Pessoa (PB), the greatest impact of QoL was on the Environment domain[27], which may be related to the infrastructure of the region, crime rates, and difficulties of access to health services, mainly because the region studied was of low socioeconomic level[28]. This result indicates that health teams should seek strategies that improve the health conditions of elderly patients living in areas with limited access to health services and few leisure opportunities[29]. The maintenance and promotion of safety is fundamental for the development of leisure activities, since often these elderly people have to live with the presence of chronic pain limiting them in the accomplishment of these activities.

Elderly people with DM who reported severe pain also presented worse QoL in the Sensory abilities; Past, present and future activities; and Social participation facets. The worst QoL scores in the Sensory abilities in individuals who experienced intense pain was also found in the study conducted in the city of Uberaba (MG) with elderly diabetic people[29]. In this regard, it is known that as people age, the body undergoes structural and functional changes in the sensory system. Besides this natural process, complications of DM such as pain have the potential of accentuating these changes, causing a greater impact on QoL[30].

This result indicates the need to reflect on the possibility of a greater risk of accidents related to sensory alterations and on the idea that these elderly people may become less active due to their limitations. Other researchers also stressed that the less frequent active is the elderly person, the lower is his/her satisfaction with life and, consequently, the worse is his/her QoL[31].

In this sense, a study analyzed the effect of falls and their consequences on the QoL of elderly people in a low income community in the city of Rio de Janeiro. The analysis showed that there was influence of falls in the QoL of the elderly studied because in all domains of the WHOQOL-BREF there was a reduction in the means of the group that fell in the last year in relation to those that did not have such incidents[32]. It is noticeable that the aging process is accompanied by alterations in the musculoskeletal system, which is often overwhelmed by changes such as arthritis, arthrosis that has the presence of pain in daily basis, limiting and bringing instability to gait that can contribute to falls.

The Past, present, and future activities facet indicated satisfaction of the elderly with the achievements that had occurred in the course of their lives and regarding future hopes, things that they are still longing for. Therefore, it is extremely important that the nursing team promote health actions that help these patients in the pursuit of activities that bring personal accomplishment and an improvement in the prospects for the future[33]. It is known that the expectations of an individual can be influenced by cultural and socioeconomic factors, level of dependence, and access to health services. Moreover, comorbidities can lead the individuals to lose their perspectives about their future.

Regarding the Social participation facet, a similar result was observed in a study with 68 diabetic elderly people in Paraíba. The authors evidenced a worse QoL in the social aspects, demonstrating that the participation of the elderly in social groups was negatively affected by the difficulties that DM imposes[34].

Elderly participants with intense pain presented a higher score in the Intimacy facet, as in a study carried out in Taquaraçu do Sul (RS) where the mean of this facet was 70.7 ± 14.2[35]. This facet evaluates the ability of an elderly person to relate to other people, an area that must be constantly observed by nurses because the network of relationships is extremely important to the way these people will deal with the disease[29].

The highest score in the social relations domain in both groups is similar to that found in elderly people with DM in Nigeria[36] and in another study also performed with elderly diabetic people in São Paulo[37]. This domain evaluates personal relationships, social support and sexual activity. This result can be explained by the physical activities offered to participants every day at the BHU. Such activities represent an opportunity for socialization of the elderly. Another study reinforced the value of regular physical activity to improve the physical and functional aspects of the elderly, but the importance of these

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activities on social aspects should not go unnoticed. Activities to promote and maintain the social skills of this population should be included[38].

Therefore, the role of nurses in the investigation and control of pain in diabetic elderly patients is fundamental as a coping strategy in the management of DM. It is known that DM is a factor that contributes to the presence of other comorbidities such as depression, and pain intensifies this factor, potentiating further complications of DM[12].

The health team, especially nurses, should pay attention to these factors that interfere with the daily activities and quality of life of patients, in order to propose actions to be incorporated into nursing interventions for this population in order to increase QoL. Nurses should also recognize the early onset of pain as a sign of diabetic neuropathy in order to prevent future complications such as amputations.

CONCLUSION

Pain adversely affected the quality of life of elderly people with Diabetes Mellitus mainly in the Physical domain and the Autonomy facet.

The results of this study confirm the importance of evaluating the influence of pain on the QoL of diabetic elderly patients, providing an analysis of the negative impact of this complication of DM on the physical and psychosocial aspects of these patients. Furthermore, it is evident that health teams, and especially the nursing team, need to be attentive to all variables that may interfere with the QoL of these elderly patients because QoL is intrinsically linked to adherence to the proposed therapeutic plan, as well as to the quality of this treatment. Therefore, studies of this type make it possible to guide the planning of actions towards the specific needs of this population.

REFERENCES

1. Instituto Brasileiro de Geografia e Estatística – IBGE. Sinopse do Senso Demográfico de 2010[Internet]; Rio de Janeiro: IBGE; 2011. [cited 2018 Dec 15] 261p. Available from: https://biblioteca.ibge.gov.br/visualizacao/livros/liv49230.pdf
2. Sousa MC, Dias FA, Nascimento JS, Tavares DMS. Correlation of quality of life with knowledge and attitude of diabetic elderly. Invest. educ. Enferm [Internet]. 2016 [cited 2018 Dec 15]; 34(1):180-8.8. DOI: http://dx.doi.org/10.17533/udea.iee.v34n1a20
3. Rocha-Brischiliari SC, Dell Agnolo CM, Gravea ÂAF, Lopes TCR, Carvalho MD de B, Pelloso SM. Doenças crônicas não transmissíveis e associação com fatores de risco. Rev bras cardiol [Internet]. 2014 [cited 2018 Dec 15]; 27(1):531–8. Available from: http://www.rbconline.org.br/wpcontent/uploads/Art_52_RBC_27_1_Catia_Agnollo_Artigo_Original1.pdf
4. World Health Organization. Mortality and burden of disease. Noncommunicable Diseases (NCD) Country Profiles, 2014 [Internet]; Geneva: WHO; 2014 [cited 2018 Dec 15]; 210p. Available from: http://www.who.int/nmh/countries/en/
5. International Diabetes Federation. IDF Diabetes Atlas – Seventh Edition, 2015. [Internet]; Brussels, Belgium: International Diabetes Federation; 2015 [cited 2018 Dec 15]; 140p. Available from: http://www.diabetesatlas.org
6. Paskulin L, Vianna L, Molzhan A.E. Factors associated with quality of life of Brazilian older adults. Int. Nur. Rev. [Internet], 2009 [cited 2018 Dec 15]; 56(1):109-15. Available from: DOI: https://doi.org/10.1111/j.1466-7657.2008.00671.x
7. Silva LD, Pazos AL. A influência da dor na qualidade de vida do paciente com lesão crônica de pele. Rev. Enferm. UERJ. [Internet]. 2005 [cited 2018 Dec 15]; 13(3):375-81. Available from: http://www.facenf.uerj.br/v13n3/v13n3a13.pdf
8. Jain V, Shivkumar S, Gupta O. Health-Related Quality of Life (Hr-Qol) in Patients with Type 2 Diabetes Mellitus. North American Journal of Medical Sciences [Internet]. 2014 [cited 2018 Dec 15]; 6(2):96–101. DOI: https://doi.org/10.4103/1947-2714.127752
9. Correr CJ, Pontarolo R, Melchiors AC, Rossignoli P, Fernández-Limós F, Radominski RB. Tradução para o português e validação do instrumento Diabetes Quality of Life Measure (DQOL-Brasil). Arq Bras Endocrinol Metab [Internet]. 2008 [cited 2018 Dec 15]; 52(3):515-22. DOI: http://dx.doi.org/10.1590/S0004-27302008000300012
10. Silva REG, Morais ACS, Godoi CD, Garcia OAG, Neto WNR. Avaliação sensório-motora e sua correlação com qualidade de vida em portadores de diabetes mellitus. South American Journal of basic Education, technical and technological [Internet]. 2017 [cited 2018 Dec 15]; 4(1):118-32. Available from: http://revistas.ufac.br/revista/index.php/SAJEBTT/article/view/1140
11. Cunha LL, Mayrink WC. Influência da dor crônica na qualidade de vida em idosos. Rev. dor [Internet]. 2011 [cited 2018 Dec 15]; 12(2):120-4. DOI: http://dx.doi.org/10.1590/S1806-00132011000200008
12. Lima, L.R., Stival, M.M., Funghetto, S.S. Volpe, C.R.G,V., Rehem, T. C. M. S. B., Santos, W. S., et al. Lower quality of life, lower limb pain with neuropathic characteristics, female sex, and ineffective metabolic control are predictors of depressive symptoms in patients with type 2 diabetes mellitus treated in primary care. Int J Diabetes Dev Ctries [Internet]. 2018 [cited 2018 Dec 15]; 8(38):1-8. DOI: https://doi.org/10.1007/s13410-018-0667-5
13. Silva JA, Ribeiro-Filho NP, Matsuhima EH. Mensurando o quinto sinal vital: a dor. Ribeirão Preto: FUNPEC-Editora; 2010. 144p.
14. Fleck MPA, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L et al. Aplicação da versão em português do instrumento abreviado de avaliação da qualidade de vida "WHOQOL-bref". Rev. Saúde Pública [Internet]. 2000 [cited 2018 Dec 15]; 34(2):178-83. DOI: http://dx.doi.org/10.1590/S0034-89102000000200012
15. Fleck MPA, Chachamovich E, Trentini C. Development and validation of the Portuguese version of the WHOQOL-OLD module. Rev. Saúde Pública [Internet]. 2006 [cited 2018 Dec 15]; 40(5):785-91. DOI: http://dx.doi.org/10.1590/S0034-89102006000600007

DOI: http://dx.doi.org/10.12957/reuerj.2019.31517

16. Aguiar FLXS, Ramos LFP, Bichara CNC. Detecção de dor com características neuropáticas em pacientes com diabetes mellitus atendidos na atenção básica. BrJP [Internet]. 2018 [cited 2018 Dec 15]; 1(1): 15-20. DOI: http://dx.doi.org/10.5935/2595-0118.20180005
17. Araújo KO, Andrade AN, Costa TS, Freitas MA, Nascimento MMP, Silva EN. Avaliação da qualidade de vida de portadores de diabetes mellitus tipo 2. Rev enferm UFPE on line [Internet]. 2013 [cited 2018 Dec 15]; 7(9):5583-9. DOI: http://dx.doi.org/10.5205/reuol.3529-29105-1-SM.0709201328
18. Alves ECS, Souza LPS, Alves WS, Oliveira MKS, Yoshitome AY, Gamba MA. Condições de saúde e funcionalidade de idosos com Diabetes Mellitus tipo 2 na Atenção Primária à Saúde. Enfermería Global [Internet]. 2014 [cited 2018 Dec 15]; 13(2):19-36. Available from: http://revistas.um.es/eglobal/article/viewFile/167011/160151
19. Matias COF, Matias COF, Alencar BR. Qualidade de vida em idosos portadores de Diabetes Mellitus Tipo 2 atendidos em Unidades Básicas de Saúde de Montes Claros/MG. Rev Bras Qual Vida [Internet]. 2016 [cited 2018 Dec 15];8(2):119-29. DOI: https://doi.org/10.3895/rbqv.v8n2.3841
20. Bouhassira D, Letanoux M, Hartemann A. Chronic pain with neuropathic characteristics in diabetic patients: A French cross-sectional study. PLOS One [Internet]. 2013 [cited 2018 Dec 15]; 8(9):1-9. DOI: https://doi.org/10.1371/journal.pone.0074195
21. Geelen CC, Kindermans HP, Bergh JP, Verbunt JA, Perceived Physical Activity Decline as a Mediator in the Relationship Between Pain Catastrophizing, Disability, and Quality of Life in Patients with Painful Diabetic Neuropathy. Pain Practice [Internet]. 2017 [cited 2018 Dec 15]; 17(3):320-8. DOI: https://doi.org/10.1111/papr.12449
22. Sousa MC, Dias FA, Nascimento JS, Tavares DMS. Correlation of quality of life with the knowledge and attitude of diabetic elderly. Invest Educ Enferm [Internet]. 2016 [cited 2017 feb]; 34(1):180-8. doi: http://dx.doi.org/10.17533/udea.iee.v34n1a20
23. Paiva MHP, Pegorari MS, Nascimento JS, Santos AS. Fatores associados à qualidade de vida de idosos comunitários da macrorregião do Triângulo do Sul, Minas Gerais, Brasil. Cien. saúde coletiva [Internet]. 2015 [cited 2018 Dec 15]; 21(11):3347-56. DOI: http://dx.doi.org/10.1590/1413-812320152111.14822015
24. Ferretti F, Castanha AC, Padoan ER, Lutinski J, Silva MR. Qualidade de vida de idosos com e sem dor crônica. BrJP [Internet]. 2018 [cited 2018 Dec 15]; 1(2): 111-5. DOI: http://dx.doi.org/10.5935/2595-0118.20180022
25. Diretrizes da Sociedade Brasileira de Diabetes 2017-2018. Organização José Egídio Paulo de Oliveira. São Paulo: Editora Clannad [Internet]. 2017 [cited 2018 Dec 15]. Available from: https://www.diabetes.org.br/profissionais/images/2017/diretrizes/diretrizes-sbd-2017-2018.pdf
26. Sardinha AHL, Verzaro PM, Costa LLN, Murici AFF, Falcão BCS. Avaliação da qualidade de vida de idosas com diabetes mellitus. Rev enferm UFPE on line [Internet]. 2018 [cited 2018 Dec 15]; 12(2):345-56. DOI: https://doi.org/10.5205/1981-8963-v12i2a23164p345-356-2018
27. Miranzi SSC, Ferreira FS, Iwamoto HH, Pereira GA, Miranzi MAS. Qualidade de vida de indivíduos com diabetes mellitus e hipertensão acompanhados por uma equipe de saúde da família. Texto contexto-enferm [Internet]. 2008 [cited 2016 Dec 15]; 17(4):672-9. DOI: http://dx.doi.org/10.1590/S0104-07072008000400007
28. Tavares DMS, Santos ÉA dos, Dias FA, Ferreira PCS, Oliveira PB. Factors associated with quality of life of elderly people with diabetes mellitus. J Nurs UFPE on line [Internet]. 2014 [cited 2018 Jan 15]; 8(6):1491-501. DOI: http://dx.doi.org/10.1590/1981-22562017020.16014
29. Santos CM, Hugo FN, Leal AF, Hilgert JB. Comparison of two assessment instruments of quality of life in older adults. Rev Bras Epidemiol [Internet]. 2013 [cited 2018 Dec 15]; 16(2):328-37. DOI: http://dx.doi.org/10.1590/S1415-790X2013000200009
30. Nogueira MF, Magalhães LD, Maia AKF, Torquato IMB, Trigueiro JS, Alves MSCF. Quality assessment of elderly living with diabetes mellitus. J Nurs UFPE on line [Internet]. 2015 [cited 2018 Dec 15]; 9(6):8688-97. DOI: https://doi.org/10.5205/1981-8963-v9i6a10646p8688-8697-2015
31. Reis LA, Torres GV, Reis LA, Oliveira LS, Sampaio LS. Avaliação da qualidade de vida em idosos portadores de diabetes mellitus tipo 2. Rev Eletr. FAINOR [Internet]. 2009 [cited 2018 Dec 15]; 2(1):64-76. Available from: http://srv02.fainor.com.br/revista/index.php/memorias/article/view/61/37
32. Ribeiro AP, Souza ER, Atie S, Souza AC, Schilithz AO. A influência das quedas na qualidade de vida de idosos. Ciênc. saúde coletiva [Internet]. 2008 [cited 2018 Dec 15]; 13(4):1265-73. DOI: http://dx.doi.org/10.1590/S1413-81232008000400002
33. Tavares DMS, Côrtes RM, Dias FA. Qualidade de vida de idosos com diabetes mellitus. Cienc Cuid Saude [Internet]. 2011 [cited 2018 Dec 15]; 10(2):290-7. DOI: http://dx.doi.org/10.4025/cienccuidsaude.v10i2.10888
34. Sousa EL, Martins MM, Costa MS, Moreira MRC, Silva AO. Qualidade de vida e fatores associados à saúde de idosos diabéticos. Rev enferm UERJ [Internet]. 2016 [cited 2018 Dec 15]; 24(5):e8456. DOI: http://dx.doi.org/10.12957/reuerj.2016.8456
35. Gambin, G. Qualidade de vida de idosos do meio rural usuários da estratégia de saúde da família. Porto Alegre. Tese [Mestrado em Enfermagem] - Universidade Federal do Rio Grande do Sul; 2013. [cited 2018 Dec 15]. 130p. Available from: https://www.lume.ufrgs.br/bitstream/handle/10183/81788/000906219.pdf?sequence=1
36. Kolawole BA, Mosaku SK, Ikem RT. A Comparison of two measures of quality of life of Nigerian clinic patients with type 2 Diabetes Mellitus. African Health Sciences [Internet]. 2009 [cited 2018 Dec 15]; 9(3):161-6. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2887035/
37. Franco Júnior AJA, Viana HMG, Pereira AL. Qualidade de vida e controle glicêmico do paciente portador de Diabetes Mellitus tipo 2. Rev. Psicol. Saúde [Internet]. 2013 [cited 2018 Dec 15]; 5(2):102-8. Available from: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S2177093X2013000200005&lng=pt
38. Paula GR, Souza BN, Santos LF, Barbosa MA, Brasil VV, Oliveira LMAC. Qualidade de vida para avaliação de grupos de promoção da saúde. Rev Bras Enferm [Internet]. 2016 [cited 2018 Dec 15]; 69(2):242-9. DOI: http://dx.doi.org/10.1590/0034-7167.2016690206i