TEXTO & CONTEXTO ENFERMAGEM

TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

RELATION BETWEEN CAUSES OF HOSPITALIZATION AND SELF-CARE IN OLDER ADULTS WITH DIABETES MELLITUS 2

Viviana Patricia Manão Figueiroa[1]
Maria Elena Echevarría-Guanilo[2]
Paulo Roberto Boeira Fuculo Junior[2]

[1]Universidad de Magallanes. Punta Arenas, Chile.
[2]Universidade Federal de Santa Catarina, Programa de Pós-graduação em Enfermagem. Florianópolis, Santa Catarina, Brasil.

ABSTRACT

Objective: to analyze the relationship between self-care and the causes of hospitalization, in older adults with Diabetes mellitus 2.

Method: quantitative, descriptive approach. Adults over 60 years old and older, hospitalized in medical and surgical centers, attended from August to December 2018, due to diabetes complications, A characterization instrument and the Older Adult Self-Care Capacity and Perception Test was applied. Descriptive, central tendency and relationship analyses were applied.

Results: 32 people participated, 18 (56.3%) of whom were men. The years of diagnosis averaged 17.1 years (SD=12.6), 13 people (31.7%) were admitted to hospital for diabetic foot problems and 10(24.4%) for metabolic disorders. In relation to the Capacity and perception of self-care, 8(25%) presented an adequate self-care perception, 16(50%) a partially adequate self-care perception and 8(25%) without a partial deficit self-care capacity. There was a significant association between self-care and belonging to a social group (p=0.009). There was no statistical association between Capacity and perception of self-care and the causes of hospitalization: diabetic foot (p=0.587) and metabolic disorder (p=0.225). Seven of the eight dimensions showed a higher frequency of adequate self-care, but there was a higher percentage of a poor self-care 12(37.5%) in physical activity.

Conclusions: no relationship was identified between capacity and perception of self-care and causes of hospitalization, meanwhile, there were low perceptions and deficits of self-care. The study of self-care in this type of patient is relevant and allows us to intervene in poor aspects or deficits.

DESCRIPTORS: Diabetes mellitus. Older adult. Self-care. Hospitalization. Nursing.

RELACIÓN ENTRE CAUSAS DE HOSPITALIZACIÓN Y EL AUTOCUIDADO EN ADULTOS MAYORES CON DIABETES MELLITUS 2

RESUMEN

Objetivo: analizar la relación entre las causas de hospitalización y el autocuidado de personas adultas mayores con Diabetes mellitus 2.

Método: abordaje cuantitativo, de tipo descriptivo. Participaron adultos mayores de 60 años y más, hospitalizados en centros de responsabilidad médico y quirúrgico, atendidos de agostos a diciembre de 2018, por complicaciones del Diabetes. Aplicado instrumento de caracterización y el Test de Capacidad y percepción del autocuidado del adulto mayor. Fueron realizados análisis descriptivos, de tendencia central, y de relación.

Resultados: participaron 32 personas, siendo 18(56,3%) de sexo masculino. Los años de diagnóstico tuvieron una media de 17,1 años (DS=12,6), 13 personas (31,7%) ingresaron al hospital por problemas de Pie diabético y 10(24,4%) con descompensación metabólica. Con relación a la Capacidad y percepción del autocuidado, 8(25%) presentaron Percepción de autocuidado adecuado, 16(50%) Percepción de autocuidado parcialmente adecuada y 8(25%) Sin capacidad de autocuidado déficit parcial. Hubo asociación significante entre autocuidado y pertenecer a grupo social (p=0,009). No hubo asociación estadística entre Capacidad y percepción de autocuidado y las causas de hospitalización: pie diabético (*p*=0,587) y descompensación metabólica (*p*=0,225). En siete de las ocho dimensiones se observó mayor frecuencia de Autocuidado adecuado, pero en la Actividad física hubo un mayor porcentaje de Autocuidado inadecuado 12(37,5%).

Conclusión: no se identificó relación entre la capacidad y la percepción de autocuidado y las causas de hospitalización, entretanto, hubo percepciones bajas y déficit del autocuidado. El estudio del autocuidado en este tipo de pacientes es relevante y permite intervenir en los aspectos inadecuados o en déficit.

DESCRIPTORES: Diabetes mellitus. Adulto mayor. Autocuidado. Hospitalización. Enfermería.

RELAÇÃO ENTRE AS CAUSAS DE HOSPITALIZAÇÃO E O AUTOCUIDADO EM IDOSOS COM DIABETES MELLITUS 2

RESUMO

Objetivo: analisar a relação entre o autocuidado e as causas de hospitalização de pessoas idosas com Diabetes mellitus tipo 2.

Método: abordagem quantitativa, do tipo descritiva. Participaram idosos maiores de 60 anos, hospitalizados em um Centro de Responsabilidade Médico-cirúrgica, atendidos de agosto a dezembro de 2018, por complicações por Diabetes mellitus tipo 2. Foi aplicado instrumento de caracterização e o Teste de Capacidade e Percepção para autocuidado do idoso. Foram realizadas análises descritivas, de tendência central e de associação.

Resultados: participaram 32 idosos, sendo 18 (56,3%) do sexo masculino. O tempo médio de diagnóstico foi de 17,1 anos (DS=12,6), 13 (31,7) idosos ingressaram ao hospital com problema de pé diabético e 10 (31,7) com descompensação metabólica. Com relação a capacidade e percepção para o autocuidado, 8 (25%) apresentaram-se adequados, 16 (50%) parcialmente adequado e 8 (25%) sem capacidade para o autocuidado ou déficit parcial. Houve associação significativa entre autocuidado e pertencer a um grupo social (*p*=0,009). Não houve associação estatística entre a capacidade e percepção para o autocuidado e as causas de hospitalização: pé diabético (p=0,587) e descompensação metabólica (*p*=0,225). Em sete das oito dimensões se observou maior frequência de autocuidado adequado, mas na dimensão atividade física houve maior percentual de autocuidado inadequado 12 (37,5%).

Conclusão: Não se identificou relação entre a capacidade e percepção para o autocuidado e as causas de hospitalização, entretanto, houve percepção baixa e déficit para o autocuidado. O estudo do autocuidado nesses pacientes é importante e permite intervir nos aspectos que estão inadequados ou com déficit.

DESCRITORES: Diabetes mellitus. Idoso. Autocuidado. Hospitalização. Enfermagem.

INTRODUCTION

The high prevalence of Diabetes mellitus type 2 (DM2) in the population is directly associated with an increase in the main risk factors of the disease. According to the results of the National Health Survey of 2003 and 2009/10, overweight increased by 67% and sedentary lifestyles remained at 89%.[1]

Fewer people with DM2 manage to keep blood glucose levels under control for long periods of time only with non-pharmacological measures that attempt to achieve lifestyle changes and that include interventions in nutrition and physical activity programs. These are essential for the control of the disease and are normally used as part of the therapeutic treatment; however medication is indicated and necessary for an adequate and permanent control of blood glucose in people with DM2.[2]

The complexities of diabetes affect many health systems and have a major impact on the morbidity and mortality associated with this disease. In the United States, diabetes is the leading cause of blindness in adults, kidney failure, non-traumatic lower-extremity amputations. The complications related to this pathology do not appear until the second decade of hyperglycemia. Because DM2 often has an asymptomatic period of hyperglycemia before it is diagnosed, many of those affected already have complications when they receive their diagnosis [3].

Fortunately, it is possible to prevent or delay the progression of many of these complications through early detection, proper glycemic control and efforts to minimize the risk of complications ,as well as guaranteeing the adherence of users to services, through relationships, offering health promotion activities, active searches, involvement in services and programs, such as HIPERDIA and promoting user satisfaction with the service.[3–4]

A study of the prevalence and metabolic control of hospitalized diabetics showed that 57.1% (n = 20) of patients were insulin-dependent diabetics, 34.3% (n = 12) had no adherence to treatment and 65.7% (n = 23) had 10 years or more in relation to the time established since diagnosis. The diagnoses of admission according to type of disease are expressed with regards to comorbidities, with 91.4% (n = 32) being hypertensive. 62.9% (n = 22) had chronic metabolic control ($HbA_{1c} \geq 7\%$) and the same for the number of patients with some chronic disorder investigated (62.9%, n = 22). The average HbA_{1c} was 7.7% (median = 7.3%), varying from 5.2% to 13.2%. The diagnoses of admissions identified for the total of 35 people were: cardiovascular (25.7%), gastrointestinal (22.9%), nephrological (17.1%), metabolic (14.3%), respiratory (11.4%) and other (8.6%).[5]

A study performed in Cuba on diabetes mellitus, showed that more than half of the people with DM2 have unhealthy lifestyles, such as noncompliance with the diet and the practice of physical exercise, lack of metabolic control, psychotropic substance abuse, as well as insufficient knowledge of their illness. Also, by relating knowledge and self-care in people with DM2, they concluded that these patients present a lack of self-care and a low level of knowledge about their disease.[6]

Concerning the above, we understand the importance of research that investigates the self-care of these patients, based on the subsequent development of intervention programs that promote self-care. Since this is a group of patients that are vulnerable due to all the complications that this disease can cause, affecting the quality of life of both them and their families, the characteristic of chronicity, added to the condition of older adults, the objective of this study is to analyze the relationship between self-care and the causes of hospitalization, in older adults with DM2, attended medical and surgical centers of the Clinical Hospital of Magallanes in Chile.

METHOD

This is a quantitative, descriptive study developed at the Magallanes Clinical Hospital in Chile, in the units of the Adult Medical-Surgical Centers. This unit treats adults who are hospitalized for medical and/or surgical health issues, mainly cardiovascular problems, with 5600 discharges per year, an occupational rate of 96.2% in the medical centerand 84.3% in the surgical one.[7]

The inclusion of the participants in the study was for convenience, i.e, all adults over 60 years and older, regardless of gender, whose medical records contained a diagnosis of DM2 were included, with at least one year of diagnosis, whose reason for hospital admission was due to some acute condition of their basic health problem, DM2, attended in the period from August to December 2018, in other words, they presented some acute medical and/or surgical complication that was related to DM2 and they presented cognitive conditions that allowed them to respond to the data collection instruments.

The causes of hospitalization from diseases were considered as complications, such as: ischemic heart disease, cerebrovascular, chronic renal, peripheral arterial, hyperglycemic hyperosmolar non-ketotic syndrome, ketoacidosis (metabolic decompensation), diabetic retinopathy, diabetic neuropathy and diabetic foot.[8] Not all people who did not score at least 14 points on the Mini Mental Abbreviation (MMSE) participated in the study.

Two instruments were applied to obtain information from the participants and to measure self-care: a sociodemographic characterization instrument and the "Capacity and perception of self-care of the elderly" test.[9–10]

The Participant Characterization Instrument was created to determine the sociodemographic and health variables of the subjects. The set of questions in the instrument allowed for the collection of data related to the socio-demographic and health characteristics of the patients, including specific questions such as: age, gender, marital status, education level, work, and care assistance, belonging to some social group, with whom do they live, friends, years as a diabetic patient, years of treatment and current medical diagnosis. The information was also obtained from the medical record, nursing notes, Nurse on duty and directly from the participant.

The "Capacity and perception of self-care of the elderly" (CYPAC-AM) test was validated by Millán and Cámara.[9–10] This test consists of 24 questions related to self-care activities of older adults, which are divided into eight categories: physical activity, diet, elimination, rest and sleep, health control, hygiene and comfort, medication, and addictions or harmful habits. The following categories were considered for the interpretation of the scores: Between 21 and 24 points: perception of adequate self-care. Between 16 and 20 points: perception of adequate self-care. 15 points or less: without any category evaluated and 0 (zero): perception of poor self-care With 15 points or less, but with at least one category evaluated from 0 (zero): self-care deficit or partial deficit for that category. With 0 (zero) in more than four categories: total self-care deficit.

The final scores were obtained from each evaluated dimension. The first item in each determines the level of independence or depdence to carry out that activity. Faced with the negative response, they are considered dependent, i.e, with self-care deficit 0 (zero). If the answer is positive, the person is independent for that activity and they go on to respond to the other items that make up the category or dimension. For the case of three or more positive responses and no negative responses, appropriate self-care is considered and a score of 3 is given. If two or more intermediate responses (sometimes), self-care was considered partially adequate and a score of 2 was conferred. If more than one response was negative; poor self-care was considered, and one point was conferred.

To achieve the proposed objectives, the following steps were followed: after receiving authorization from the health institution for the collection of data, as well as approval from the ethics and research committee of the Universidad de Magallanes, on July 13, 2018, a pilot study was conducted with six participants, the instruments were applied, and the language used was clear. There was no problem regarding participant understanding and the response time was up to 30 minutes, The professionals on duty were informed and asked to collaborate in the process, and a clear commitment to collaborate in the study was identified.

When conducting the interviews, participants were previously informed about the purpose of the study, next the informed consent was read and signed, and then the instruments were applied. Each interview was conducted individually and lasted approximately 30 minutes. The potential participants in the data collection period were 36, however one was in isolation, one refused to participate and two scored below 14 in the Mini Mental exam.

The data was organized usingusing an Excel spreadsheet and processed using the Statistical Package for the Social Science (SPSS) program, version 22.0. The numerical variables were represented by their measures of central tendency and dispersion, the categorical variables by their frequency and percentage and relationship between the variables. The chi-square test (Fisher's exact test) was applied to determine the relationship between categorical variables. A significance level ≤0.05 was used in all cases.

RESULTS

The results correspond to 32 people who could be interviewed during the data collection period. AmongAmong the participants studied, 18 (56.3%) were male, whose average age was 71.1 years, and 19 (59.4%) were married. Among the total, 11 (34.4%) reported complete primary education and 8 (25%) incomplete and 19 (59.4%) did not work, with this condition being much more prevalent among women (78.1%) (Table 1).

From the application of the CYPAC-AM instrument, the following distribution was obtained according to categories: 8 (25%) for Adequate self-care perception, 16 (50%) for Partially adequate self-care perception and 8 (25%) for nno self-care capacity.

According to the dimensions of the CYPAC-AM, in seven of the eight dimensions there is a higher frequency in the Adequate Self-Care category, but in the Physical Activity dimension there was a higher percentage of people with poor Self-Care, 12 (37.5%), in addition, there were 9 (28.1%) who presented poor self-care. In the Health Control dimension, 5 (15.6%) were distributed in the self-care deficit category (Table 2).

Table 1 – Sociodemographic characteristics of older adults with Diabetes Mellitus 2, according to gender, treated in medical-surgical centers, Magallanes Clinical Hospital, Chile, 2018. (n=32)

Variables	Total		Female		Male	
	n	%	n	%	n	%
Age	Average: 71.3 – SD: 7.8					
60 to 74 years old	23	71.9	9	64.3	14	82.4
75 and over	9	28.1	5	35.7	3	17.6
Civil Status						
Single	1	3.1	1	7.1	0	0
Married	19	59.4	8	57.1	11	61.1
Common-law marriage	2	6.3	1	7.1	1	5.6
Widower\Separated	6	18.8	3	21.4	3	16.7
Separated	4	12.5	1	7.1	3	16.7
Level of Education						
Complete Primary	8	25	5	35.7	3	16.7
Complete Primary	11	34.4	4	28.6	7	38.9
Incomplete Secondary	4	12.5	4	28.6	0	0
Complete Secondary	6	18.8	1	7.1	5	27.8
Technical Course	1	3.1	0	0	1	5.6
University	2	6.3	0	0	2	11.1
Work						
Yes	13	40.6	3	21.4	10	55.6
No	19	59.4	11	78.6	8	44.4

Table 2 – Distribution of CYPAC-AM instrument categories, in older adults with Diabetes mellitus 2 hospitalized in the medical-surgical centers, Clinical Hospital, Magallanes, Chile, 2018. (n=32)

Category	Self-care deficit		Poor self-care		Partially adequate self-care		Adequate self-care	
	n	%	n	%	n	%	n	%
Physical Activity	8	25	12	37.5	10	31.3	2	6.3
Diet	1	3.1	3	9.4	14	43.8	14	43.8
Elimination	1	3.1	2	6.3	9	28.1	20	62.5
Rest and Sleep	4	12.5	2	6.3	8	25	18	56.3
Hygiene and comfort	-	-	1	3.1	10	31.3	21	65.6
Medication	-	-	3	9.4	7	21.9	22	68.8
Health Control	5	15.6	1	3.1	4	12.5	22	68.8
Addictions or Harmful Habits	2	6.3	9	28.1	4	12.5	17	53.1

According to gender, it can be seen that the Physical activity category is the only one most frequently in the self-care deficit category, with women presenting the highest number (n=5; 62.5%), On the other hand, men show a higher percentage in the poor self-care category(n=8; 66.7%), for the same dimension. Regarding the diet category, among the 14 participants in the adequate self-care category, 10 (71.4%) were women. By applying Fisher's exact test, the relationship between gender and category, diet obtained a statistically significant difference (p=0.006), i.e, women take more care of their diets than men (Table 3).

Table 3 – Distribution of CYPAC-AM instrument categories in older adults with Diabetes mellitus 2, according to gender, hospitalized in medical-surgical centers, Hospital Clinico, Magallanes, Chile, 2018. (n=32)

Dimensions	Self-care deficit		Poor self-care		Partially adequate self-care		Adequate self-care	
	n	%	n	%	n	%	n	%
Physical activity (*p*=0.673)								
Women	5	35.7	4	28.6	4	28.6	1	7.1
Men	3	16.7	8	44.4	6	33.3	1	5.6
Diet (*p*=0,006)								
Women	1	7.1	1	7.1	2	14.3	10	71.4
Men	0	0.0	2	11.1	12	66.7	4	43.8
Elimination (*p*=0,710)								
Women	1	7.1	1	7.1	3	21.4	9	64.3
Men	0	0.0	1	5.6	6	33.3	11	61.1
Rest and Sleep (*p*=0,585)								
Women	2	14.3	1	7.1	5	35.7	6	42.9
Men	2	11.1	1	5.6	3	16.7	12	66.7
Hygiene and comfort (*p*=0,999)								
Women	0	0.0	0	0.0	4	28.6	10	71.4
Men	0	0.0	1	5.6	6	33.3	11	61.1
Medication (*p*=0,330)								
Women	0	0.0	0	0.0	4	28.6	10	71.4
Men	3	16.7	0	0.0	3	16.7	12	66.7
Health Control (*p*=0,622)								
Women	1	7.1	0	0.0	2	14.3	11	78.6
Men	4	22.2	1	5.6	2	11.1	11	61.1
Addictions or Harmful Habits (*p*=0,834)								
Men	1	7.1	5	35.7	1	7.1	7	50.0
Women	1	5.6	4	22.2	3	16.7	10	55.6

p<0,05 Fisher's exact Test.

With the largest proportion of older adults of the male gender (56.3%), the category Partially adequate perception was the most frequent in both genders, being 8 (57.1%) in the female gender and 8 (44.4%) in the male gender. However, for women the lowest percentage was in the category without self-care capacity, self-care deficit, being 2 (14.3%) and in men the adequate self-care, corresponding to 4 (22.2%), There is no statistical significance in this relationship between the ability and perception of self-care and gender (p = 0.641) (Table 4).

Regarding the outcome of CYPAC-AM according to age, in both age groups the highest frequency was in the Partially adequate category 12 (52.2%) in the 60-74 age group and in the 75-and-over age group it was 4 (44.4%), with Adequate self-care capacity being the lowest frequency in the youngest age group corresponding to 5 (21.7%) and in the oldest age group, the lowest category was in the category Without self-care capacity, partial deficit with 2 (22.2%), no significant association was found between age and self-care capacity (p = 0.510) (Table 4).

When analyzing the relationship between self-care and level of education, it was found that the partially adequate self-care category predominated in all non-higher levels of education. Regarding complete primary school there were 7 (63.6%) and the incomplete primary school level presented 3 (37.5%) in no self-care capacity. On applying the statistical test, it was established that there was no relationship between the capacity and perception of self-care and level of education (*p*= 0.628) (Table 4).

In the marital status variable, the partially adequate self-care category was also presented with a higher percentage, married with 9 (47.4%) and widowed with 3 (50%). It is worth noting that among the persons who declared themselves as separated, there was an equal percentage in the categories of adequate self-care and partially adequate self-care with 2 (50%) in each one. There was no statistically significant association with this variable (p=0.961) (Table 4).

With regard to the work situation, when associated with the CYPAC-AM result, a higher percentage was obtained in the partially adequate self-care category for those who worked and those who did not, with 6 (46.2%) and 10 (52.6%), respectively. The 4 (30.8%) people who worked presented adequate self-care, and among the persons who worked, 5 (26.3%) presented self-care deficit. No significant statistical association was found by associating these variables (*p*=0.897) (Table 4)

The average number of years of diagnosis of the participants studied was 17.1 (SD: 12.6). In the group with less than 11 years of diagnosis, the category Partially adequate self-care predominated (n=6; 37.5%), but in the group of 11 to 20 years the category No self-care capacity was more frequent (n=3; 50%). In people with more than 20 years of diagnosis, there was still a higher percentage of partially adequate self-care. No statistical association was found for this variable with self-care (p=0.386) (Table 5).

According to treatment time, the category that had the highest percentage was Partially adequate self-care in all groups, being 5 (71.4%) in the group of 21 to 30 years, but in the group of 10 to 20 years there were 2 (40%) that presented the category self-care deficit. There was no statistical association for this variable with self-care (*p*=0.471).

As health complications are associated with self-care, partially adequate self-care is more frequent in all diagnoses, with 6 (75%) in infection and 3 (100%) in kidney failure. In the diagnosis of metabolic disorder, 4 (40%) of the people presented No self-care capacity. The association of self-care with diabetic foot, when applying Fisher's test, was p=0.587, and with metabolic compensation was *p*=0.225. These were the most frequent complications, and it was concluded that there was no statistical association between the capacity and perception of self-care and health complications.

Table 4 – Relationship between CYPAC-AM and sociodemographic characteristics, of older adults with Diabetes mellitus 2 attended in medical-surgical centers, Hospital Clinico Magallanes, Chile, 2018. (n=32)

Independent variables	CYPAC-AM Categories						P value
	Perception of proper self-care		Partially adequate self-care perception		self-care deficit, partial deficit for that category		
	n	%	n	%	n	%	
Gender							0.641
Female	4	28.6	8	57.1	2	14.3	
Male	4	22.2	8	44.4	6	33.3	
Age			Average: 71.3 - SD: 7.8				0.510
60 to 74 years old	5	21.7	12	52.2	6	26.1	
75 and over	3	33.3	4	44.4	2	22.2	
Level of education							0.628
Incomplete Primary	1	12.5	4	50.0	3	37.5	
Complete Primary	3	27.3	7	63.6	1	9.1	
Incomplete Secondary	1	25.0	2	50.0	1	25.0	
Complete Secondary	1	16.7	3	50.0	2	33.3	
Technical Superior	1	100	0	0	0	0	
Professional Superior	1	50.0	0	0	1	50.0	
Marital status							0.961
Single	0	0	1	100	0	0	
Married	5	26.3	9	47.4	5	26.3	
Common-law Relationship	0	0	1	50.0	1	50.0	
Widow	1	16.7	3	50.0	2	33.3	
Separated	2	50.0	2	50.0	0	-	
Work							0.897
Yes	4	30.8	6	46.2	3	23.1	
No	4	21.1	10	52.6	5	26.3	

p<0,05 Fisher's Exact Test

According to self-care with social support variables, it can be observed that both patients living alone, with their partner and with their family present a higher percentage in the partially adequate self-care category: 2 (50%), 4 (44.4%) and 10 (55.6%), respectively; and 3 (33.3%) of those who live with a partner have adequate self-care. There was no statistical association with this variable (p=0.898).

For the variable Requires assistance, there is also a higher percentage in the Partially adequate self-care category, 9 (45%) Requires assistance and 7 (58.3%) in no assistance. There is no statistical association with this variable (p=0.298).

Table 5 – Relationship between CYPAC- AM Health Characteristics of Older Adults with Diabetes Mellitus 2 attended at the medical-surgical Centers, Hospital Clinico Magallanes, Chile, 2018 (n=32)

Independent variables	Categories CYPAC						Value *p*
	Perception of adequate self-care		Partially adequate self-care perception		Self-care deficit, partial deficit for that category		
	n	%	n	%	n	%	
Years of diabetes diagnosis	Average: 17.1 – SD: 12.6						
1 to 10 years old	5	31.3	6	37.5	5	31.3	0.386
11 to 20 years old	1	16.7	2	33.3	3	50.0	
21 to 30 years old	2	25.0	6	75.0	0	0.0	
31 and over	0	0.0	2	100	0	0.0	
Treatment time	Media: 14.3 – DS: 11.4						0.471
1 to 10 years	4	22.2	8	44.4	6	33.3	
11 to 20 years	1	20.0	2	40.0	2	40.0	
21 to 30 years	2	28.6	5	71.4	0	0.0	
31 and over	1	50	1	50	0	0.0	
Health complications							
Infection	0	0	6	75	2	25	0.121
Diabetic Foot	4	30.8	5	38.5	4	30.8	0.587
Kidney failure	0	0.0	3	100	0	0.0	0.406
Stroke	2	28.6	4	57.1	1	14.3	0.870
Metabolic compensation	3	23	3	13.6	4	26.7	2.695

p=<0,05 Fisher's Exact Test

In relation to the type of assistance, 5 (62.5%) of those who need help in the area of cooking and feeding, present partially adequate self-care and 3 (75%) those who require help in mobility, in the same category. People who require assistance with medication are presented in the same way in all 3 categories, 1 (33.3%) in each. When applying the statistical test, no significant association was found (p=0.758) (Table 5).

According to the participation in social group and their self-care, 5 (62.5%) of the people who belong to a social group present adequate self-care and of those who do not belong, 15 (62.5%) and 6 (25%), are in the partially adequate self-care and no self-care capacity category, respectively. No statistically significant association was also found when Fisher's test was applied (p=0.009).

DISCUSSION

The patients studied, according to categories of Capacity and perception of self-care, presented a higher percentage in partially adequate self-care, with no statistical association between the causes of hospitalization and self-care.

According to the study, 83 (33.5%) people with DM2, presented good self-care capacity and 168 (66.5%) regular capacity. A direct proportional association was obtained between self-care capacity and level of education (r=0.124; p<0.05) and a negative association with religion (r=-0.435; p<0.05) and time of disease evolution (r=-0.667; p<0.05). The authors conclude that most people with DM2 had regular self-care capacity. Self-care capacity is linked to multiple variables, which deserve

attention from health professionals when suggesting education programs. This is similar to what was obtained in this investigation, since, in spite of not presenting significant statistical evidence Partly adequate self-care capacity also predominated in the overall values of this study, with most people having formal education and some even having higher education.[11]

In relation to the eight categories studied belonging to the CYPAC-AM instrument, most of the participants presented predominance in the adequate Self-care category, but in the Physical Activity category there was a higher percentage of patients with inadequate self-care, and in the diet catefory, it was observed that women take more care of themselves than men, with this association being statistically significant.

The results obtained do not coincide with those of Cámara, since a statistical association was obtained in six of the eight categories with self-care in the elderly, while in this study there was only a statistical significance with the diet and gender categories. The inclusion of a higher number of individuals in future studies will allow for further evidence for these relationships.[10]

Results like this could be compared to a study that identified that 50.4% of patients have mobility problems, 28.2% in self-care and 47.6% in regular activities. In addition to finding significant association between adherence to foot care and problems with mobility, self-care and regular activities (p<0.05). Significant association was also found between lack of exercise adherence and poor mobility, self-care, regular activities, pain and anxiety (p <0.05). Non-adherence to the diet was associated with poor mobility (p <0.05), in this study, patients who had a non-adherence rate also had a lower quality of life.[12]

The results are consistent with those obtained by Romero, with 500 participants in the cardiovascular program, where patients presented low adherence to prescribed physical activity, high adherence to the diet, and better overall therapeutic adherence in hypertensive patients than in diabetic patients.[11]

A study with 337 patients between 40 and 79 years old, described that, given that the population with DM2 is over 40 years old, among which 28% were retired, it could be thought that the difficulties at work may be higher than those found in the group of people studied, despite the fact that - in any case - it was found that not having the possibility of work and going to the doctor is an obstacle to treatment.[13]

Thus, it is understood that the design of health care can be a disadvantage for these long term treatments. Those who go to public hospitals have to maintain the days and hours stipulated for them, in addition to the number of hours they have to wait before seeing the professional. Therefore, it is not uncommon that the treatment is reduced to the minimum necessary to bring a minimum of quality. Employed patients may have more difficulty with self-care.[13]

In the present study, most participants did not work, and in both groups, those who worked and those who did not, had similar self-care categories.

There was no association between social and family support and self-care, which is not associated with the study conducted, whose results show that self-care of the older adult is significantly related to degree of family support (p<0.05). However, there was a statistically significant association between self-care and belonging to some social group, if it were studied, it could be concluded that being with peer groups with similar characteristics, can be motivational for learning and self-care.[14] The results obtained in relation to health complications that lead to hospitalization and self-care did not give statistical significance to the capacity or perception with self-care.

The study identified a reduction in microvascular complications a smaller reduction in macrovascular disease. The authors emphasize that to further reduce cardiovascular disease in these patients, the other risk factors, such as dyslipidemia, high blood pressure and prothrombotic status, must be targeted. Similarly, controlling hyperglycemia in people with DM is complex because

DM2 is a heterogeneous and progressive disease. Therefore, patients must be educated about the natural evolution of the disease, the medications they will use, the indications, contraindications and precautions. This reinforces the hypothesis that if patients are properly educated for self-care, they may have fewer complications.[15] This is not reflected in this study, as there is a concern as to whether these hospitalized older patients will have been properly educated.

Coronary heart disease (CHD) events and death rate are two to four times higher in patients with DM2 and are correlated with postprandial, fasting plasma glucose and hemoglobin A_{1c}(HbA_{1c}) concentrations. Other factors, such as dyslipidemia and high blood pressure, also play an important role.[3] Accordingly, considering the risk factors present in this diabetic age group, the probabilities of cardiovascular complications are necessary to consider in this group and that these can be studied in future long-term follow-up research.

The study showed the prevalence of poorly controlled DM (40.1%). Among the people studied there was a 25% risk of worse control if the patient changed health centers and 27% if they changed partners, family doctors and nurses. The higher the proportion of patients with no follow-up per health centre, the worse the control (OR=5.1 [95% CI:1.6-15.6]).[16]

Although these variables are not present in this study, they indicate that there are factors related to the management of the health team that influence the best control of this type of patient, and they should be studied.

Research on DM self-care is led by nurses, with a focus on teaching. Emphasis is placed on the lack of analytical and experimental studies, so that hypotheses that have emerged in observational studies can be tested and thus advance research, contributing to self-care adherence.[17]

Thus, self-care education is recommended by the WHO as a tool that makes the person with DM a protagonist in his or her treatment, allowing better adherence to treatment, and thus preventing complications caused by this chronic problem.[17]

It is important that other studies with larger samples are developed, once they allow the relationships to be investigated. This would allow more robust statistical data to be obtained, as well as studies with longitudinal delineations that would further investigate the relation of the studied variables throughout the years in people with DM, thus advancing the knowledge andcare of the patients regarding self-care.

CONCLUSION

The importance of self-care evaluation in this type of patient with chronic health problems is relevant in the sense that it evaluates the perception and capacity that they have regarding their self-care, and allows intervention to solve the deficits.

This study, which considered adults over 60 years old and older with DM2 and who were admitted due to complications resulting from their chronic disease, offers information on the characteristics that may or may not favor their decompensation, such as the capacity, perception of self-care, sociodemographic and health variables.

Half of the individuals studied presented partially adequate self-care, and a quarter of them presented no self-care capacity. This information should generate concern, since it indicates the need for action by health professionals to work on self-care with patients with DM2.

According to results obtained for this population, there is no association between self-care and the appearance of complications in these patients who are admitted to hospital for some acute condition derived from their chronic disease. However, attention is drawn to the care needs of the population studied, which were due to diabetic foot, metabolic decompensation and infection. Studies with larger numbers of participants may offer more support for the study of this relationship.

It was observed that there is a predominance of males who have support, live with their families, require some kind of help, and do not work. People who belonged to some social group presented better self-care, and an important difference between both genders in the diet dimension was highlighted. Diet was positive for women in terms of self-care, meaning that women eat better than men, but have a significant deficit in physical activity related to self-care.

The data from this research may represent the basis for further studies to establish evidence of protective and non-protective factors for the self-care of older diabetic adults, to maintain compensation and avoid complications, and in turn, to decrease hospitalizations.

REFERENCES

1. Ministerio de Salud (CL). Guía de Práctica Clínica Tratamiento Farmacológico de la Diabetes Mellitus tipo 2 [Internet]. Santiago do Chile (CL): Ministerio de Salud; 2016 – 2017 [cited 2019 Jul 01]. Available from: https://diprece.minsal.cl/wrdprss_minsal/wp-content/uploads/2018/01/DIABETES-MELLITUS-TIPO-2-1.pdf

2. Ministerio De Salud (Minsal). Diabetes: Día Mundial de la diabetes. Gánale a la Diabetes, Chile, Minsal, Chile, 2017. https://www.minsal.cl/dia-mundial-de-la-diabetes/

3. Powers AC. Diabetes mellitus: complicaciones. 19th ed. New York (US): McGraw-Hill; 2015.

4. Santos AL, Silva EM, Marcon SS. Assistance for people with Diabetes in primare care: capabilities and limitstheperspectiveof nurses. Texto Contexto Enferm [Internet]. 2018 [cited 2019 Jul 01];27(1):e2630014. Available from: http://www.scielo.br/pdf/tce/v27n1/0104-0707-tce-27-01-e2630014.pdf

5. Toledo D, Zurita N, Volosky A, Bechan A, Novick v. Prevalence, metabolic control and relationshipwith hospital stay in diabetic patients hospitalized in hospital de Quilpué. Rev Chil Endocrinol Diabetes [Internet]. 2016 [cited 2019 Sept 1];9(4):21-4. Available from: http://www.revistasoched.cl/4-2016/2.pdf

6. Soler Sanchez YM, Rosabal EP, Sánchez MCL, Rodríguez DQ. Conocimientos y autocuidado en pacientes con diabetes mellitus tipo 2. AMC, Camagüey [Internet]. 2016 [cited 2020 May 19];20(3):244-52. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1025-02552016000300004

7. Hospital Clinico de Magallanes. CR Especialidades Quirúrgicas [Internet]. 2017 [cited 2019 Feb 01]. Available from: http://hospitalclinicomagallanes.cl/cr/c-r-especialidades-quirurgicas/

8. América Diabetes Association (ADA). Complicaciones de la Diabetes Mellitus [Internet]. Ediciones 2013 y 2015 [cited 2019 Sept 01]. Available from: http://www.diabetes.org/es/vivir-con-diabetes/complicaciones.

9. Millán I. Evaluación de la capacidad de autocuidado y la percepción del estado de salud del adulto mayor en la comunidad. Rev Cub Enf [Internet]. 2010 [cited 2020 May 19];26(4):222-4. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-03192010000400007

10. Cámara FGP. Capacidad de autocuidado y percepción delestado de salud del adulto mayor de la localidad de santa María del valle [tese]. Huánuco (PE): Universidad de Huánuco Facultad de Ciencias de la Salud, Escuela Académico Profesional de Enfermería; 2016. [cited 2020 May 19]. Available from: http://repositorio.udh.edu.pe/handle/123456789/130;jsessionid=29E7A5199531A30A4FFA347753656D63

11. Romero S, Parra DI, Sanchez RJM, Rojas LZ. Adherencia terapéutica de pacientes con hipertensión arterial y diabetes mellitus tipo 2. Rev Univ Ind Santander Salud [internet]. 2017 [cited 2020 May 19];49(1):37-44. Available from: https://doi.org/10.18273/revsal.v49n1-2017004.

12. Saleh F, Mumu SJ, Ara F, Hafez MA, Ali L. Non-adherence to self-care practices & medication and health related quality of life among patients with type 2 diabetes: a cross-sectional study. Public Health [Internet]. 2014 [cited 2020 May 19];14:431. Available from: https://doi.org/10.1186/1471-2458-14-431

13. Azzollini SC, Pupko-Bail V, Vidal VA. El apoyo social y el autocuidado en diabetes tipo 2. Anuario de Investigaciones [Internet]. 2012 [cited 2020 May 19];19:109-13. Available from: https://www.redalyc.org/pdf/3691/369139948010.pdf

14. Esquivel, KDE, Guibovich KEP. "Autocuidado del adulto mayor y su relación con el apoyofamiliar". Trujillo (PE): Centro de Salud Salaverry; 2015.

15. Despaigne OLP, Despaigne MSP, Cascaret AR, Barros RNM. La diabetes mellitus y las complicaciones cardiovasculares. MEDISAN [Internet]. 2015 [cited 2020 May 19];19(5):675-83, Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1029-30192015000500013

16. Moreno AP, Pérez IS, Santos VA, Torres JLA, Holgado AD, Grande AG, et al. Control de la diabetes mellitus en población adulta según las características del personal de enfermería de atención primaria de la Comunidad de Madrid: análisis multinivel. Rev Esp Salud Publica [Internet]. 2016 [cited 2020 May 19];90:e40005. Available from: http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1135-57272016000100405

17. Oliveira PS, Costa MML, Ferreira JDL, Lima CLJ. Autocuidado em Diabetes Mellitus: estudo bibliométrico. Rev Elect Enfermería [Internet]. 2017 [cited 2019 Sept 1];(45):653-69. Available from: http://scielo.isciii.es/pdf/eg/v16n45/pt_1695-6141-eg-16-45-00634.pdf

NOTES

ORIGIN OF THE ARTICLE

Article extracted from the thesis - Relationship between self-care and causes of hospitalization of major adults with diabetes mellitus, presented to the Graduate Program in Nursing, *Universidade Federal de Santa Catarina*, in 2019.

CONTRIBUTION OF AUTHORITY

Study design: Figueiroa VPM, Echevarría-Guanilo ME.
Data collection: Figueiroa VPM.
Analysis and interpretation of data: Figueiroa VMP, Echevarría-Guanilo ME, Fuculo-Junior PRB.
Discussion of results: Figueiroa VMP, Echevarría-Guanilo ME, Fuculo-Junior PRB.
Writing and/or critical review of content: Figueiroa VMP, Echevarría-Guanilo ME, Fuculo-Junior PRB.
Final revision and approval of the final version: Figueiroa VMP, Echevarría-Guanilo ME, Fuculo-Junior PRB.

FUNDING

Coordination for the Improvement of Higher Education Personnel - CAPES.

APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved by the Ethics Committee in Research with Human Beings of the Universidad de Magalhães, on July 13, 2018.

CONFLICT OF INTERESTS

There are no conflicts of interest.

HISTORICAL

Received: January 15, 2020
Approved: July 13, 2020

CORRESPONDING AUTHOR

Maria Elena Echevarría-Guanilo
elena_meeg@hotmail.com