TEXTO & CONTEXTO
ENFERMAGEM
TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

LIFESTYLE OF THE ELDERLY PERSON LIVING WITH DIABETES AND CHARACTERIZATION OF NURSING DIAGNOSES

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ABSTRACT

Objective: to identify the lifestyle of the elderly people living with type 2 Diabetes *mellitus* and to characterize the nursing diagnoses, based on a measuring instrument.

Method: quantitative, descriptive, cross-sectional study; with participation of 35 people over 60 years old, diagnosed with type 2 Diabetes *mellitus*. The Instrument to Measure the Lifestyle of Diabetics and Cronbach's alpha of 0.81 were used. Through the inductive-deductive method, with a list of human responses in the lifestyle of the elderly living with type 2 Diabetes *mellitus*, the seven life style domains were mapped with the 13 domains of NANDA-International to formulate the diagnoses according to the definition, the related or risk factors and the defining characteristics, considering the characteristics of the elderly and the manifestations related to type 2 Diabetes *mellitus*.

Results: from the 35 participants, 28 were women and 7 men, with average age of: 72.3±6.8 years old, average time of diagnosis of Diabetes *mellitus* type 2 from 13.02±10.61 years. Of the elderly, 23 had a healthy lifestyle, characterizing eleven nursing diagnoses in the domains: Health Promotion, Nutrition, Perception/Cognition, Coping/Tolerance to Stress and Safety/Protection; the most frequent was Risk of frailty syndrome of the elderly.

Conclusion: the elderly living with type 2 Diabetes *mellitus* presented healthy and very healthy lifestyle behaviors, however, they have risk factors and particular defining characteristics that require that the nursing care should be provided individually.

DESCRIPTORES: Elderly person. Nursing diagnosis. Type 2 Diabetes *mellitus*. Lifestyle. Nursing care. Nursing.

ESTILO DE VIDA DE ANCIANOS QUE VIVEN CON DIABETES Y CARACTERIZACIÓN DE DIAGNÓSTICOS DE ENFERMERÍA

RESUMEN

Objetivo: identificar el estilo de vida de los ancianos que viven con Diabetes *mellitus* tipo 2 y caracterizar los diagnósticos de enfermería, a partir de un instrumento de medición.
Método*:* estudio cuantitativo, descriptivo, transversal; con participación de35 personas mayores de 60 años, con diagnóstico de Diabetes *mellitus* tipo 2. Se aplicó el Instrumento para Medir el Estilo de Vida en Diabéticos, alpha de Cronbach de 0.81. Mediante el método inductivo-deductivo, con un listado de respuestas humanas en el estilo de vida de los ancianos que viven con Diabetes *mellitus* tipo 2, se realizó el mapeo de los siete dominios del estilo de vida con los 13 dominios de la NANDA - Internacional para formular los diagnósticos de acuerdo a la definición, los factores relacionados o de riesgo y las características definitorias, considerando las características del anciano y las manifestaciones de la Diabetes *mellitus* tipo 2.
Resultados*:* de los 35 participantes, 28 eran mujeres y 7 hombres, con media de edad de 72.3±6.8 años, media del tiempo con diagnóstico de Diabetes *mellitus* tipo 2 de 13.02±10.61 años. De los ancianos, 23 obtuvieron estilo de vida saludable, se caracterizaron once diagnósticos de enfermería en los dominios: Promoción de la salud, Nutrición, Precepción/Cognición, Afrontamiento/Tolerancia al estrés y Seguridad/Protección; el más frecuente fue Riesgo de síndrome de fragilidad del anciano".
Conclusion: los ancianos que viven con Diabetes *mellitus* tipo 2 presentaron conductas de estilo de vida saludable y muy saludable, no obstante, tienen factores de riesgo y características definitorias particulares que requieren que el cuidado de enfermería se otorgue de forma individual.

DESCRIPTORES: Anciano. Diagnóstico de enfermería. Diabetes *mellitus* tipo 2. Estilo de vida. Atención de enfermería. Enfermería.

ESTILO DE VIDA DOS IDOSOS QUE VIVEM COM DIABETES E CARACTERIZAÇÃO DO DIAGNÓSTICO DE ENFERMAGEM

RESUMO

Objetivo: identificar o estilo de vida de idosos que vivem com Diabetes *mellitus* tipo 2 e caracterizar os diagnósticos de enfermagem, a partir de um instrumento de medida.
Método: estudo quantitativo, descritivo, transversal; com participação de 35 pessoas com mais de 60 anos, com diagnóstico de Diabetes *mellitus* tipo 2. Aplicou-se o instrumento para medir o estilo de vida em diabéticos, alfa de Cronbach de 0,81. Por meio do método indutivo-dedutivo, com uma lista de respostas humanas no estilo de vida dos idosos que vivem com Diabetes *mellitus* tipo 2, os sete domínios do estilo de vida foram mapeados com os 13 domínios da NANDA-Internacional para formular os diagnósticos de acordo com a definição, os fatores relacionados ou de risco e as características definidoras, considerando as características dos idosos e as manifestações do Diabetes *mellitus* tipo 2.
Resultados: dos 35 participantes, 28 eram mulheres e 7 homens, com média de idade de:72,3±6,8 anos, tempo médio de diagnóstico de Diabetes *mellitus* tipo 2 de 13,02±10,61 anos. Dos idosos, 23 obtiveram estilo de vida saudável, onze diagnósticos de enfermagem foram caracterizados nos domínios: Promoção da saúde, Nutrição, Precepção/Cognição, Enfrentamento/Tolerância ao estresse e Segurança/Proteção; o mais freqüente foi o risco de síndrome da fragilidade em idosos
Conclusão: os idosos que vivem com diabetes *mellitus* tipo 2 apresentaram comportamentos de vida saudáveis e muito saudáveis, porém possuem fatores de risco e características definidoras particulares que exigem que os cuidados de enfermagem sejam concedidos individualmente.

DESCRITORES: Idoso. Diagnóstico de enfermagem. Diabetes *mellitus* tipo 2. Estilo de vida. Cuidados de enfermagem. Enfermagem.

INTRODUCTION

Diabetes *mellitus* is a chronic condition that occurs when there is insufficient insulin production or the body cannot use it correctly. In the world, there are 415 million adults living with diabetes *mellitus*, by the year 2040 this figure is expected to increase to 642 million. Type 2 diabetes *mellitus* (DM2) is the most common one, and its prevalence is increasing along with cultural and social changes.[1]

In Mexico, 11.5 million people live with this disease, the highest prevalence is observed in the elderly: men and women from 60 to 69 years old (27.7% and 32.7% respectively), and from 70 to 79 years old (29.8%). DM2 and its complications lead to significant losses for people who suffer from it and their families, 90% of the global cases of DM2 are due, to a large extent, to an excessive body weight and an unhealthy lifestyle.[1–4]

Lifestyle is the free activities with a significant impact on the state of health, and that are part of a daily pattern. The American Diabetes Association states that the lifestyle change is an essential aspect for the self-control of DM2, including education, monitoring, nutrition, physical activity, stop smoking and psychosocial care. The modification of the lifestyle in the elderly is one of the challenges for the nursing professional practice, in which it is required to have a proper knowledge package through the theories and models, applying the scientific method through the nursing process and having a common scientific language.[5–7]

The nursing process consists of five stages: assessment, diagnosis, planning, execution and evaluation. The Health Promotion Model of Nola Pender mentions that in the assessment stage one there must be information on the person in different domains, among them the lifestyle; the data obtained lead directly to the diagnosis stage. The nursing diagnoses guide the choice of results and interventions.[5,7–10]

The nursing language allows to deliver a standardized semantics among the professionals, the NANDA - International (NANDA-I) publishes the classification of nursing diagnoses, and defines the nursing diagnosis as a clinical judgment with respect to a human response or a condition of health/life process, or vulnerability to that response by the person, family, group or community; the nursing diagnoses may be focused on the problem, or a state of health promotion or potential risk. The decision-making about an accurate diagnosis requires intellectual, interpersonal and technical skills.[11–13]

The characterization of the nursing diagnoses in a specific population allows for the planning of care based on their needs, as well as the elaboration of standardized care protocols and care plans.[14]

The instruments can be taken as a basis to evaluate different types of studies of quantitative approach, as well as being important tools in the improvement of evidence-based clinical practice;[15–16] then, with the data obtained from instruments, individual and group nursing diagnoses are established. Therefore, the objective was to identify the lifestyle of the elderly living with DM2 and to characterize the nursing diagnoses, based on a measuring instrument.

METHOD

It is a descriptive study, with a quantitative, transversal approach. The participants were 35 elderly living with DM2, users of the outpatient unit of the Specialized Center for Primary Health Care (*Centro Especializado de Atención Primária de la Salud* - CEAPS): Santa María Rayón Bicentenario, belonging to the jurisdiction Tenango del Valle, the Institute of Health of the State of Mexico (*Instituto de Salud del Estado de México* - ISEM) and the House of the Elderly of the municipality of Santa María Rayón, of the State of Mexico, Mexico.

The individuals who met the following inclusion criteria were selected: to be over 60 years old, with a confirmed diagnosis of DM2, of both genders, with or without complications. A person with

hearing impairment and impaired vision was excluded, since due to a lack of an effective communication they did not sign the consent.

The Instrument to Measure the Lifestyle in Diabetics (IMEVID) was used, composed of 25 items, grouped into seven domains: nutrition, physical activity, tobacco consumption, alcohol consumption, information about DM2, emotions and therapeutic adherence. Built and validated in the Mexican population, with a reliability calculated with Cronbach's alpha of 0.81 for the total rating.[17] Each item has three response options to which the values of zero, two and four were assigned, with the latter being the ideal value according to the behavior performed; the following scale (100-75) very healthy, (74-50) healthy, (49-25) little healthy, and (24-0) unhealthy.[18]

The questions were formulated to each participant, by the researchers, after the authorization of the institutions and the signing of the free and informed consent term, in the period between April and May 2016. Additionally, the biological and socioeconomic data were collected through a questionnaire specifically designed, the anthropometry (weight and height) was accomplished, using a mechanical scale with a stadiometer, for determining the Body Mass Index (BMI).

Through the inductive-deductive method, the data was categorized into *Excel* for *Windows* spreadsheets. A list with the human responses was prepared, for the seven domains of the lifestyle of the elderly living with DM2; afterwards, the mapping with the 13 domains of the Taxonomy II of NANDA-I was developed (Chart 1)

Chart 1 - Domains of lifestyle and Domains of the NANDA – International (NANDA-I)

Lifestyle domains	Lifestyle domains
Nutrition	1. Health promotion
	2. Nutrition
Physical activity	3. Elimination and interchange
	4. Activity/Rest
Tobacco use	5. Perception/Cognition
	6. Self-perception
Consumption of alcohol	7. Role/Relations
	8. Sexuality
Information about Diabetes	9. Coping/Tolerance to stress
	10. Vital principles
Emotions	11. Security/Protection
	12. Comfort
Therapeutic adherence	13. Growth/Development

Source: IMEVID,[17] NANDA-I.[12]

The mapping was done identifying the equivalence of the lifestyle domain Nutrition with the NANDA-I Nutrition Domain, referring to the activities of ingesting, assimilating and metabolizing the nutrients in order to maintain and repair the tissues and produce energy. The domain of NANDA-I, Health Promotion, referring to the awareness of the well-being or normality of the functions and strategies used to maintain control and promote the well-being or normality of the function, was inclusive in the domains of Lifestyle: Physical activity, Tobacco consumption, Alcohol consumption and Therapeutic adherence. In the same context, an approach was found between the lifestyle domain, Diabetes Information, with the domain of NANDA-I, Perception/Cognition: described as the human information processing system that includes attention, orientation, sensation, perception, cognition and communication. To conclude, the lifestyle domain, Emotions, was linked to two domains of NANDA-I:

Coping/Tolerance to stress, relative to the way of coping with life events or processes; and Security/Protection, defined as the absence of danger, physical injury or disorder of the immune system, prevention of losses and preservation of protection and safety.

Subsequently, the nursing diagnoses were determined with the inductive method according to the definition, the related or risk factors and the defining characteristics were ratified with the deductive method, ordering the nursing diagnoses with the biological, psychological and social characteristics of the elderly and the manifestations of DM2.

For the analysis, it was used the descriptive statistics and data presentation in tables with frequencies. The participants accepted voluntarily, manifesting with the signature of the free and informed consent term.

RESULTS

Biological and socioeconomic data

The participants were 35 elderly living with DM2, 28 female, with a mean age of 72.3±6.8 years old, with a range between 61 and 88; the mean time of diagnosis with the disease was 13.02±10.6 years, with a range between 1 and 45; 16 had a complication of DM2, being the most frequent the systemic arterial hypertension, 13 had other diseases such as: high cholesterol level, venous insufficiency, colitis, arthritis, osteoporosis, vertigo, cholelithiasis, hypothyroidism, asthma and cataracts. Of the elderly people interviewed, 19 were widowers and 18 depended economically on the family (children or husband). All the elderly interviewed had a health insurance, which implies that they have access to health services. For more details, the frequency of the biological and socioeconomic data is presented in Table 1.

Table 1 - Distribution of elderly living with diabetes *Mellitus* type 2 in terms of frequency, according to biological and socioeconomic data. Santa María Rayón, Mexico, 2016. (n=35)

Biological and socioeconomic data	N
Gender	
Female	28
Male	7
Complications of type 2 Diabetes *Mellitus*	
Present	18
Absent	17
Comorbidity	
Present	13
Absent	22
Pharmacotherapy	
Metformin	11
Metformin with Glibenclamide	10
Metformin with Insulin	3
Insulin	1
Glibenclamide	1
Unknown	7
None	2
Civil status	
Widow/Widower	19
Married	15
Single	1

Table 1 - Cont.

Biological and socioeconomic data	N
Kind of family	
Extensive	18
Nuclear	14
Alone	3
Economic dependence	
Family (husband or children)	18
Pension	8
Government support	3
Employment	2
Governmental work and support	2
Pension and work	1
Savings	1

Lifestyle

Ten of the elderly were identified with a very healthy lifestyle, which means that they consume vegetables and fruits every day of the week, additionally they eat less than three tortillas and less than one bread a day, they never add extra salt to food or sugar drinks, snacks, do not consume food outside the home and when they finish eating they do not ask for more. In 23 a healthy lifestyle was determined, there are those who sometimes fail to meet the standards of a very healthy lifestyle and two with an unhealthy lifestyle, in which they rarely meet the very healthy lifestyle; the classification according to gender can be observed in Table 2.

Table 2 - Frequency for the classification of the lifestyle of the elderly living with type 2 Diabetes *mellitus*, according to gender. Santa Maria Rayon, Mexico, 2016. (n=35)

Classification of Lifestyle	Men	Women
Very healthy	1	9
Healthy	6	17
Little healthy	0	2

The prevalence or characterization of the nursing diagnoses for each domain of NANDA-I identified in the elderly living with DM2 is presented in Table 3.

Table 3 - Characterization of nursing diagnoses in the elderly living with Type 2 Diabetes *Mellitus*. Santa Maria Rayon, Mexico, 2016. (n=35)

Nursing diagnosis	n
Domain 1. Health promotion	
00231 Risk of frailty syndrome in the elderly	35
00078 Ineffective health management	8
00079 Non-compliance	25
0168 Sedentary lifestyle	31
Domain 2. Nutrition	
00179 Risk of unstable blood sugar level	29
00233 Overweight	22
00232 Obesity	6
Domain 5. Perception/Cognition	
00126 Poor knowledge (about the control of type 2 Diabetes *Mellitus*)	29

Nursing diagnosis	n
Domain 9. Coping/Tolerance to stress	
00241 Deterioration of mood regulation	21
Domain 11. Security/Protection	
00150 Suicide risk	1
00155 Falling risk	30

DISCUSSION

In the present study, the quantification for the lifestyle of the elderly group living with DM2 was determined as follows: 65.7% as healthy, 28.6% very healthy and 5.7% unhealthy; similar to what was found in a study conducted in Monterrey, Mexico, in which they report 56% healthy, 29% very healthy, and 13.8% unhealthy; in which the sample was 65 people living with DM2, most were between 40 and 59 years old.[19] Which suggests that adults and elderly living with diabetes have a healthy lifestyle.

A healthy lifestyle in the elderly helps to prevent complications in relation to their pathology, achieving thus a better well-being during their life and reducing the presence of complications.[18] The elderly living with DM2 reported a healthy lifestyle; however, there are defining characteristics that lead to ten nursing diagnoses of NANDA-I.[12]

In Domain 1 - Health Promotion, it was characterized that the total of participants presented the diagnosis Risk of frailty syndrome of the elderly: because 35 were living with DM2 and 13 were suffering from another chronic disease, 20 were over 70 years old, 31 showed a sedentary lifestyle and five had suffered from falls; 25 with the Non-compliance diagnosis: 14 for not following the medical indications, 11 for suffering a complication of DM2 and seven for not following directions and suffering a complication; eight elders with the diagnosis of ineffective management of health: for not taking action to reduce risk factors, such as smoking or drinking alcoholic beverages, which favors the appearance of complications.[20]

The diagnosis Sedentary lifestyle was manifested in 31 elderly, although all participated in a program that includes physical activity, doing at least 15 minutes of aerobic exercise, breathing and stretching, one to two times a week, ten people only exercised when they participated in this program and six almost never did it, due to previous fractures and history of falls. On the other hand, six elderly living with DM2 kept themselves busy outside the usual activities only a few times, and five of them almost never. In their free time, 15 elderly carried out works at home and 16 carried out sedentary activities such as knitting or watching television. With the aforementioned, the following related factors are identified: attitudes, beliefs and/or health habits that hinder the practice of exercise, lack of social support and presence of pain, which are not found in the NANDA-I taxonomy, however they were determined in the validation of the nursing diagnosis made by experts in people with hypertension.[21]

In Domain 2 - Nutrition, three nursing diagnoses were established: Risk of unstable blood sugar level, since 29 elderly did not have enough knowledge about the DM2 management, 19 had an ineffective medication management and 14 did not adhere to the therapeutic plan, specifically the feeding plan, as there is evidence of low intake of vegetables, high consumption of sugary drinks, bread and tortilla, which is essential to achieve sugar blood control and balanced weight.[22] The above is credited with the structured Overweight diagnosis for 22 elderly who had a body mass index (BMI) greater than 25 kg/m^2; and six for Obesity, for having a BMI greater than 30 kg/m^2.

In Domain 5 - Preception/Cognition, the diagnosis Deficient knowledge (on the control of DM2) was determined in 29 elderly, evidenced because 27 participants had not attended any lecture for people living with DM2, and two elderly had attended one or two lectures.

In Domain 9 - Coping/Tolerance to stress, it was diagnosed in 21 elders, as for "Deterioration of the regulation of mood", 20 said they felt sadness, 12 of them also got angry easily, and one just felt irritable; attributable to the elderly's losses, specifically health, since satisfaction with life is related to the self-perceived health,[23] together with other losses such as death of a spouse, unemployment, changes in family structure (marriage or divorce of the children, changes of residence of a family member), economic problems, etc., the elderly living in extended family towards their own social, sentimental and economic problems of children and grandchildren, those who live in a nuclear family show abandonment.

The Domain 11- Security/Protection, the diagnosis "Suicide risk" was identified in an elderly woman who manifested having pessimistic thoughts about her future, including suicidal ideas, despite having a very healthy lifestyle; and the diagnosis "Risk of falls" in 30 elders by age equal to or greater than 65 years old, five reported a history of falls, one had the use of assistive devices (stick), three lived alone, 29 had the risk of alteration in the blood sugar level, two suffered from arthritis and one had deterioration of balance; DM2 constitutes a risk of falls in 27.37%.[24]

The elaboration of the nursing diagnoses in this work proved that a nursing diagnosis follows next to others (named by NANDA-I as a syndrome), so it is better to address them together.[12] As an evidence we have the following diagnoses: Risk of unstable blood sugar level, which includes the following diagnoses: Overweight, Obesity, Poor knowledge, Sedentary lifestyle, Ineffective health management and Non-compliance; likewise, the diagnosis Deterioration of the regulation of mood includes the diagnosis Suicide risk; and in the same context the diagnosis Risk of frailty syndrome of the elderly includes the diagnosis Risk of falls.

The eleven diagnoses were compared with the results of the study denominated content validation of the nursing diagnosis classification 2015-2017 of NANDA-I for approaching the chronicity in primary care,[25] finding that eight diagnoses comply with the validation of content, with the exception of the diagnoses Suicide risk, Risk of frailty syndrome in the elderly and Risk of falls, which have a low score due to the lack of adequacy in people with chronic diseases, however, they were found in the elderly living with DM2 of this study, so it is suggested to include them in the standardized plan.

In the paper denominated Nursing Diagnoses for diabetic patients using insulin, the following nursing diagnoses were identified: impairment of integrity, infection risk, health search behavior, sleep pattern disorders, chronic pain and risk for peripheral neurovascular dysfunction; the assessment was made based on Orem's self-care theory and the participants were people aged 60 years old and over;[26] despite this, it does not coincide with the diagnoses identified in this study where just four people were administered insulin and the sample was larger.

The individualization of the nursing care plan should aim to reduce or diminish the related and risk factors, showing excellent results and autonomy within the limits imposed by the age,[27] therefore, the nursing diagnoses shown in this document can be used to validate diagnoses identified in the professional practice and establish individual care plans.

It is necessary to do basic research of the nursing language, in order to determine the validity and reliability of the diagnoses, as well as to have a directory of experts in Mexico.

CONCLUSION

The elderly living with DM2 reported behaviors that classify the lifestyle as healthy and very healthy, however, they have very specific risk factors and defining characteristics that require that nursing care should be individual and specific, in comparison with the rest of the people living with DM2.

In accordance with the obtained results, it is suggested that it is necessary to have a standardized care plan for the elderly living with DM2, integrating at least the nursing diagnosis Risk of unstable blood sugar level, Deterioration of the regulation of mood and Risk of frailty syndrome in the elderly,

to contribute to a very healthy lifestyle, considering the biological and socioeconomic data, in order to achieve control of the disease, prevent complications and increase the quality of life.

The instrument for Measuring the Lifestyle of Diabetics is useful for assessing the lifestyle of the elderly living with DM2, through which the significant data that lead to the development of nursing diagnoses are identified.

The nursing diagnoses of the NANDA-I are applicable to groups, as well as to the elderly living with DM2, in order to address the problems of Public Health. Therefore, it is suggested to intervene with group health promotion programs and based on a nursing theory.

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NOTES

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ETHICS COMMITTEE IN RESEARCH

Approved by the *Comité de Ética en Investigación de la Jurisdicción Sanitaria* No.4 Tenango del Valle MCSSA015345, *Instituto de Salud del Estado de México*.

CONFLICT OF INTEREST

There is no conflict of interest.

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