Nursing Care for Elderly Patients with a Risk of Unstable Blood Sugar from Systems Theory: Case Report

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Abstract

Introduction: Diabetes mellitus is included in the group of chronic non-communicable diseases, its therapeutic management is prolonged and requires special care to avoid complications, an aspect studied in the patient with diabetes is the glycemic index (GI) to quantify the glycemic response and insulinemia to carbohydrates ingested in different foods by comparing it with the response of a reference food. Objective: To implement nursing care to elderly patients with risk of unstable glycemia based on the theory of Betty Neuman. Methodology: Clinical case, descriptive; based on the theoretical foundations of the concept of system theory of Betty Neuman, we take into account the Nursing Care Process (NCP) of the taxonomies NANDA NIC and NOC. Instruments used: Family health instruments (Apgar, Familiogram, Ecomap) and System Nursing Theory. Results: comprehensive nursing care was provided, nutritional advice focused on the need for dietary modification and on self-care practices of diabetes Conclusions: the patient improved his risk process of unstable glycemia, strengthening self-care behaviours. The care provided to the patient had its disciplinary and scientific bases in the model of Betty Neuman, which allowed after all the interventions that the patient internalizes the behaviors of care of his pathology.

Keywords: Nursing Care, Elderly, Diabete Mellitus, Nursing Theory

INTRODUCTION

Type 2 diabetes mellitus is a chronic disease of multicausal etiology, characterized by imbalance in the assimilation of carbohydrates, associated with a deficit in the secretion or action of insulin, which causes chronic hyperglycemia leading to macrovascular and microvascular complications. Its prevalence has a tendency to increase, for several reasons, including: unhealthy lifestyles (food, physical activity, stress management) [1].

Diabetes mellitus type 2 (DM2), which is occurring epidemic in most countries, especially those with low economic resources, is considered, worldwide, as a public health event that occupies the top positions in the epidemiological profile of many countries, responsible for multiple acute and chronic complications, severe limitations and disability in those who suffer from it [2].

The statistics indicate that the DM is present in 340 to 536 million figures declared by the International Diabetes Federation (IDF), and that around 2040, these figures are expected to increase to 521 to 821 million respectively. According to estimates, the global prevalence of DM, which was 2.8% in the year 2000, will increase to 10.4% in 2040 [3].

In Latin America, demography has undergone significant transformations in the last five decades,

reflected in the increase in the life expectancy of populations, added to this is the epidemiological transition of the mortality pattern, which implies an increase in the prevalence of non-communicable diseases. In this sense, current projections condition that by 2050 25% of this population will be over 60 years of age, so that the burden that will represent these diseases, and in particular the DM, will be significant [4].

DM is included in the group of chronic non-communicable diseases, its therapeutic management is prolonged and requires special care to avoid complications. It represents a high social and health cost, although there is a reduction in the burden of this disease the trend in costs is to rise; an increase in the economic burden of 69% is estimated by 2030, which makes its prevention a priority, timely diagnosis and adherence to non-pharmacological and pharmacological management [5].

An important element in the management of people with diabetes is the glycemic index (GI), measures the ability of food (carbohydrate) to increase glycemia (blood sugar) after being ingested. The risk of unstable blood sugar level (00179) is a nursing diagnosis (ED) from NANDA International, Inc. (NANDA-I), defined as "vulnerability to variation in blood glucose/sugar levels relative to normal variation, which may compromise health". 16 risk factors are described: altered mental status; average daily physical activity is lower than recommended by sex and age; delayed cognitive development; excessive weight gain; compromised physical health; insufficient knowledge about diabetes management; ineffective medication management; insufficient diabetes management; excessive stress; failure to accept diagnosis; failure to adhere to the diabetes therapeutic plan [6]. The literature reports evidence of variation in glycemic levels that can increase the rate of complications and mortality of hospitalized persons with acute coronary syndrome. which impacts on the quality of life and productivity of those who suffer from it, as well as on the economic cost to the health system. In this way, the recognition of the risk factors of unstable blood sugar level and the implementation of preventive measures can contribute to obtain positive results for which nurses have responsibility. [7]

In general, foods with a low GI contribute to gradually raising blood glucose while foods with a high GI increase blood glucose rapidly. The faster the absorption of glucose, the greater demand for insulin is generated which increases the function of the pancreas (recharge), situation that favors the development of Diabetes or Pre-diabetes. It can also generate "reactive hypoglycemic" sugar drops about two hours after ingestion, which are due to an exaggerated secretion of insulin [8]. The objective of the case was to implement nursing care to an older adult patient with risk of unstable glycemia based on the theory of Betty Neuman.

Risk of Glycemic Index (GI) from Systems Theory

Diabetes mellitus (DM) is a chronic disease that, according to the World Health Organization (WHO) report, has shown an alarming increase in its prevalence, especially in underdeveloped and middle-income countries; its occurrence is considered by the World Health Organization and the International Diabetes Federation (FID) as a "global epidemic", affects people in their most productive age of life, impoverishing their families and thus decreasing life expectancy, becoming one of the diseases with the greatest impact at the level of the health system [9].

Today, the global prevalence of DM2 in people over 18 years of age has increased from 4.7 per cent (108 million people) in 1980 to 8.5 per cent (422 million people) in 2014; this increase has been most rapid in middle- and low-income countries [10]. In Colombia, it is estimated that between 8.5 and 9% of the adult population has diabetes. This means that there are about 4. 000,000 people in the country with this condition; most of all type 2 diabetes. After age 40, an estimated 1 in 10 people is diagnosed with

diabetes [11].

In Colombia, by Agreement 117 of 1998, Type II diabetes mellitus was included as one of the chronic non-communicable diseases of public health interest that should be subject to timely care and follow-up to ensure their control and reduce complications that can be avoided by improving lifestyles of the population [12].

The glycemic index (GI) quantifies the glycemic response and insulinemia to carbohydrates ingested in different foods by comparing it with the response of a reference food, usually white bread or glucose. GI represents the quality of the carbohydrate consumed. The glycemic load (CG) is a mathematical calculation resulting from multiplying the GI by the amount of carbohydrates consumed divided by 100 (CG= IG*Carbohydrate amount/100). Various national and international studies have shown the positive effect of diets with low glycemic index (GI) on lipids in hyperlipidemic and diabetic patients. The WHO and FAO Committee of Experts on Nutrition recommended that GI should be considered when comparing foods within the same group. In addition, the nutrition group of the European Association for the Study of Diabetes Mellitus Type II states that foods with low GI should replace foods with high GI. However, the American diabetes association fails to propose the use of GI in nutritional treatment [13].

The Neuman Systems Model is based on the general theory of systems and reflects the nature of organisms as open systems. This theory affirms the constant interaction between them and the environment. Betty Neuman's model extracts knowledge from a multidisciplinary perspective, integrates her own philosophical beliefs and nurse experience; utilizes elements of Gestalt theory,which describes homeostasis as a process from which an organism is maintained in equilibrium with the environment, consequently the health status of this depends on the relationship of the individual with the field-environment that is found and is altered when conditions vary [14].

Neuman describes the adjustment as the process that allows the body to meet its needs this is due to the existence of different needs and each of them can induce the imbalance of the patient, the adjustment process is dynamic and continuous, which is part of the nature of the organism. When the stabilizing process fails to a certain extent or when the organism remains in a non-harmonic state for too long the disease can occur. If the body cannot compensate for the disease, it can die [15].

MATERIAL AND METHOD

Type of study: Clinical case, qualitative descriptive. Inclusion criteria: Patient with type II diabetes mellitus, with bipolarity and behavioural disorders due to the use of multiple psychoactive substances, detained in a health institution in the city of Barranquilla, Exclusion criteria: patient who does not have type II diabetes mellitus, patient who is not confined to a health institution in the city of Barranquilla. *Instruments used:* Family health instruments (Apgar, Familiograma, Ecomapa) and Betty Neuman's nursing theory "system model theory". Ethical considerations: Resolution 008430 of October 4, 1993 of the Ministry of Health of the Republic of Colombia was taken into account, establishing that it is a risk-free investigation. And signature of the informed consent. The case study was conducted in a private health institution in Barranquilla, Colombia, where a 66-year-old male patient with type II diabetes mellitus was identified, in addition to bipolarity and behavioral disorder due to the use of drugs and psychoactive substances. An interview was conducted, the intention to conduct a case study was explained to the patient's family and they agreed to participate.After identifying the need of the patient, a bibliographic search was carried out in the databases (scielo, Redalyc, Elsevier) the nursing care process was carried out taking into account the NANDA taxonomies, NOC Y NIC and application of Betty

Neuman systems model theory.

CASE

A 66-year-old male patient who is currently living in a room with a cousin since November 2020; his ex-wife and daughters are responsible for food and a rent sister. He was married, with 2 children (both suffer from microcephaly), separated 22 years ago by domestic violence, later had another couple had a son, lived in Valledupar, she died 3 years ago. He worked as a taxi driver, had no higher education. As for her family history her maternal line of depression, maternal uncle committed suicide, maternal grandmother serious mental illness, hypothyroidism sister, rheumatoid arthritis. The Patient enters the Health Institution, in the company of ex-wife and daughters who report clinical picture of more or less 4 days of evolution characterized by street behavior, endless wandering, easy crying, poor sleep pattern associated with poor adherence to the pharmacological plan. family suspected use of substance associated with ideas of death.He worked as a taxi driver, had no higher education. As for her family history her maternal line of depression, maternal uncle committed suicide, maternal grandmother serious mental illness, hypothyroidism sister, rheumatoid arthritis. The Patient enters the Health Institution, in the company of ex-wife and daughters who report clinical picture of more or less 4 days of evolution characterized by street behavior, endless wandering, easy crying, poor sleep pattern associated with poor adherence to the pharmacological plan. family suspected use of substance associated with ideas of death.

Type II diabetes mellitus, insulin dependent, bipolar affective disorder and long-standing personality disorder with 3 hospitalizations. Patient with a history of psychoactive substance use (began its consumption more than 20 years ago, diagnosed with type II diabetes mellitus, a patient who recently has unstable blood sugar, because they have bad eating habits little control, on the food they eat, constant mood changes that often causes you to stop eating and present state of hypoglycemia. Continuous in-hospital management, fractionated hypoglucid diet, apidra insulin. Apply 10 units at night with previous glucometry.

Betty Neuman Model Articulation to Patient with Type II Diabetes Mellitus (Figure 1).

The patient with a medical diagnosis of type II diabetes mellitus, an insulin-dependent patient with an imbalance in blood glucose values, has high and low blood glucose peaks, ranging from 250 mg/dL to 85 mg/dL.

The normal line of defense is the solid outer circle of the model. It represents the adaptive level of health developed over time as normal with respect to which to measure the deviation from well-being [16]. The expansion of the normal line of defense reflects an improved welfare state, and the contraction indicates a diminished welfare state, the patient has crossed the normal line of defense since, looking at it as an open system in interaction with the environment, has had an imbalance of the glycemic index due to a bad diet, his relatives bring him meals with high caloric indices, which causes an increase in blood glucose which explains the presence of high peaks.

The outer discontinuous circle of the model (flexible line of defense). It is perceived as a cushioning element of protection to prevent stressors from opening the way to the usual welfare state represented by the normal line of defense. Situational factors can influence the degree of protection provided by the flexible line of defence, both positively and negatively. Neumann describes the flexible line of defense as the first protective mechanism of the client system. When the flexible line of defense expands, it provides greater short-term protection against the invasion of stressors; when contracted, it provides less protection [17]. This flexible line of defense in the patient is contracted due to mental disorders by consumption of

drugs and psychoactive substances and this produces alterations in mood, hostility, irritability, sadness, decay and hopelessness, As this flexible line of defense is altered the stressors have contact with the individual and produces the imbalance of the organism, reflected in decreased appetite and this cause low blood glucose peaks.

Neuman argues that stressors are stress-producing stimuli that are generated within the limits of the customer's system and that result in a result that can be positive or negative about their health status. Intra-personal forces take place within the individual, such as conditioned responses (mood changes due to mental disorders that cause decreased appetite to the patient). Interpersonal forces take place among one or more individuals, such as role expectations (The lack of information from the family about the diet and nutritional balance that diabetics should have, makes them provide the patient with highly processed foods, rich in saturated fat, unhealthy sugars and fat). Extra-personal forces are present outside the individual, such as economic circumstances (lack of resources of the patient to have nutritional advice, a balanced diet according to his disease, where the consumed foods help to maintain the glycemic balance).

Interventions are determined actions that help the client retain the stability of the system, achieve and/or maintain it; They can be developed before or after the lines of defense and resistance are overcome. Neuman agrees to start the procedure when a stressor is suspected or has already been identified. Interventions are based on actual response, resources, objectives and expected outcome. Neuman indicates three levels of intervention: 1) primary; 2) secondary; and 3) tertiary [17]. [18]

Primary prevention

Primary prevention should be developed when a stressor is suspected or its presence or risk has been identified regardless of whether you have had the time to react to it. The goal is to reduce the possibility of an encounter with the stressor or reduce the possibility of a reaction. In the case of the diabetic patient, the presence of the stressors has already been identified, the main ones are the changes in mood due to mental disturbances and from there depends on whether the patient eats or not, which damages his medical condition.

Secondary prevention

Secondary prevention is interventions or treatments initiated after symptoms of stress manifest. The internal and external resources of the patient are used to strengthen the internal lines of resistance, reduce the reaction and increase the resistance factors (Neuman). The patient's main resource is his awareness of the disease, the willingness and willpower he has to change his health behavior, transform unhealthy lifestyles into healthier ones according to his energy requirements.As for the external resources to normalize your blood sugar when it oscillates between the highest peaks, you apply insulin daily, take glycometry every 12 hours, to monitor it; In addition, it is surrounded by an interdisciplinary group made up of psychiatry, general medicine, nursing, nursing assistants, psychology and social work, which from their field of action and discipline intervene it.

Tertiary prevention

Tertiary prevention takes place after active treatment or the secondary prevention phase; its purpose is the optimal recovery of the system; maintaining excellent well-being by preventing recurrence of reaction or regression. Tertiary prevention regresses in the form of circles towards primary prevention (Neuman).The treatment is based on hypoglucid diet, insulin Apidra, apply 10 units at night with previous glucometry, perform glucometry every 12 hours, warn changes. continuous individual, family and group psychotherapy, strict surveillance, risk of self-aggression, risk of heteroaggression, risk of flight and risk

of fall. The most important thing is to change eating habits, since the diet plan is the fundamental pillar of the treatment of diabetes. Healthy eating plays an important role in controlling the signs, symptoms and consequences of the disease and is a protective factor for the non-diabetic population [19].

The reconstitution takes place after the treatment of the reactions of the stressors. It represents the system's return to stability, which can be at a higher or lower level of well-being than before the invasion of the stressor element (Neuman).

Figure N° 1a. Betty Neuman Model Articulation to Patient with Type II Diabetes Mellitus
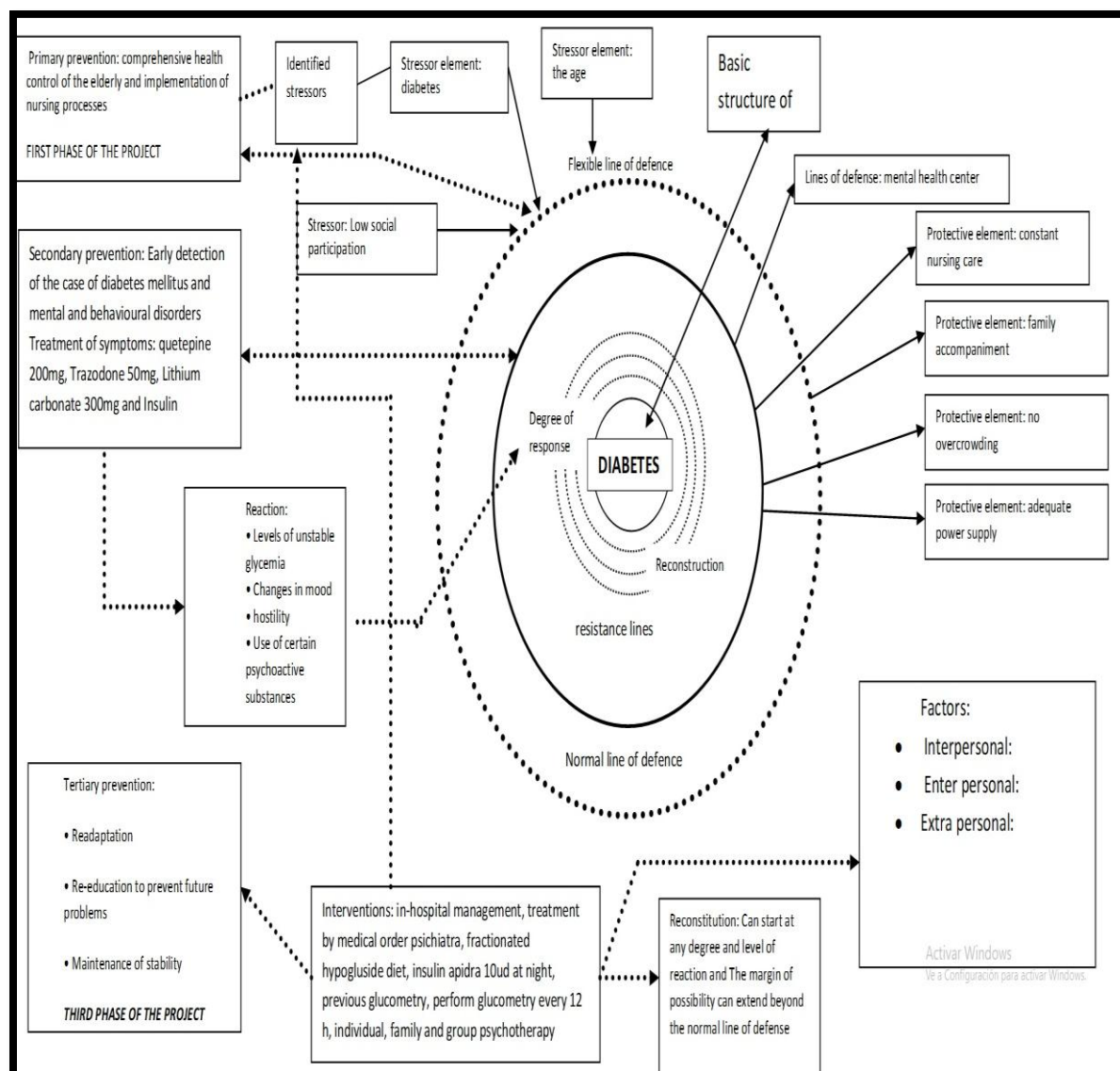
Source: Authors' own creation.

As part of the assessment process, family health instruments (Apgar, Familiograma, Ecomapa) and the Nursing Care Process (PAE) were applied, taking into account the NANDA, NOC and NIC taxonomies, applying the Betty Neuman System theory.

Apgar showed severe family dysfunction among all members (sum of all items: 9).

The application of the familygram reported that the family is of a reconstituted or composite type, made up of 2 people (two cousins), the patient does not work and the income is not sufficient to support the household, He is at a cousin's home nursing his expenses are divided between the ex-wife, his two daughters and his sister, while his other 3 sons live in another city, two of them have microcephaly and the one he had with his last wife is studying.All members of this family have a subsidized health regimen, the patient suffers from diabetes and mental disorders, two of their children have microcephaly and none of them have healthy lifestyles.

The Ecomapa reported social determinants affected and unaffected which are the following:

The social gradient is affected because the social environment where the patient lives is not in good condition. First years of life: this determinant is affected because the children of this family do not develop in an environment and conditions favourable to their development. Addiction: is severely affected by the fact that in the family the patient has been a consumer of drugs and psychoactive substances for 20 years and is currently suffering from mental disorders and is hospitalized in a rehabilitation centre. *Social exclusion*: it is affected because the family does not participate in its community and is not taken into account in the support/ benefits offered in its environment. Transportation: not affected by the fact that the family has its own vehicles and the roads are in good condition. Social support: the family does not have the necessary support from the community and the state. Food: it is not affected by the fact that the family consumes the meals at the indicated times and in the necessary quantities. *Stress:* This determinant is affected since some family members have mental problems, bipolar affective disorder, type II diabetes mellitus and personality disorders, which means that today they are confined in a mental health center. Work: is affected by the fact that the family does not have stable jobs.

Care Plan Stages of the Nursing Process (Assessment, diagnosis, planning, execution and evaluation).

Assessment: A systematic method that provides efficient humanist care focused on achieving expected results, based on a scientific model developed by a nursing professional. It aims to provide individualized nursing care and to allow interaction with the subject of care in a holistic way, that is, in its biopsychosocial-cultural and spiritual dimensions. *Subjective:* Patient manifests that it presents difficulty to make stools, also refers pain to the mobilization of lower limbs, does not want to eat and refers to feeling weak. Objectives: Normocephalous, scalp well implanted normorreactive isochoric pupils, normoimplate atrial pavilion, moist oral mucosa, mobile neck, symmetrical, without adenomegaly. Symmetrical thorax, expandable, without circulation, rhythmic cardiac noises without murmurs, ventilated lungs, preserved vesicular murmur, without over-aggregates. Abdomen peristalsis (+), soft, depressive, no palpation pain, no masses, no megalias, no signs of peritoneal irritation. Eutrophic limbs, no edema. CNS with no apparent motor or sensory deficit, preserved muscle strength. Hemodynamically stable, afebril, hydrated, tolerating ambient and oral oxygen, vital signs within normal limits, currently complaining from constipation pain and pain in the knee, so it is made readjustment in the treatment.

History: Type I diabetes; Surgical: Not referring: Current: Type II diabetes mellitus, bipolar affective disorder and behavioral disorders; Secondary: information obtained by medical history

Diagnostic phase: After the evaluation of the patient and taking into account all the subjective and

objective data obtained through an interview, we can identify that there is a risk of unstable glycemia.

Tabla N° 1. Diagnósticos priorizados.

DIAGNOSIS	RELATED WITH
Risk of unstable blood sugar	● Bad eating habits ● Unstable blood sugar (high and low peaks) ● Poor knowledge ● Little family involvement, the family is not aware of the patient's needs
Provision for improved nutrition	● Patient says he wants to change his lifestyle for a healthier one ● Eating according to your body's needs because of your comorbidity of type II diabetes mellitus

Source: Authors' own creation

Planning phase of the project:

Table N° 2. Planning phase

NURSING DIAGNOSIS	INDICADOR	INTERVENTIONS	ACTIVITIES
Risk of unstable blood sugar	[300] Blood sugar level. [2111] Severity of hyperglycemia. [2113] Severity of hypoglycemia [1300] Acceptance: state of health. [1619] Self-control: diabetes.	● Management of hyperglycemia ● Management of hypoglycemia ● Teaching: prescribed diet	● Monitor blood sugar ● Look for signs and symptoms of hyperglycemia: polyuria, polydipsia, polyphagia, weakness, discomfort, lethargy, blurred vision, or headach ● Monitor the presence of ketonic bodies in the urine, as indicated. ● Check blood gas and electrolyte and beta-hydroxybutyrate levels, subject to availability. ● Monitor orthostatic blood pressure and pulse, if indicated. ● Administer insulin, as prescribed. ● Enhance oral intake of liquids. ● Monitor the water balance (including inputs and outputs), as appropriate. ● Identify the patient at risk of hypoglycemia. ● Identify signs and symptoms of hypoglycemia. ● Assess the patient's current level of knowledge about the prescribed diet. ● Evaluate the patient's current and previous feeding patterns, as well as the preferred foods and current eating habits. ● Determine the perspectives, cultural background, and other factors of the patient and family that may affect the patient's willingness to follow the prescribed diet.

NURSING DIAGNOSIS	INDICADOR	INTERVENTIONS	ACTIVITIES
Provision for improved nutrition	**[162101] Establishes achievable dietary objectives.** **[162102] Balances intake and calorie needs.** **[162104] Use recommended nutritional guidelines to plan meals.**	● **Health education** ● **Nutritional monitoring** ● **Nutritional advice**	● Identify internal and external factors that may improve or decrease the motivation to follow healthy behaviors. ● Determine the personal context and socio-cultural history of personal, family or community health behaviour. ● Obtain anthropometric measurements of body composition (e.g. body mass index, waist measurement, and measurement of skin folds). ● Identify recent body weight changes. ● Establish a therapeutic relationship based on trust and respect. ● Establish the duration of the counseling relationship. ● Determine the patient's intake and eating habits. ● To facilitate the identification of eating behaviors that are wanted to change. ● Establish realistic short- and long-term goals for changing nutritional status. ● Use accepted nutritional standards to help the patient assess the convenience of dietary intake.

Source: Authors' own creation

Implementation phase: Semi-structured interviews are conducted with both the patient and the family, explaining the case study they wanted to carry out, and an assessment and planning was made to identify the needs in which they should work, home visits were made to the different nursing interventions registered in the care plans, health education was carried out, educational talks on the self-care of diabetes mellitus type II and nutritional advice, establishing a balanced feeding plan according to your required energy needs. Apart from this, the theory of the systems proposed by Betty Neuman is applied, thus identifying the stressors of the environment that have contact with the individual and cause an imbalance of this or any potential risk associated with his pathology.

Table N° 3a. Nursing interventions

INTERVENTION LABEL	Nutritional counseling
DEFINITION	Use of an interactive support process focused on the need for dietary modification.
ACTIVITIES	
Determine the patient's intake and eating habits	
Promote the use of the internet to access useful information on diet, recipes and lifestyle modification, as appropriate.	

Establish the duration of the counseling relationship.	

Source: Authors' own creation

Tabla N° 3b. Intervenciones de enfermería

ETIQUETA DE INTERVENCIÓN	Fomentar la implicación familiar
DEFINICIÓN	Facilitar la participación de los miembros de la familia en el cuidado emocional y físico del paciente.
ACTIVIDADES	
Establecer una relación personal con el paciente y los miembros de la familia que estarán implicados en el cuidado.	
Anticipar e identificar las necesidades de la familia.	
Observar la estructura familiar y sus roles.	

Source: Authors' own creation

Evaluation phase / Results: When performing the activities proposed in the care plan, it was observed that the nursing interventions, in patient with risk of unstable blood sugar level, that the patient and his family recognized the importance of feeding to maintain a blood glucose level within normal values, both the patient and his family learned about the self-care of diabetes and the needs of the patient.

DISCUSSION

The case addresses two entities: type II diabetes mellitus and mental disorders, the latter a secondary element of the case under study. DM2 is pathophysiologically characterized by metabolic alterations such as hyperglycemia or chronic hypoglycemia caused by an alteration in insulin secretion and neurocognitive disorders or mental disorders have three categories: delirium, minor neurocognitive disorder (to refer to mild cognitive impairment such as behavioral disorders or bipolarity) and major neurocognitive disorder, (known as dementia). According to the epidemiological literature on neurocognitive disorders and Diabetes Mellitus, they have shown some characteristics common to both pathologies [20]. Thanks to various social, environmental, cultural and genetic factors such as age, sex, education, social support, polypharmacy, sedentary and average glycosylated hemoglobin.

Sex appears to be a protective factor for neurocognitive disorders. Hyperglycemia would be related to the factors mentioned above and glycosylated hemoglobin can be a determining test in the assessment of diabetic older adults with cognitive problems, for some individuals their medical diagnosis may represent at some point in their lives intense stress resulting from the psychosocial impact this generates, in addition to an exaggerated requirement to keep the weight

within a normal range extremely healthy lifestyle, As a result of the above, there are subjects who have a high probability of suffering from Behavioral Disorders, the scientific evidence reports a higher frequency of male patients (58.4%), the age group with the highest incidence is 71-80 years (46.4%) and a DM frequency of 16.86%. In the bivariate analysis, 30.67% of participants with neurocognitive disorder had a history of diabetes, with statistically significant differences [21].

A review of population studies on type 2 diabetes mellitus and mild mental disorders in different parts of the world showed that, from 1980 to 2014, the prevalence of diabetes and mental disorders, standardized by age, in adults, increased or At best, it remained unchanged.The study also reported that this condition increased more rapidly in low- and middle-income countries compared to high-income countries with (PR=1.47 - 95% CI 1.04; 2.05) of which 1,128 were women, 8.16% of them showed situations of economic and social vulnerability, such as poverty and insertion into the labour market and with a (95% CI 2.56; 13.74) diagnosed with neurocognitive disorder related to DM participants in ages 50 to 60 [22].

The prevalence of consumption of tobacco products in women with mental and behavioural disorders is high compared to the overall female population of the study and is directly related to the presence of clinical comorbidities in which 181 women were studied which 24,9% consumed hallucinogenic products in addition to tobacco, predominantly women between 40 and 49 years, race / brown color, education between one and eight years studied,income between one and less than two minimum wages, no work outside the home , without residence with partner and Catholic religion. Forty-nine women (27.1%) reported comorbidities, mainly systemic hypertension and diabetes mellitus, related to the use of tobacco products (P =.) and men by 30%, considering the Chilean population bipolar disorders have lower life expectancy compared to the general population. The causes of mortality are mainly due to suicide and natural events, among which cardiovascular events stand out. Patients with psychiatric disorder have high rates of diabetes mellitus, high blood pressure, obesity, and dyslipidemia [23].

Studies have shown that the average body mass index (BMI) in patients with bipolar disorder is 27.7 6.2 kg/m² 5, while in schizophrenia it would be 28.9 3.2 kg/m² and an average waist circumference (CC) of 100.8 (SD 9.2) cm6. The etiological factors include the genetic predisposition and underlying psychopathology in which diabetes mellitus could be attributed to the excess of drugs in addition to the increase in the atherogenic lipid profile and weight gain, by the same excessive use of these medicines [24].

CONCLUSIONS

This case study took into account subjective and objective data that allowed developing care plans under the taxonomies NANDA, NIC and NOC, which were focused on the needs of diabetes control, focusing on keeping blood glucose levels within normal traits. It was achieved to meet the proposed objectives, since receiving the different nursing interventions improved their risk process of unstable glycemia, strengthening self-care behaviors. The care provided to the patient had its disciplinary and scientific bases in the

model of Betty Neuman, which allowed after all the interventions that the patient internalizes the behaviors of care of his pathology.

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