



Accuracy of diagnosis of the defining characteristics of ineffective family therapeutic regimen management*

Acurácia das características definidoras do diagnóstico controle familiar ineficaz do regime terapêutico

Perfeccionamiento de las características definidoras del diagnóstico control familiar ineficaz del régimen terapéutico

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ABSTRACT

Objective: To investigate the accuracy of diagnosis, ineffective family therapeutic regimen management, based on the assessment of defining characteristics. **Methods:** Cross-sectional study with 68 diabetic patients seen in a family health center. Measures of sensitivity were calculated, specificity and predictive values of the defining characteristics were identified. **Results:** The diagnosis was present in 36.8% of these patients, and all defining characteristics showed statistical significance, except for “difficulty in following the prescribed regimen”. The characteristic “inappropriate family activities for meeting health goals” was the most sensitive, while “acceleration of illness symptoms of a family member” and “lack of attention to illness” were the most specific. **Conclusion:** The results call attention to the need to work with a family-focused adherence perspective, especially considering the complexity of treatment for individuals with diabetes.

Keywords: Nursing diagnosis; Therapeutics; Diabetes mellitus

RESUMO

Objetivo: Investigar a acurácia das características definidoras do diagnóstico Controle familiar ineficaz do regime terapêutico. **Métodos:** Estudo transversal, com 68 diabéticos atendidos em um Centro de Saúde da família. Foram calculadas as medidas de sensibilidade, especificidade e valores preditivos das características definidoras identificadas. **Resultados:** O diagnóstico esteve presente em 36,8% e todas as características apresentaram significância estatística, exceto “Dificuldade em seguir o regime prescrito”. A característica “Atividades familiares inadequadas para atingir o objetivo de um programa de tratamento ou prevenção” foi a mais sensível, enquanto “Aceleração dos sintomas da doença de um membro da família” e “Falta de atenção para a doença e suas seqüelas” foram as mais específicas. **Conclusão:** Os resultados chamam atenção para a necessidade de se trabalhar a adesão com uma perspectiva voltada à família, sobretudo considerando-se a complexidade do tratamento para o diabetes.

Descritores: Diagnóstico de enfermagem; Terapêutica; Diabetes mellitus

RESUMEN

Objetivo: Investigar el perfeccionamiento de las características definidoras del diagnóstico Control familiar ineficaz del régimen terapéutico. **Métodos:** Estudio transversal, realizado con 68 diabéticos atendidos en un Centro de Salud de la familia. Se calcularon las medidas de sensibilidad, especificidad y valores predictivos de las características definidoras identificadas. **Resultados:** El diagnóstico estuvo presente en el 36,8% y todas las características presentaron significancia estadística, excepto “Dificultad para seguir el régimen prescrito”. La característica “Actividades familiares inadecuadas para alcanzar el objetivo de un programa de tratamiento o prevención” fue la más sensible, en cuanto que “Aceleración de los síntomas de la enfermedad de un miembro de la familia” y “Falta de atención para la enfermedad y sus secuelas” fueron más específicas. **Conclusión:** Los resultados llaman la atención para la necesidad de trabajar la adhesión con una perspectiva volcada a la familia, sobre todo considerándose la complejidad del tratamiento para la diabetes.

Descriptores: Diagnóstico de enfermería; Terapéutica; Diabetes mellitus

* Study carried out in a Basic Care Unit for Family Health in the city of Fortaleza, (CE), Brazil.

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INTRODUCTION

Chronic-degenerative diseases, especially cardiovascular diseases, diabetes, cancer and respiratory disease are the main cause of mortality and disability worldwide⁽¹⁾. Because they last long, chronic conditions require changes in the lifestyle which include mainly the adoption of a healthy diet, and the regular practice of physical activities.

The adoption of new habits can be a difficult process for some patients, even though they recognize the importance of this change. Additionally, the therapy for type 2 Diabetes mellitus (DM2) is considered expensive, with an impact in families because of the cost of treatment, hindering the supply or purchase of the adequate number of materials and medications to be used every day⁽²⁾.

The long duration and the high complexity of the therapeutic regimen are factors that contribute to non-compliance⁽³⁾. Regarding the treatment of DM2, the importance of nursing to keep the treatment prescribed to patients stand out.

Nurses are in charge of developing actions for patients with chronic diseases even within the management functions in Basic Care Units⁽⁴⁾. The use of nursing diagnoses is extremely important in this process because it contributes to the quality of the care and to reduce costs in the health institution.

The North American Nursing Diagnosis Association (NANDA), defined the nursing diagnosis in 1990, as a clinical judgment of the responses of individuals, relatives or the community to vital processes or to current or potential health problems that supply the bases to select nursing interventions⁽⁵⁾.

The identification of diagnoses in the Domain: Health Promotion and in the Class: Health Management from NANDA is especially important in the care for diabetic patients because they supply subsidies for more specific interventions. Within this class, the diagnosis Ineffective Family Therapeutic Regimen Management, defined as a pattern of regulating and integrating into daily living a program for treatment of illness and the sequelae of illness that is unsatisfactory for meeting specific health goals⁽⁶⁾.

There are several factors related to Ineffective Family Therapeutic Regimen Management. It is believed that these factors are not isolated and that there is an interaction, making the level of compliance higher or lower. We must encourage, in the family core, an active participation in the care for diabetic patients, highlighting the need to support and follow-up patients.

With this regard, patients' noncompliance to the therapeutic regimen has been a major challenge to health professionals because, in the course of their lives, diabetic

patients should develop and perform actions for self care, such as: monitoring the glucose levels, medication control, identification of signs/symptoms of hyperglycemia or hypoglycemia and feet care, which causes changes in their lifestyle and in the physical and emotional state⁽⁷⁾.

Continuous failure in the control of the therapeutic regimen for DM2, could lead, in the long term, to the development of macrovascular complications (coronary artery disease, cerebrovascular disease, and peripheral vascular disease), microvascular complications (renal and eye disease) and neuropathic complications⁽⁸⁾.

So that a nursing diagnosis is correctly identified, adequate clinical indicators should be used as a basis. Thus, nurses should select defining characteristics that are sensitive and specific enough for the diagnosis conclusion. The correct identification of a nursing diagnosis is extremely important to guide interventions⁽⁹⁾.

Scientific articles about nursing diagnosis and their elements are scarce, if we take into account that they are part of a research line that is being developed. In the literature, we have not found a technology to assess the defining characteristics of the diagnosis Ineffective Family Therapeutic Regimen Management. The few studies related to this diagnosis in patients with DM2 diverge regarding the variables that interfere in treatment compliance.

The objectives of the present study were: to identify the accuracy of the defining characteristics of the referred diagnosis, and to assess the relationship between demographic and socioeconomic factors with the non compliance to the therapeutic regimen in people with DM2, focusing the participation of the family.

METHODS

Cross-sectional study with a quantitative approach carried out with DM2 patients followed-up in a Basic Care Unit for Family Health in the city of Fortaleza, Ceará, Brazil. This institution has a program for diabetic patients' healthcare and it offers primary health care with several approaches, including appointments carried out by nurses.

To calculate the sample size, we have used the formula for finite populations, starting from a population of 223 enrolled users. We have attributed a 90% confidence coefficient, a 10% sample error, and 50% event prevalence, because we could not define the amount of people with the studied diagnosis. There were 68 individuals in the sample, consecutively selected when they met the selection criteria. The only inclusion criterion was to have confirmed medical diagnosis of DM2. The exclusion criteria were the presence of neurological sequelae and/or disorientation.

Individuals agreed to take part in the study after being explained about its objectives and by signing the written Consent. The study has been approved by the Research Ethics Committee of the institution responsible for the research under protocol # 167/09.

Data was collected through an interview carried out in a private room in August and September 2009, using an instrument that has been developed based on NANDA⁽⁶⁾. After the interview, we inspected the feet of each participant to see if we could find signs that suggested diabetic foot.

The instrument included sociodemographic data, information regarding the relationship of interviewees and their families, issues concerning the role of the family in the treatment, and prevention of complications due to the disease. Other items approached in the interview were: compliance to a diet plan recommended by a health professional, the practice of physical exercises, the correct use of medications according to the orientation, feet care, and the presence of any symptoms that corresponded to DM2 complications.

Based on a model to validate the diagnosis content⁽¹⁰⁾, the results of the collection were assessed by the authors, following stages of the diagnostic thinking⁽¹¹⁾ to define the presence of the diagnosis of interest, as well as its defining characteristics.

For statistical analysis, we have used the program Predictive Analytics Software (PASW), version 18.0. Sociodemographic data and the answers referring to the defining characteristics of interest were the independent variables. The nursing diagnosis being studied was considered the outcome variable, based on the expert assessment.

Descriptive and inferential analysis were carried out, applying Chi-Square tests to verify the association between the variables and Fisher's test for expected frequencies lower than five (significance level established per $p < 0.05$). To check for normality, Kolmogorov-Smirnov test was used.

Last, sensibility and specificity measures, and positive

and negative predictive values of the defining characteristic of the diagnosis of interest were assessed to investigate the accuracy, and the 80% cut-off point was defined, above which, the outcomes obtained were considered as relevant.

RESULTS

Of the 68 participants of the study, 80.9% were females, 57.4% lived with their partners and other family members, and 51.5% were unemployed. The mean age was 57.26 years (± 13.793), mean schooling was 4.35 years (counted as of the 1st year of study) and the per capita income was 82.20 Brazilian reais.

There was no statistically significant correlation between the variables gender, marital status, and work situation with the presence of some defining characteristic, or the diagnosis being studied.

There was statistically significant difference between mean years of schooling of individuals with or without the defining characteristic "Difficulty in following the prescribed regimen" ($p = 0.059$). We have also observed that diabetic patients that presented the characteristics "Acceleration of the disease symptoms of a family member" ($p = 0.019$), "Lack of attention to the disease and its sequels" ($p = 0.019$) and "Difficulty in following the prescribed regimen" ($p = 0.079$) presented lower per capita income compared to those without these characteristics.

According to the data from Table 1, the most present defining characteristics, that is, those with a frequency higher than 50%, were "Desire to manage illness" (91.2%) and "Inappropriate family activities" (60.3%). The diagnosis Ineffective Family Therapeutic Regimen Management was present in 36.8% of the population studied.

For a deeper investigation, we assessed the association between the diagnosis of interest and each defining characteristic (Table 2).

Considering the level of statistical significance

Table 1 – Prevalence of the diagnosis Ineffective Family Therapeutic Regimen Management and its defining characteristics in patients with type 2 Diabetes mellitus. Fortaleza (CE), August/September 2009.

Defining characteristics	n	%
1. Desire to manage illness	62	91.2
2. Inappropriate family activities	41	60.3
3. Failure to take action to reduce risk factors	27	39.7
4. Difficulty in following the prescribed regimen	23	33.8
5. Acceleration of the disease symptoms of a family member	16	23.5
6. Lack of attention to the disease and its sequels	16	23.5
Ineffective family therapeutic regimen management		
Present	25	36.8
Absent	43	63.2
Total	68	100.0

Table 2 - Relationship between the diagnosis Ineffective Family Therapeutic Regimen Management and its defining characteristics in patients with type 2 Diabetes mellitus. Fortaleza (CE), August/September 2009.

Defining characteristics		Ineffective Family Therapeutic Regimen Management		P value
		Present	Absent	
1. Desire to manage illness	Present	21	41	0.018*
	Absent	4	2	
2. Inappropriate family activities	Present	24	17	<0.001†
	Absent	1	26	
3. Failure to take action to reduce risk factors	Present	20	7	<0.001†
	Absent	5	36	
4. Difficulty in following the prescribed regimen	Present	12	11	0.060†
	Absent	13	32	
5. Acceleration of the disease symptoms of a family member	Present	10	6	0.015†
	Absent	15	37	
6. Lack of attention to the disease and its sequels	Present	10	6	0.015†
	Absent	15	37	

*Fisher's exact test; †Chi-Square test.

Table 3 - Defining characteristics of the diagnosis Ineffective Family Therapeutic Regimen Management in type 2 Diabetes mellitus patients. Fortaleza (CE), August/September 2009.

Defining characteristics	S	E	PPV	NPV
1. Desire to manage illness	84.00	47.44	33.87	90.24
2. Inappropriate family activities	96.00	60.47	58.54	96.30
3. Failure to take action to reduce risk factors	80.00	78.79	74.07	83.87
4. Difficulty in following the prescribed regimen	75.00	74.42	52.17	88.89
5. Acceleration of the disease symptoms of a family member	40.00	85.71	62.50	70.59
6. Lack of attention to the disease and its sequels	40.00	85.71	62.50	70.59

Sensitivity (S), Specificity (E), Positive Predictive Value (PPV) and Negative Predictive Value (NPV)

($p < 0.05$), it was seen that all defining characteristics were related to the diagnosis studied, except for "Difficulty in following the prescribed regimen" ($p = 0.060$). To assess the accuracy of the defining characteristics of interest, main objective of the present study, we assessed the sensibility, the specificity, and the predictive values (Table 3).

The most sensitive defining characteristics presented by the population studied for Ineffective Family Therapeutic Regimen Management were "Inappropriate family activities" and "Desire to manage illness", with 96% and 84%, respectively. The most specific characteristics were "Acceleration of the disease symptoms of a family member" and "Lack of attention to the disease and its sequels", both with 85.71%.

Defining characteristics have not been identified with high positive predictive value. As for the negative predictive value, "Inappropriate family activities" and "Desire to manage illness" stood out, with 96.3% and 90.2%, respectively.

DISCUSSION

The identification of a nursing diagnosis is performed based on the defining characteristics raised. However,

some characteristics are present in more than one diagnosis and it is important to consider the definition of clinical indicators that make it easier for diagnostic inference. In the present study, we have identified the accuracy of the defining characteristics of the Diagnosis Ineffective Family Therapeutic Regimen Management in patients with DM2.

In the sample studied, female patients stood out, they lived with partner and were unemployed. Similarly, other studies have identified a greater prevalence of DM2 in women⁽¹²⁻¹³⁾. As for the sociodemographic data, many authors have considered that the financial conditions interfere directly in the control of the treatment⁽¹⁴⁻¹⁵⁾. Even so, a study carried out with diabetic patients did not find significant correlation between socioeconomic factors and the control of the therapeutic regimen⁽¹⁶⁾.

Researchers refer that the investigation has demonstrated that demographic variables are weak predictive factors of the therapeutic regimen control among diabetic patients⁽¹⁷⁾, corroborating the present study, in which practically only the financial issue was relevant.

As for the defining characteristics of the diagnosis being study, "Inappropriate family activities to achieve a program of treatment or prevention" stood out, it

was present in 60.8% of the sample. This characteristic was also more sensitive (96.00%) compared to the others, that is, it was present in the diagnosis.

Likewise, in a study with a similar population, authors have found a percentage higher than 50% of families in poor conditions to assimilate the teachings offered by health professionals regarding self-care activities⁽¹⁵⁾. A support network involving the family is essential in the Diabetes education process.

The defining characteristic "Failure to take action to reduce risk factors" was present in (39.7%) of the participants, indicating that many of these individuals do not incorporate actions to minimize risks of glucose oscillations. Likewise, another study showed a 29.2% of failure to follow a proper diet, and 58.3% failure to practice physical exercises regularly⁽¹⁵⁾.

Regarding the defining characteristics, "Acceleration of the disease symptoms of a family member" and "Lack of attention to the disease and its sequels", it was observed that both presented similar prevalence, that is, 23.5% of the patients assessed had some kind of complication due to Diabetes, such as vascular, neuropathic and visual diseases. These characteristics were more specific compared to others (87.71); they were absent in the absence of a diagnosis.

In a similar study, statistically significant differences have been found between the control of the therapeutic regimen and the presence of some kind of chronic complication of the Diabetes mellitus⁽¹⁸⁾. Chronic changes caused by Diabetes mellitus are more frequent among uncontrolled diabetic patients⁽¹⁹⁾.

In the present study the defining characteristic "Desire to manage illness" was present in 91.2% of the patients. Encouragement and will are strategies to improve compliance to treatment in diabetic patients with the acceptance of the disease, change in their lifestyle and family support⁽²⁰⁾.

The characteristic "Difficulty in following the prescribed regimen", was present in 37.9% of the diabetic patients. However, there was no statistic significance between its presence and the presence of a diagnosis. Another study identified a direct correlation between failures in compliance to the treatment regimen and low income⁽¹⁵⁾. Likewise, in the present study there was a correlation between the presence of that defining characteristic and low income, which reinforces the importance of adjusting the orientations to the preexisting habits, whenever possible.

Many patients reported they had no problems

following the therapeutic regimen; however, they presented a few characteristics that led to the diagnosis in study. This may have contributed for not having a significant correlation between this defining characteristic and the diagnosis of interest.

The finding of the present study can facilitate the work of nurses working in family health units where there is a great demand of patients with DM2. It is essential for nurses to be prepared to provide full care, geared not only to patients' biological needs, but also to their psychosocial needs, allowing them to overcome their limits, and to develop coping mechanisms⁽²¹⁾.

There are a few studies approaching the relationship between nursing diagnoses and their defining characteristics as predictors, and their production should be encouraged. People with chronic conditions such as diabetes are more prone to have problems with the treatment because of its complexity, and the family intervention is necessary in this process. Thus, nursing care plans geared to this type of diagnosis are relevant.

FINAL REMARKS

The study found a 36.8% prevalence of the diagnosis Ineffective Family Therapeutic Regimen Management in a sample of 68 patients with Diabetes. Among the defining characteristics assessed, the only one that did not present statistically significance was "Difficulty in following the prescribed regimen".

The most sensitive characteristic for the diagnosis was "Inappropriate family activities to achieve a program of treatment or prevention"; the most specific were "Acceleration of the disease symptoms of a family member" and "Lack of attention to the disease and its sequels".

These results show the need to work with compliance with a perspective geared to the family, especially considering the level of complexity of the treatment that is usually prescribed for DM2 and the socioeconomic and family conditions of the patients that resort to public services.

Acknowledging the conditions that do not favor therapeutic compliance can contribute to work early on the individual and collective needs within the family.

Longitudinal studies on the nursing diagnoses and their relation with the defining characteristics as predictive elements should be carried out, making it possible for data to be grouped with diagnoses being prepared more accurately.

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