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SOCIOCULTURAL FEATURES AND CHILDREN CLINICS WITH TYPE 1 DIABETES: SUBSIDIES TO NURSING CARE

CARACTERÍSTICAS SOCIOCULTURAIS E CLÍNICAS DE CRIANÇAS COM DIABETES TIPO 1: SUBSÍDIOS AO CUIDADO DE ENFERMAGEM

CARACTERÍSTICAS SOCIO-CULTURALES Y CLÍNICAS DE NIÑOS CON DIABETES TIPO 1: SUBSIDIOS AL CUIDADO DE ENFERMERÍA

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ABSTRACT

Objective: to describe the sociodemographic, clinical features and nursing care provided for children with type 1 diabetes mellitus. ***Method***: a descriptive study with a quantitative approach performed in a secondary service located in Fortaleza-CE with 93 children aged from two to 12 years. We used a semistructured form for the production of data; the findings were statistically analyzed. ***Results:*** most lived in the State and lived with their parents; presented adequate weight (67.7%), fasting hyperglycemia (68.8%), used NPH and regular insulin (52.7%), the main complication was convulsion (14%). The nursing guidelines prioritized glucose monitoring, insulin therapy, foot care, injury prevention in the skin and the recognition of signs of abnormal glucose levels. Conclusion: Even with childcare, the children had diabetes complications, thus; it is necessary a follow-up with a continuous education of the family. ***Descriptors***: Nursing; Type 1 Diabetes Mellitus; Child Care.

RESUMO

Objetivo: descrever as características sociodemográficas, clínicas e os cuidados de enfermagem a crianças com diabetes mellitus tipo 1. ***Método***: estudo descritivo, com abordagem quantitativa, realizado em serviço secundário localizado em Fortaleza-CE, com 93 crianças de dois a 12 anos. Utilizou-se um formulário semiestruturado para a produção dos dados, os achados foram analisados estatisticamente. ***Resultados***: a maior parte residia no interior do estado e morava com os pais; apresentou peso adequado (67,7%), hiperglicemia em jejum (68,8%), utilizava insulina NPH e regular (52,7%), a principal complicação foi a convulsão (14%). As orientações de enfermagem priorizaram o monitoramento glicêmico, insulinoterapia, cuidados com os pés, prevenção de lesões na pele e reconhecimento das alterações glicêmicas. ***Conclusão***: mesmo com acompanhamento especializado, as crianças apresentaram complicações do diabetes, assim, faz-se necessário um segmento com educação contínua da família. ***Descritores***: Enfermagem; Diabetes Mellitus Tipo 1; Cuidado da Criança.

RESUMEN

Objetivo: describir las características sociodemográficas, clínicas y los cuidados de enfermería con los niños con diabetes mellitus tipo 1. ***Método***: estudio descriptivo, com enfoque cuantitativo, realizado en servicio secundario localizado en Fortaleza-CE, con 93 niños de dos a 12 años. Se utilizó un formulario semi-estructurado para la producción de los dats, los hallados fueron analizados estadísticamente. ***Resultados***: la mayor parte residía en el interior del estado y vivía con los padres; presentó peso adecuado (67,7%), hiperglucemia en ayunas (68,8%), utilizaba insulina NPH y regular (52,7%), la principal complicación fue la convulsión (14%). Las orientaciones de enfermería priorizaron el monitoreo de glicemia, insulinoterapia, cuidados con los pies, prevención de lesiones en la piel y reconocimiento de las alteraciones de glicemia. ***Conclusión***: mismo con acompañamiento especializado, los niños presentaron complicaciones de diabetes, así, fue necesario un segmento con educación continuo de la familia. ***Descriptores***: Enfermería; Diabetes Mellitus Tipo 1; Cuidado al Niño.

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INTRODUCTION

Type 1 diabetes is a chronic condition defined by a progressive failure of the insulin production caused by a partial or total destruction of ß cells of the pancreatic islets of Langerhans. This process may take months or years, and there are a number of factors that can contribute to the immune activation that stimulates the destructive process of these islets.[1]

DM1 is increasing worldwide. The type 1 diabetes prevalence in Brazil ranges approximately from 5 to 10% and the incidence is approximately of 7.6 per 100,000 inhabitants under 15 years old. It is estimated that there will be 300 million people with diabetes worldwide in 2030. In Brazil, children with DM1 rates are high and there are few studies concerning this subject.[1,2]

Of great importance is the outpatient treatment, with the monitoring of glucose levels for the gradual control of diabetes, as well as being alert to any early symptoms, which invariably include associated eating disorders. The main obstacle to prevent the possible acute and chronic complications is the inadequate control of the glucose levels, which may cause other diseases, such as psychiatric ilnesses.[3]

Treatment adherence predisposes the diseased individuals and their families to changes in the lives, mainly because they are children with a resistance to changes in their lifestyle, which includes the need for physical exercise, eating habits and painful procedures such as measuring daily blood glucose levels and the continuous insulin applications. These behaviors are considered essential interventions for preventing acute and chronic complications. The patients with type 1 diabetes need a regular support from the health professionals, so these must be acquainted with the disease and its management and develop a practice of care that includes the family.[4]

In this sense, the nursing care includes educational practice for these people and it should be used strategies that facilitate the understanding and learning on the part of the children and their families about the treatment, thus highlighting as a priority the glycemic control and the therapeutic procedure [5]. Health education aims at self-care by encouraging changes in habits, improving the quality of life, especially when it comes to people with chronic illnesses; this thus make it possible for the individuals a greater degree of autonomy and a better adherence to the therapeutic procedures.[6]

In this perspective, nurses should play an active role within the health system by gaining space as an autonomous profession, encouraging users/informal caregivers to reflect critically on their own health condition as well as that of his family and his community, therefore corroborating the theoretical framework that sustains the country health system. [7]

It is important that the health professionals know the characteristics of the population they care for, as well as their reactions and clinical responses to the treatment. This can aid in planning interventions based in their needs by providing individualized care in order to prevent possible complications of the disease and, in the case of the children, to promote a healthy growth and development while living with DM1.

The performing of this research started with the questions: What are the sociocultural and the clinical characteristics of the children with DM1 that are assisted in a specialized service? What is the nursing care provided for children with diabetes in an outpatient basis? To conduct this survey, the following purposes were aimed at:

- To describe the sociodemographic features and the clinical and nursing care characteristics of the children with diabetes mellitus type 1.

METHOD

A study by the Health Research Group for Children and Adolescents, which came from the research project << Juvenile diabetes and therapeutic educational technology: support for clinical nursing care >>.

A descriptive and exploratory study with a quantitative approach performed in the Integrated Center for Diabetes and Hypertension (ICDH), a reference secondary service of the Unified Health System located in Fortaleza, Brazil. The population was composed of 256 children with DM1 and a sample of 93, according to the selection criteria: children up to twelve years old who were followed in the study site and diagnosed up to six months ago, whose medical record was available during the study period.

The children were excluded if they had any clinical complications such as hypoglycemia or hyperglycemia symptoms, which could compromise the filling of the form during the interview.

The instrument for gathering data (form) included sociodemographic information, the clinical aspects of the child as well as the nursing care. These data were investigated with the help of the family member that accompanied the child to the diabetes clinic in a period ranging from August 2013 to July 2014. It is noteworthy that, before this step, the medical records were analyzed and did not have the information needed for the research.

The data were entered and processed by the software *Statistical Package for Social Science*s (SPSS) version 20.0. The significance level of 95% and the sampling error of 4% were considered as parameters. It was added to this amount 15% for possible losses and missing. It was used descriptive statistics whose data were presented in absolute frequencies and percentages, and in average values ± standard deviation. Some qualitative information were coded and grouped by similarities to be processed in the said program. The data generated and presented statistically were analyzed in the light of the reviewed literature.

The study met the necessary requirements and guidelines of the Resolution 466 of December 12, 2012, which explains the guidelines and the regulatory standards for researches that involve human beings.8 The project was approved by the Research Ethics Committee of the institute that promoted the research, Opinion No. 181.489 from the State University of Ceará. All security procedures of the research subjects such as risks, benefits, autonomy and anonymity were held considering the bioethics principles highlighted in that resolution.

RESULTS

As regard of the children who participated in the study, 40 were male (43%) and 53 female (57%), aged between two and twelve years, and the most prevalent age group was that of seven years old (n = 2.64); 32 were in preschool (34.4%) and 61 in school age (65.6%). Regarding their origin, most of them reside in the state interior (47.3%), followed by those who lived in the capital (40.2%), in the metropolitan area (9.7%) and in other states (2.2%). It was found that they lived with five or more people in the same household (33.3%); they had their own house (79.6%) and lived with their parents (83.9%), followed by those who lived with one parent (10.8%).

With regard to the children's lifestyle and leisure, it was highlighted the practice of physical activity (31.2%), which included cycling (19.4%) and playing soccer (11.8%). Regarding their participation in social groups, the school is the main social environment (96.8); however, some children attend others, such as a church (56%), besides making regular visits to other relatives home (7.5%).

Regarding the clinical findings, it was collected information about the BMI class, the glycemic rating fasting classification, the types of insulin that were used in the pharmacological treatment, the insulin administration modes, the signs and the symptoms that were present when the disease was first discovered, the complications and the comorbidities involved. And yet, the complaints reported by the parents and the children about the disease and the treatment, the child care by relatives involved in the glycemic control and the main orientations received during the nursing consultation.

In the table 1, the variables studied concerning the BMI class showed that most of these children have the appropriate weight for their age (67.7%), with overweight (17.2%) and obesity (14%). The insulins used mostly are of the intermediary action (NPH) and of fast action, which are called regular (52.7%), followed by long and ultra-fast action (38.7%). The types of insulin have been grouped this way because they are the therapeutic regimen used in the service. The application of insulin, in most cases, is made by the mother (46.2%) and by the children themselves (12.9%). It was observed the prevalence of hyperglycemia (68.8%) and hypoglycemia (6.5%), whereas children with normoglycemia during the collection period were only 24.7%.

The table 2 shows the signs and the symptoms more often presented by the children with DM1, such as weight loss, polyuria, polydipsia and vertigo, that began to manifest by the time the disease was first dicovered (40.9%). Among the complications during the course of the disease, the main one reported was seizure (14%), followed by glycemic decompensation (7.5%); most of them had not comorbidity involved in the course of the disease, but those who had it achieved a percentage equal in all of them, that is, (2.2%); these were: the development of panic related to the administration of insulin, hair loss, neurologic consequences (attention deficit, aggression) and fistula gum.

Among the main difficulties faced by the parents and the children in the treatment of DM1, the most obvious was the loss of glycemic control (37.6%), followed by the dietary restrictions with 11.8%. As related to the main daily care of children with diabetes, the participants emphasized the strict compliance with dietetic food (84.8%), insulin delivery (49.4%), insulin monitoring, rotation, packaging (16.1%), physical activity (16.1%), among others.

On the guidelines received in the consultation with the nurse, as reported by the family members, the most often mentioned were about the glucose monitoring and the insulin therapy, recommendations of changes in lifestyle and foot care and wound in the skin, as well as clarifications of signs of hypoglycemia and of hyperglycemia.

DISCUSSION

The research exposed the diabetes rate in the group of 93 participants ranging from two to 12 years of age, and most were male, between six and seven years old. The Brazilian Diabetes Society shows that the incidence studies are usually restricted to DM1, because its clinical manifestations tend to have striking features in the diagnosis. Currently, the incidence of type 1 diabetes is increasing, particularly in children under five years old. [1]

The physical activity in the child's routine was commented as a part of the therapeutic process, indicating that it is a practice that can be included, and helps both in the glycemic control and in the social interaction of the child. It is emphasized in the literature that physical activity is an important element in the daily life that makes social integration easier and brings benefits to the child with DM1. For its effectiveness, it should therefore be evaluated the type, the length and the intensity of the exercise, which should be directed properly by the physical evaluator, providing patients with improvement in the hypoglycemia rates, comfort, and encouraging their adherence to the treatment. [9]

It was observed that only six children reported not doing physical activity, however, many considered physical activity as a recreation, sometimes integrated into social groups. There were no references to discrimination and limitations that might take the child to social isolation. Thus, it was realized the importance of the school and other social support networks for the welfare of these subjects.

The social network has become an ally in the recovery, in the fighting and in the stabilization of the clinical signs of diabetes since the discovery of the disease, being an essential part for the establishment of relations in the focus of care, strengthening ties among the participants and contributing to a greater acceptance of the new reality experienced.[10]

The study showed that the attention given to the diet was an aspect well regarded in the control of the disease because it was cited by 91.3% of the children and their guardians. Other information is that the main participant responsible for the child was the mother, being therefore directly responsible for the insulin therapy treatment because, in 66.6% of the children who took part in the stydy, insulin injection was administered by the progenitor.

Several studies have shown that, among the changes in the daily lives of the children with DM1, feeding seems to be the one that requires more attention, considering the need for a balanced diet that favors the growth of the child and, at the same time, the appropriate composition of carbohydrates, which imposes certain restrictions. It is observed that, often, children experience food-related conflicts, in view of the changes in the food menu and in their daily life, seeking self-control and self-care and being therefore in a constant surveillance.[11]

The change in the lifestyle directly affects the moment lived in the discovery of the disease, centered in this responsibility the primary caregiver. This can overload the family and cause reactions such as the difficulty in accepting diabetes. Thus, it is needed to share responsibilities in the child care and to reduce the burden over the caregiver.[10] It is known that most children do not have the age and the maturity to take on the responsibility of caring for themselves, but it is important to prepare them early to understand and to participate in the treatment and to take on responsibility, even in the insulin self-administration under the supervision of the caregivers.

Hence the importance of the patient with diabetes primarily to be treated at the clinic through regular consultations by evaluating continuously the care of the disease, keeping the glucose levels controlled and monitoring the risk factors for developing complications.[12]

In the clinical profile, the children had, in most cases, the proper weight (67.7%) and high levels of glucose in fasting (hyperglycemia), on the day of the data collection. Faced with this information, this data can be related to an inadequacy deriving from their eating habits, especially at night.

Another study of DM1 showed a counterpoint to the findings, and thus the patients had not a proper feeding and physical activity, being more vulnerable to possible clinical complications associated with being overweight and may have macrovascular consequences such as coronary arterial disease.[13]

The type of insulin most used by the study group was NPH and regular insulin; besides these some used analogues. The parents reported that they changed the types of insulin regularly and preferred analogues to obtain a greater glycemic control. But sometimes the institution lacked the analogues and they could not afford buying them. So they use NPH and Regular insulin again. Therefore, sometimes they concurrently used these three types of insulin despite the fact that the analog gets a better response as reported by the caregivers.

The classic treatment is characterized by the use of two doses of NPH (Neutral Protamine Hagedorn) before breakfast and another dose before dinner, and three regular insulin doses before the three main meals of the day. With ultra-fast-acting insulin analogues there are some advantages when it is replaced by regular insulin, such as avoiding severe and nocturnal hypoglycemic events. Ultra-fast-acting analogues may be administered shortly after a meal, being as effective as the regular ones, which is delivered before meal.[2]

The research results showed the main symptoms when the disease was discovered: polydipsia, polyuria and weight loss, which was in agreement with another study. [2] These are considered early manifestations of the disease, when the treatment was not yet started. It is noteworthy that the metabolic disorder can cause other complications, as pointed out by the subjects, such as seizure, glycemic decompensation and even coma. Regarding comorbidities, this population had few cases. Those who had them experienced panic caused by the application of insulin, alopecia, precocious puberty, neurological consequences and fistula gum.

During the development of the disease, there are periods of variable extent of hyperglycemia; events of nocturnal enuresis and sporadic polyuria may happen, which may progress to ketoacidosis. Precocious puberty, i.e., change in the development was also shown.[2] Also, when the child grows, there is a physiological increase in the insulin resistance. In this step, adjustments in the insulin dose and increased vigilance are needed to achieve the expected metabolic control.

In the research, it was tried to capture information about the guidelines that these subjects (children and family members) received from nurses during the consultation. The need for change in the lifestyle was emphasized, such as physical activity, proper nutrition and hydration. These subjects highlighted also the monitoring of the blood glucose using the glycemic map, and the care with insulin therapy, from storage, handling and application sites to the disposal of the material. They also mentioned the care of the feet and the explanation about the signs and the symptoms of hyper- and hypoglycemia.

It is essential that the diabetic patient sets a partnership with the health professional, with the purpose of educating them, aiming to promote self-care. The educational practice becomes a way to raise awareness, help the person in the process of living with diabetes and develop self-care, aiming at a progression of disease without major complications. It consists of a time when the patient and the health professional share information and discuss the treatment.[14,15]

It is necessary a follow-up with continuous education of the child and the family, thus helping them with their doubts and difficulties in the treatment as well as with the adjustments to the new reality experienced with the disease, contributing to the well-being of all involved.

CONCLUSION

The study met the outlined goal allowing for the description of the reality from the disease onset to the process of caring for children with type 1 diabetes, both through their sociocultural and clinical characteristics as well as by analyzing the main nursing instructions received in the nursing consultation. Thus it is possible that health professionals, especially the nurse, before the descriptions that were raised, keep an effective communication and provide safe care that addresses the main difficulties in managing the disease.

The results showed that the practice of physical activity and the ties with some social group favor the integration of the diabetic children and their coping with their difficulties. The reports have confirmed that an inappropriate follow-up of the treatment led to the complications described in the literature.

The study had some limitations: the location of data collection (a lot of noise, parallel conversations among caregivers and the children themselves); the brevity of both medical and nursing consultations, as well as the coincidence of them on the same day; the lack of laboratory tests to characterize the child, due to their absence or failure to remember by their guardians or the lack of collection, thus resulting in an incomplete information in the medical records.

It was noted that, since the main guidelines were given by the nurses and there were many calls for a limited number of professional health, education was often committed, not meeting the pressing needs of the child and of the family caregiver. However, it is known that it is imperative to give the child and their families an education opportunity by the multidisciplinary team to assist in the effectiveness of the treatment and improve the quality of life of these subjects.

It was noticed among the children and their family that they lack psychological counseling in coping with adverse situations: some parents struggling to control the child's feeding, the child's rejection in insulin delivery and checking the blood glucose level, because it is a painful process. Health education with interdisciplinary actions aimed at families and children brings moments of exchange and sharing of experiences that can help as sources of support and to foster a greater adherence to the therapy.

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