KNOWLEDGE OF PATIENTS WITH DIABETES MELLITUS ABOUT LESIONS ON THE LIMBS

CONOCIMIENTO DE LOS PACIENTES CON DIABETES MELLITUS EN LESIONES EN LAS EXTREMIDADES

Tereza Carmen Oliveira Nascimento¹, Teresa Cristina Rosa Romero Navarine², Brigida Karla Fonseca Anízio³, Bianca Fonseca Anízio⁴, Marta Miriam Lopes Costa⁵, Iolanda Beserra da Costa Santos⁶

ABSTRACT

Objective: to investigate the knowledge of patients with diabetes mellitus on developed lesions in the lower extremities. Method: an exploratory descriptive study with a quantitative approach involving 20 patients between July and September 2011, using a semi-structured form. For analysis, data were evaluated according to statistical procedures, tabulated with absolute numbers and percentages. The research project was approved by the Research Ethics Committee, under protocol 0167.07126.000-11. Results: 60% of patients stated they prevent lesions in their lower limbs, 50% had the understanding that the diabetic foot is one of the complications of diabetes mellitus. Conclusion: the majority of respondents had knowledge about developed lesions in their lower extremities and practice prevention. Descriptors: Injuries; Bearer; Diabetes Mellitus.

RESUMO

Objetivo: investigar o conhecimento de pacientes com diabetes mellitus sobre lesões desenvolvidas em extremidades inferiores. M étodo: estudo exploratório-descritivo com abordagem quantitativa, realizado com 20 pacientes entre julho e setembro de 2011, por meio de um formulário semiestruturado. Para análise, os dados foram avaliados conforme procedimento estatístico, dispostos em tabelas, com números absolutos e percentuais. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, protocolo 0167.07126.000-11. Resultados: 60% dos pacientes afirmaram fazer prevenção contra lesões em MMII, 50% tinham o entendimento de que o pé diabético constitui uma das complicações do diabetes mellitus. Conclusão: a maioria dos pesquisados tinham conhecimento sobre lesões desenvolvidas em extremidades inferiores e fazem a prevenção. Descritores: Lesões; Portador; Diabetes Mellitus.

RESUMEN

Objetivo: investigar el conocimiento de los pacientes con diabetes mellitus acerca de lesiones desarrollados en las extremidades inferiores. Método: estudio descriptivo exploratorio con abordaje cuantitativo, realizado en 20 pacientes, entre julio y septiembre de 2011, mediante un formulario semi-estructurado. Para el análisis, los datos fueron evaluados de acuerdo a los procedimientos estadísticos, tabulados con números absolutos y porcentajes. El proyecto de investigación fue aprobado por el Comité de Ética de la Investigación, el protocolo 0167.07126.000-11. Resultados: 60% de los pacientes afirmó que prevenir lesiones en las extremidades inferiores, 50% tenía el entendimiento de que el pie diabético constituye una de las complicaciones de diabetes mellitus. Conclusión: la mayoría de los encuestados eran conscientes acerca de desarrollaron lesiones en las extremidades inferiores y realizaron la prevención. Descriptores: Lesiones; Portador; Diabetes Mellitus.
INTRODUCTION

Diabetes mellitus (DM) is considered one of the major chronic diseases nowadays, because of its numerous worldwide incidences and complications related to this disease, is also known for increasing the survival of the bearer of the disease and because of the advancement of the general approach of the individual affected by it.\(^1\)

Regarding the conceptual approach of DM, it is considered as a group of metabolic diseases characterized by hyperglycemia and associated complications, dysfunctions and weaknesses of several organs. It can result from defects in the secretion and/or insulin action involving specific pathogenic processes, as an example, destruction of pancreatic beta cells, resistance to insulin secretion disorders, among others.\(^2\)

People with diabetes who do not control their glucose properly can present problems regarding the changes in sensitivity of the extremities, especially the feet, it configures as a public health problem in the country due to the frequency with which it occurs and the high cost of this treatment.\(^3\)

Associated DM and hypertension in Brazil are the leading cause of death and hospitalization rates, this is due to amputation of the lower limbs and represents 62.1% of primary diagnosis in patients with chronic renal failure undergoing dialysis.\(^4\) The complications most common in DM are diabetic neuropathies, comprising a set of clinical syndromes that affect the peripheral nervous sensory, motor and autonomic systems.\(^5\)

Diabetic ulcers are caused by peripheral neuropathy and vascular disease superficial from the natural evolution of hyperglycemia caused by diabetes. As the neuropathy leads to reduction of pain and sensitivity in the feet, and subsequent to this deformity, induces the patient to ignore pain and even presence of wounds at the places mentioned above, making them vulnerable to minor traumas. In such cases, when a diabetic patient has any type of injury, the infection can be established as a risk factor, encouraging the destruction of the tissues of the lower limbs, this condition occurs in a matter of hours or days.\(^5,6\)

The prevention and treatment should be based on a rigorous program of continuing education for the bearer of the disease and their caregiver, with the purpose of preventing the appearance of the lesions, recurrences or new implications, and should be informed about the use of appropriate shoes in order to reduce the pressure exerted by the weight of the body, revascularization, treatment of hypertension, dyslipidemia and smoking control, if there is maintenance of appropriate blood glucose levels, this can control it.\(^7\)

There is a lack of proposals in healthcare services with respect to the prevention and chronic DM complications; there is a need to develop permanent education in this group, grounded in solid reality of the involved individuals, reflecting the high statistical indices of complications and lower limb amputations, greatly influencing the quality of life of patients with DM.\(^2\)

From a practical experience in the professional at the University Hospital Lauro Wanderley / UFPB where the care of patients with vascular lesions in clinical surgery is performed, the curiosity to deepen this theme by the amount of inmates who have lower limb lesions arose taking a prolonged hospitalization and overspending due to long hospitalization.

OBJECTIVE

- To investigate the knowledge of diabetic patients in developed lesions on the lower limbs.

LITERATURE REVIEW

\(\text{Contextualization of Diabetes Mellitus}\)

Diabetes mellitus (DM) is a group of metabolic diseases characterized by high levels of glucose in the bloodstream, which arise in the body and the defect in the secretion or action of insulin.\(^6,7\) DM is a syndrome of multiple etiologies and is characterized by chronic hyperglycemia, with disorders in the metabolism of carbohydrates, lipids and proteins.\(^8\)

DM presents two most frequent types: type 1 and type 2, these differ in characteristics, treatment and age group. In type 1 DM, happens destruction of pancreatic beta cells routinely by auto immune or rarely by unknown cause (idiopathic).\(^9\) While the type 2, it is more often the case that the type 1, characterized by disturbances in action and secretion of insulin, patients with type 2 usually in their majority are obese.

The types of diabetes mellitus differ in percentage and age, diabetes mellitus type 1 is a chronic disease that can affect various ages, being diagnosed most often in children, adolescents and young adults.\(^10\) Some authors estimate a percentage ranging from 5 to 10% of the diabetes cases. The type 2 represents...
90 to 95% of cases of the disease, affecting individuals at any age, but most commonly diagnosed after 40 years of life.

In type 1 DM are destroyed pancreatic cells consequently there is no production of insulin, making the use of this hormone essential as a continuous medication. However, the type 2 is the reduction in insulin production, generating an increase of glucose in the blood causing hyperglycemia being imperative use of oral medication with hypoglycemic effect, or even insulin when necessary.12

Usually the bearer of type 2 diabetes reported that their symptoms were vague and developed only a few. Unlike type 1 they report that their symptoms developed rapidly.13 Regardless of the type of diabetes, the individuals have symptoms related to hyperglycemia, type: polyphagia (increased appetite), polydipsia (increased thirst), polyuria (increased urination), among other symptoms that include fatigue easy and weakness, visual changes sudden, tingling or numbness in the hands and feet, dry skin and resected, skin lesions or wounds on the body with slow healing, in addition to recurrent infections.7

The polyuria and polydipsia occur because of the loss of excessive liquids associated with osmotic diuresis, regarding the polyphagia, is the result of the catabolic state induced by the lack of insulin and cleavage of proteins and lipids.7 The confirmation of the diagnosis of DM in adults with the exception of pregnant women presents the following results in laboratory tests: serum levels of glucose equal to or greater than 126 mg/dl, this being repeated more than once; blood levels of glucose equal to or greater than 200 mg/dl, 2h after meal and finally characteristic symptoms of diabetes and a determination of blood glucose level equal to or greater than 200 mg/dl. The individual must have at least two of these conditions, which were related.9

The basic treatment and control of both types consist primarily of a specific diet, regular exercise and appropriate use of medications (oral hypoglycemic agents and/or insulin).13 Insulin therapy in type 2 DM1 has the objective of preventing diabetic ketoacidosis, already in type 2 this practice seeks to achieve control of the glycemic condition.4

Treatment of type 2 DM as a rule aims to maintain adequate glycemic control through hypocaloric diet, increased physical exercise or medication use.14 As in type 2 diabetes the primary goal of treatment of type 1 is also glycemic control, making it essential for the patient information related to glucose monitoring and insulin regimen scheme, which contribute to optimal diabetes control.15

DM has 2 types of complications: acute and chronic. The acute effects are composed of hyperglycemia, hypoglycemia and diabetic cetosis.15 Hyperglycemia is proven with the result of capillary glucose greater than 140mg/dl and the antihyperglycemic agent Syndrome hyperosmolar (NKHHS) the more severe form of hyperglycemia, is a condition in which the blood glucose level is above 600 mg/dl.16 The precipitating factor in the majority of cases it is a concomitant disease and as predisposing factors are advanced age, level of dependence among others.

Silent hypoglycemia is a complication in which the blood glucose level is too low, is considered hypoglycemia glucose levels below 70 mg/dl.17 Its highest incidence occurs in patients with type 1 DM and predominant in the evening, and may also affect elderly patients and patients with type 2. Its most common symptoms are excessive sweating, disorientation in more serious cases, asthenia among others.

Diabetic ketoacidosis (DKA) is a serious complication of diabetes, leading to large numbers of mortality. More frequent in young type 1 diabetics, being possible, also occurring in type 2. It concomitantly arises from a decompensated diabetes due to to impaired insulin or any stress situation.16

The complications come from lack of knowledge and clarification of patients, because the most common chronic complications are cardiovascular and peripheral vascular disease, retinopathy, nephropathy, diabetic dermopathy and diabetic neuropathy (peripheral and autonomous).9 These complications can be minimized due to a better control of their risk factors.18

Peripheral vasculopathy is a type of complication that implies the poor circulation of the lower limbs, contributing to a poor healing of wounds that install in this place and to the development of gangrene.7

Dermopathy diabetic dermatopathy is found in almost 40% of the people who have this disease. Also known as spots on the leg or lesions, these lesions are asymptomatic, but if they cause ulcerations, they can be painful. The only prevention is to keep the skin free of trauma, clean and hydrated.19
Diabetic Neuropathy the main complication associated with research, becomes the most common complication of diabetes, comprising a set of clinical syndromes that affect the peripheral nervous system sensory, motor and autonomic, isolated or diffuse, in the proximal or distal segments of acute or chronic installation, reversible or irreversible, manifesting silently or with dramatic symptomatic cases.4

The most common form is symmetric neuropathy sensory-motor distal. It can manifest as burning sensation, shocks, needles, tingling, pain, non-painful stimuli, cramps, weakness or change in perception of temperature, can be at rest with evening exacerbations and improves with movement.4

The prevalence of diabetic neuropathies rises in accordance with the age and duration of the disease, and may be so high that develops in 50% of patients who already have the disease for more than 25 years. The etiology of neuropathy applies to increased blood glucose levels over a period of years and the pathogenesis mechanism implicated vascular and / or metabolism. Two of the most trivial of diabetic neuropathies are the sensorial neuropathy, known as peripheral and autonomic neuropathy.7

The peripheral neuropathy is pointed out as crucial risk factor for amputation of lower limbs, is present in some degree in 50% of diabetic patients over 60 years of age.20 The symptoms of peripheral neuropathy include: paresthesia (needle and tingling sensation) and burning sensations (especially at night). In accordance with the progress of the neuropathy comes to numbness in feet. In addition, there is feeling decreased including pain and body temperature, which lead the diabetics to a high risk of injury and infections unnoticed on the foot. For patients who do not exhibit symptoms physical findings, may be the only way to identify changes, namely: decreased deep tendon reflexes and vibrating sensation.7

People with DM, especially involving higher risk for vascular complications, should distinguish the risk factors for the formation of ulcers.20 The lack of information on the care of the feet, the presence of abnormal pressure favoring calluses, deformities, peripheral vascular disease and dermatoses are contributing factors to the occurrence of ulcers on the feet. Patients with previous ulcers and amputations are considered high risk for developing new ulcers and deserve attention on their feet.21

Bearing in mind that the best treatment for the diabetic foot is its prevention, includes as educational guidelines for foot care the following variables: examination of the feet daily and when necessary ask for help a friend or use the mirror; warn the doctor about the presence of calluses, cracks, changes the color of the skin and sores; shim always socks clean preferably with natural yarn and without elastic; select the shoes as its softness that do not fasten their feet, soft leather or fabric and never use them without socks; never walk barefoot; attention with new shoes, make tests at home before the actual usage; washing of the feet the care with the coolant temperature and when it is dry, special attention to spaces between the toes, do not remove calluses and ingrown toenails at home and cutting the nails horizontally.4

The foot complications associated with DM comprise, today, a great problem faced throughout the world.21 diabetic foot develops in the chronic phase of the disease and amputation of the lower limbs are consequences of gangrene and/or auster infections, the condition evolves in silence requiring patient knowledge to avoid this injury.8-21

The diabetic foot becomes a target organ for high risk due to the interaction of vascular disease, infection and in particular of peripheral neuropathy. At some point in their lives, 15 per cent of diabetic individuals will develop ulceration on the feet, thus have the possibility of amputation of the lower limbs.23

Approximately 50% of nontraumatic lower limb amputations are performed in patients with diabetes, and 85% of them are preceded by ulcers, characterized by skin lesions on the feet.2-5 The prevalence of ulcers on the feet affects 4% to 10% of the diabetics and probably the incidence of amputations related to DM reaches 5-24/100,000 inhabitants/year or 6-8/1000 diabetic patients/year.22

The development of a foot ulcer of a diabetic is initiated by a small lesion in the soft tissues of the foot, the formation of cracks between the toes or in an area of dry skin, or formation of callosity. These lesions due to loss of sensitivity of the individual can be thermal, chemical or traumatic. When the patient does not have habit to inspect their feet daily, injury or fissure may go unnoticed until a serious infection has installed.7

The nursing professional occupies an important place among the patients with diabetes, making them aware about the disease, they should have a change of habit of life and follow the treatment under guidance of an interdisciplinary team of health, because only in this way will make it possible
to reduce the complications that involve the disease, the nurse plays a direct and positive results expected during the treatment to this clientele.3

It is basal to the treatment and prevention of complications from being diabetic, that health professionals, people with diabetes and their families are covered with qualified information on their level of understanding.23 To assist in patient compliance with treatment, the nurse must be strategies of care and during the nursing consultation mediate the emotional reaction of the patient toward their disease and their behavior in self-management.12

-METHOD-

Exploratory-descriptive study with a quantitative approach. The population was composed of inpatients in clinical surgery and outpatient service of the University Hospital Lauro Wanderley /HULW/UFPB.

The sample was composed of 20 patients with Diabetes Mellitus to meet the criteria for inclusion: express interest in participating in the research, be in full exercise of their mental activities, presenting a lesion in the lower limbs and sign the Informed Consent Form (ICF).

The data collection took place in the period from July to September 2011 in shifts morning and afternoon, as availability of the patient, and the operation of the service. A semistructured interview form was used. For analysis, were evaluated as statistical procedure, arranged in tables containing absolute numbers and percentages, accompanied by the theoretical foundation of the results.

The study was carried out taking into account the ethical aspects of research involving human beings, which is recommended by Resolution 196/9624 of the National Health Council, as well as the Resolution 311/2007 COFEN.25

RESULTS

Table 1 shows that, in relation to gender, prevailed males (55%), followed by females (45%). The population of male birth rate is higher than the female, corroborating this statement the quantitative was also male, this shows that the female population lives more than the male and that the number of male deaths is greater than that of women.26

<table>
<thead>
<tr>
<th>Variables</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>55</td>
</tr>
<tr>
<td>Female</td>
<td>09</td>
<td>45</td>
</tr>
<tr>
<td>Age group (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 45-50</td>
<td>04</td>
<td>20</td>
</tr>
<tr>
<td>From 50-55</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td>From 55-60</td>
<td>05</td>
<td>25</td>
</tr>
<tr>
<td>&gt; 60</td>
<td>11</td>
<td>55</td>
</tr>
<tr>
<td>Profession/occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farmer</td>
<td>05</td>
<td>25</td>
</tr>
<tr>
<td>Homemaker</td>
<td>04</td>
<td>20</td>
</tr>
<tr>
<td>General Services</td>
<td>02</td>
<td>10</td>
</tr>
<tr>
<td>Driver</td>
<td>02</td>
<td>10</td>
</tr>
<tr>
<td>Nurses Aid</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td>Military</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td>Dentist</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td>Seamstress</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td>Laundress</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td>Amateur civil construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>11</td>
<td>55</td>
</tr>
<tr>
<td>Evangelical</td>
<td>08</td>
<td>40</td>
</tr>
<tr>
<td>Other</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Considering the results of the age group at greatest prevalence is over 60 years (55%) followed by the age of 55 (25%). It is exactly at this age that occurs the onset of diabetes, which presents itself as chronic disease by its characteristics. According to estimates of the World Health Organization, diabetes is becoming the epidemic of the century and affects about 246 million people in the world.
In relation to the profession the farmer had greater participation (25%) followed by the homemaker (20%). Speaking on these issues is to rescue the worldwide movements and think that this stage of life, there is a drop in salaries, quality of life due to lack of financial support to cover the costs of medicines and greater individual comfort, paying everyday bills and many other responsibilities that the head of the family has.

Retirement in Brazil is the state of inactivity of human beings, they have worked in the public or private sector, this condition is the result of old age and or chronic illnesses or even social security contributions during the legal time the person had worked.

Note that the Catholic religion was predominant (55%) followed by evangelicals (40%) and Jehovah's Witness (5%). Corroborating these data Catholics are still majority in Brazil, in 1940 until the year of 2000 there was a fall of 95% to 73.6% in the number of Catholics and the number of evangelical Christians has grown from 2.6% to 15.4% in all regions, there were no calculations on the number of Catholics in the 2010 census, but there is a preview that evangelicals have grown even more.

Table 2. Frequency Distribution of respondents, according to the level of knowledge about the complications. Patients with Diabetes Mellitus (n = 20) - João Pessoa, 2011.

<table>
<thead>
<tr>
<th>Complications</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic Foot</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Blindness</td>
<td>06</td>
<td>30</td>
</tr>
<tr>
<td>Renal Failure</td>
<td>02</td>
<td>10</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>02</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2 shows that the majority of respondents with a percentage of 50% had the understanding that diabetic foot is one of the complications of diabetes mellitus, followed by 30% of clients who responded that the blindness was a known complication.

The severe form of peripheral arterial disease in the lower limbs is responsible, in large part, by the increased existence of gangrene and subsequent amputation in diabetic patients. Neuropathy and commitments in wound healing also play a role in diabetic foot disease.

Diabetic retinopathy is the second most common cause of irreversible blindness, preceded only by macular degeneration related to age. It is the main cause of blindness in people between 25 and 75 years of age. Approximately 40% of diabetic patients have some degree of retinopathy, generally mild; 80% of diabetic patients have retinopathy after 25 years of diabetes duration, and 25 of diabetic patients have a low vision sufficiently marked to be considered legally blind.

The nephropathy, or kidney disease, is a common complication of diabetes. People who bear this disease have a possibility of 20 to 40% of renal disease.

Acute myocardial infarction is two times more common in diabetic men and three times more common in women with diabetes. There is also an increased risk for complications resulting from myocardial infarction and an increased probability of a second myocardial infarction.

Table 3. Distribution of survey participants, referring to the onset of the lesions. Patients with Diabetes Mellitus (n = 20) - João Pessoa, 2011.

<table>
<thead>
<tr>
<th>Onset of lesions</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Callus on feet</td>
<td>06</td>
<td>30</td>
</tr>
<tr>
<td>Injuries on feet</td>
<td>05</td>
<td>25</td>
</tr>
<tr>
<td>Small cut</td>
<td>04</td>
<td>20</td>
</tr>
<tr>
<td>Cutting nails</td>
<td>02</td>
<td>10</td>
</tr>
<tr>
<td>Verruca or bubble</td>
<td>02</td>
<td>10</td>
</tr>
<tr>
<td>Cracked foot</td>
<td>01</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3 demonstrates that in accordance with the appearance of the lesions, the majority of clients with a percentage of 30% said that callosity in the feet to the appearance of lesions, another part of respondents with a total of 25% said that the injured feet contribute to the appearance of lesions.

As the above data the types of lesions that most affects people with diabetes result in the formation of calluses on the feet, with a percentage (30%), which reported that occurs using new shoes. The development and emergence of callus in the lower extremities become frequent and subsequent to the formation of injury insensitive due to peripheral neuropathy present, making it necessary for the individual with diabetes to adopt foot care because they do not feel the injury and shall observe days after onset and usually perceived when the lesion is infected.

Becoming indispensable for prevention measures, care and daily glycemic control to avoid the main predisposing factor for...
ulcers/foot lesions, such as improving the quality of life of patients.\textsuperscript{1}

Table 4 shows that a percentage of 60\% of patients stated they prevent lesions in the LL, followed by 40\% who do not do any kind of prevention to avoid injury.

The deficit of self-care in patients with diabetes mellitus is a risk factor for lesions of the LL and other complications. The importance of the nurse as a mentor to these types of patients on treatment by addressing the risk factors for injury in LL. A relevant factor to poor schooling, many patients with the disease, results found in this study when analyzing the profile of the respondents.\textsuperscript{13}

For adherence to self-care the patient needs first agree with the treatment and follow the guidelines suggested by the professionals, motivation and thus giving continuity to treatment outside of the hospital environment, as well as count on the help of a companion both in the control of self-care about assisting with this need, physically and emotionally.\textsuperscript{12}

The lesions is usually a result from trauma and often complicated with gangrene and infection, caused by failures in the healing process, which may result in amputation, when not establishing early and appropriate treatment.\textsuperscript{28-29}

The lesions of diabetic foot resulting from the combination of two or more risk factors that act concurrently and can be triggered by both intrinsic extrinsic traumas, associated with peripheral neuropathy, peripheral vascular disease and the biomechanical change.\textsuperscript{30}

Table 5 shows that in relation to prevention of lesions in the LL, 20\% of respondents say they inspect their feet daily, 20\% say that they wash and dry feet without leaving moisture and 20\% always cut nails straight.

The development of lesions in diabetic feet, misinformation, lack of sensitivity in the feet (peripheral neuropathy), peripheral vascular disease, pressure points in the affected region, previous history of ulcers, skin diseases and use of inappropriate shoes.\textsuperscript{5}

The use of new shoes and misuse of these result in calluses, which was highlighted in the highest response rate among participants in reporting the appearance of the lesion, as previously discussed. Appropriate conduct is the debridement of calluses, it is also important to stress that it can increase by 30\% the pressure at any given point in the foot region. Added as being essential for prevention measures, is to perform daily blood glucose control to avoid the main predisposing factor for foot ulcers is with peripheral neuropathy.\textsuperscript{5}

Table 5 shows that in relation to prevention of lesions in the LL, 20\% of respondents say they inspect their feet daily, 20\% say that they wash and dry feet without leaving moisture and 20\% always cut nails straight.

The development of lesions in diabetic feet, misinformation, lack of sensitivity in the feet (peripheral neuropathy), peripheral vascular disease, pressure points in the affected region, previous history of ulcers, skin diseases and use of inappropriate shoes.\textsuperscript{5}

The use of new shoes and misuse of these result in calluses, which was highlighted in the highest response rate among participants in reporting the appearance of the lesion, as previously discussed. Appropriate conduct is the debridement of calluses, it is also important to stress that it can increase by 30\% the pressure at any given point in the foot region. Added as being essential for prevention measures, is to perform daily blood glucose control to avoid the main predisposing factor for foot ulcers is with peripheral neuropathy.\textsuperscript{5}

**CONCLUSION**

The study shows that the majority of respondents with a percentage of 50\% had the understanding that diabetic foot is one of the complications of diabetes mellitus, followed by 30\% of clients who responded that the
blindness was a known complication. In accordance with the appearance of the lesions the majority of clients with a percentage of 30% said they corns on the feet contributes to the appearance of lesions, another part of the respondents with 25% said that the wounds on legs contribute to the emergence of the lesions. Regarding the prevention of LL lesions, 60% of the respondents perform prevention, followed by 40% of the population surveyed does not perform any type of prevention to avoid lesions in the LL. Table 5 shows that in relation to prevention of lesions in the LL, a total of 20% of respondents say they inspect their feet daily, 20% say that they wash and dry feet without leaving moisture and 20% always cut nails straight.

The person with a chronic disease such as diabetes mellitus has to be able to live together with the illness, seeking for a normal life, however, they should follow some basic recommendations: perform a rigid control of glycemia, maintain an adequate diet, practice of regular exercise, take the hypoglycemic medicine daily, take care with the feet and always associate the drugs to a change in life style, so the glucose will be properly controlled, preventing the complications resulting from the disease.

The results of this study could serve as a source of information for the academic environment and for the nursing professional to work in this line of research from that experience, and may serve as a stimulus for other researchers seeking to further develop the theme. It is expected that new studies are subsidised on the themes discussed and alert the reflections of academics and health professionals to develop strategies for the care of patients with diabetes mellitus that have lesions on their limbs, maximizing their quality of life.

The completion of this study was of great relevance for patients with diabetes who had lesions on the lower limbs, it contributed to a better understanding of the disease, including the concept, classification, clinical manifestations, complications, and the general care that the diabetic patient should have with their diet, pharmacological treatment, exercise and foot care, which were submitted to this population by researchers, through lectures and individual orientation, collaborating with them for the improvement of their health.

REFERENCES

12. Ferreira FKS, Antunes KM, Barçante TA, Tannure MC. Fatores e Cuidados que Interferem na Adesão do Paciente ao...
Nascimento TCO, Navarine TCCR, Anizio BKF et al.


29. Levin ME. Foot lesions in patients with diabetes mellitus. Endocrinol Metab ClinNorth Am [Internet]. 1996 [cited 2010 Apr...
Knowledge of patients with diabetes mellitus...
