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EVALUATION OF THE IMPACT OF *DIABETES MELLITUS* ON THE QUALITY OF LIFE OF AGED PEOPLE

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ABSTRACT
The aim of this study was evaluating the quality of life of aged people with Diabetes Mellitus type 2 accompanied by primary health professionals. This is a descriptive and transversal study, with a quantitative approach, which was conducted in 2011 with 68 diabetic aged people registered in health units of the city of Cajazeiras - Paraiba, by means of application of an instrument with sociodemographic variables and another one to evaluating the quality of life - Problems Areas in Diabetes Scale (B-PAID), Brazilian version. The results showed that, in general, diabetes has a significant impact on the lives of younger seniors (of average of 68.84 years old), female (75%), with lower level of education (60.3%) and with shorter time of disease diagnosis (mean 6.62 years). Thus, although the majority of the study participants have expressed a good standard of quality of life related to health, having diabetes brings specificities that vary from individual to individual, characterizing the phenomenon as singular. It was even possible to recognizing the most negative dimensions caused by diabetes, thus enabling the planning of health promotion and prevention actions to this group to improving their quality of life.

Keywords: Diabetes Mellitus. Quality of life. Aged. Primary health care.

INTRODUCTION

Since the early twentieth century, with the great technological advances, it created the hope that the cure of diseases or effective and definitive treatments would be a reality; however, despite the developments in medicine, it becomes clear that some diseases are not cured. Among these, we can highlight the Diabetes Mellitus (DM) presenting as a disease with chronic evolution, resulting in long-term complications for the organism and multidimensional damage in the lives of patients[1].

For the large number of elderly people affected and the economic and social implications involved in the management and treatment, DM is a serious public health problem worldwide. Therefore, DM is presented as one of the most common diseases in the classification of chronic degenerative diseases; the treatment and control require changes in behavior in relation to food, medication intake and lifestyle. These changes may compromise the quality of life (QOL) if there is no proper guidance about the treatment or recognition of the importance of the complications arising out of this pathology[2].

There is consensus among the scholars[1] that DM is having significant impact on QOL of people aged over 60 years old. Given this assertion, assessment of QOL of the elderly patient is recognized as an important area of scientific knowledge, because of the concept of QOL is to bring health, satisfaction and well-being in physical, mental, social, economic and cultural spheres.

In this context, it is important to use specific assessment of QOL instruments, since the use of these instruments allows for a more objective

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and clear judgment of the global impact of chronic diseases such as diabetes on the QOL of elderly patients. Such evaluation has the advantage of including subjective aspects not usually addressed by other evaluation criteria[3]. Allied to this, there are few studies that used the B-PAID (Problems Areas in Diabetes Scale) to assessing the quality of life of elderly people with diabetes.

Thus, to understand how the process of aging with diabetes as well as its influence on quality of life may contribute to a greater care to the health of the elderly, enabling the deployment of proposed intervention in order to promoting QOL and the well-being at that age.

Given this context, the research aims to evaluating the quality of life of elderly patients with Diabetes Mellitus Type 2 accompanied by the primary care professionals of the municipality of Cajazeiras-PB.

METHODOLOGY

This is a descriptive and cross-sectional study with a quantitative approach, performed in 11 Family Basic Health Units (UBASF) located in the urban area of Cajazeiras - Paraiba. Data were collected during the month of November 2011, after approval by the Federal University of Campina Grande (UFCG) Research Ethics Committee (CEP) at the University Hospital Alcides Carneiro (HUAC), under protocol number: 20111410-045.

The study population consisted of all seniors diagnosed with Diabetes Mellitus Type 2 and monitored by the Family Health Teams (FHT) of the municipality; and, for the composition of the sample, it took as a basis the amount total of diabetic people accompanied by the FHS in the year 2011, which was of 962 people, according to data from the Primary Care Information System (SIAB - reference month January)[4]. This quantity was used as a parameter for the sampling strategy in this study, because there is no available SIAB distribution by age of the diabetic population, making it impossible to measuring only the number of elderly people with diabetes.

Still considering a population-based study (household survey) conducted by the Ministry of Health on risk behaviors and morbidity from non-communicable diseases[5] and diseases, it was adopted in calculating the sample with 5% prevalence of diabetes (based on percentage checked in Brazil – 5,2%, and the city of João Pessoa-PB – 5,3%).

Thus, for the sample, it was considered a sampling error of 5% and a confidence interval of 95% in the calculation of sample size for finite populations. By applying the formula met a total of 68 subjects who met the following inclusion criteria: age 60 or older and be registered in Sis-HiperDia. All ethical principles of research met the standards of the National Health Council, in accordance with Resolution 196/96 of the Ministry of Health, regarding research involving human subjects[6].

The choice of participants was operationalized by dividing the total number of subjects to be investigated by the number of family health teams located in the urban area of the municipality ($68 \div 11 = 6{,}18 = 6$), resulting in six elderly by FHS. With this calculation, the selection of seniors that were investigated in each UBASF occurred from the consultation to the follow-up of hypertensive and diabetic Sis-HiperDia, of which the first six names were chosen that were contained therein and in accordance with the record inclusion criteria listed.

There were used as exclusion criteria for participants: being in clinical health to answer questions; absence in the household at the time of data collection (in these cases, the elderly were replaced by those seniors following the registration form Sis-HiperDia).

After being granted permission to the completion of the research by the CEP, there were scheduled visits for the elderly in their homes, through the collaboration of community health workers in selected micro-areas. Data collection was performed by the researcher by applying one of two instruments: one with sociodemographic variables (sex, age, time since diagnosis of diabetes and insulin use) and the other titled Brazilian version of Problems Areas in Diabetes Scale (B-PAID). It is noteworthy that the interviews were initiated after presentation and signing the

Informed Consent Form (ICF) by the participants.

B-PAID is a 20-item questionnaire focused on negative emotional aspects related to living specifically with diabetes. For each item may be assigned score from 1 (meaning "no problem") to 6 ("serious problem"). The score is transformed into a scale ranging from 0 (satisfactory outcome) to 100 (highest level of emotional distress).

The collected data were tabulated in Microsoft Office Excel 2007 and analyzed statistically using the IBM Statistical Package for Social Science (SPSS) version 19 software calculations of absolute, relative frequencies and measures of central tendency (mean and standard deviation) were made besides the weighting of scores in the domains and dimensions, and then the results were presented in tables.

RESULTS AND DISCUSSION

The participants were 68 seniors who met the inclusion criteria and agreed to participate in the study voluntarily. The results were grouped into two stages, the first being the demographic profile of the participants and the second the quality of life related to health.

As regards the age of the individuals involved, the same varied between 60 to 85 years old, mean of 68,84, with a standard deviation of ± 6,57. Of the 68 participants, 51 (75%) were female and 17 (25%) were male. This same study found a slightly higher percentage (24.3%) of males in the same age group audience, demonstrating that, although the picture of the state of Paraiba in 2009 showed the highest prevalence of Diabetes Mellitus among men this study was the prevalence of women, a result that could point to an increased demand for their basic health units, in contrast to men[5].

Regarding age, the largest number of older people with type 2 diabetes in this study was present in the age group 60-64 years old, where were found 34% of cases. On schooling, the results revealed that 60.3% of respondents had only primary education. The survey also showed a considerable illiteracy rate (32.4%). These results are crucial for the success of this preventive approach to diabetes public because poor education can hinder access to information, bringing less chances of learning about self-care, and difficulties in understanding the therapeutic approaches[7].

Furthermore, the presence of a considerable amount of illiterates among elderly diabetics is also a worrying statistic since Besides the risk factors mentioned above, the lowest level of education seems to be directly associated with depressive symptoms among diabetics, greatly compromising their mental health, a unique aspect in assessing the quality of health-related life[8].

The time of diagnosis of diabetes ranged from 1 to 20 years with a mean of 6.62 and standard deviation of 4.3 years. The higher prevalence was found in diabetic patients diagnosed with time from 5 to 9 years (37%). The Brazilian population, a significant portion of individuals with this disease is unaware of the diagnosis, which is carried out, in most cases, since the presence of complications of the disease[9]. In this context, the preventive measures become the only strategies to reduce morbidity and mortality caused by the disease. Strict metabolic control associated with simple preventive and curative measures are relatively able to prevent or delay the onset of chronic complications of DM, resulting in better quality of life for the diabetic individual.

The use of insulin in diabetic elderly was another aspect investigated in this study. The results showed a total of 23.5% of respondents who were using insulin.

Regarding the analysis of diabetes-related quality of life using the B-PAID questionnaire, the results were grouped by related items, arranged in four sub-dimensions[10]: a) Emotional problems related to diabetes; b) Problems related to treatment; c) Problems related to food; and d) Problems related to social support. The results were also shown in tables and presented through absolute and percentage values for better understanding of their meanings.

The sub-dimension 1 displays items related to emotional aspects manifest by diabetics to living with the disease. It consists of 12 items assessing fear, anger, depression and concerns of individuals about their health (Table 1).

When surveyed about their feelings regarding diabetes, older people said they did not feel scared when they think about living with diabetes (57.4%), do not get depressed when they think about having to live with diabetes (61.8%) and do not know whether changes in mood and feelings experienced by them are related to diabetes (63.2%). However, a cross-sectional study conducted in Porto Alegre, to checking cognitive flexibility in diabetic patients, identified the presence of depressive symptoms in older adults with type 2 diabetes mellitus by applying a specific instrument (Beck Depression Inventory)[11].

With regard to the fact of considering diabetes a weight in its life, it was found that 60% of the participants do not consider this way. Similar findings were found in another study in which participants reported that the disease appears as part of your life, but it is not the center of it[12]. Perhaps because the DM is a relatively new disease in their lives (average of 6 years of diagnosis), participants showed little concern and few negative feelings about this.

Table 1 - Emotional problems related to diabetes. Cajazeiras-PB, Brazil, 2011.

	It is a serious problem	It is almost a serious problem	It is a moderate problem	It is a small problem	It is not a problem
	% (f)	**% (f)**	**% (f)**	**% (f)**	**% (f)**
Feel fear when you think about living with DM	8.8 (6)	11.8 (8)	8.8 (6)	13.2 (9)	57.4 (39)
Falls apart when you think about having to live with DM	1.5 (1)	7.4 (5)	1.5 (1)	27.9 (19)	61.8 (42)
Don't know if humor/feelings have to do with DM	1.5 (1)	1.5 (1)	8.8 (6)	25 (17)	63.2 (43)
Feels that DM is a weight	8.8 (6)	4.4 (3)	10.3 (7)	16.2 (11)	60.3 (41)
Worry about low blood glucose episodes	2.9 (2)	5.9 (4)	5.9 (4)	4.4 (3)	80.9 (55)
Gets angry/pissed when thinking about living with DM	0 (0)	10.3 (7)	8.8 (6)	10.3 (7)	70.6 (48)
Worries about the future and the possible complications	16.2 (11)	11.8 (8)	8.8 (6)	17.6 (12)	45.6 (31)
You feel guilty/anxious when you don't mind DM	16.2 (11)	7.4 (5)	8.8 (6)	11.8 (8)	55.9 (38)
Do not accept your diabetes	1.5 (1)	2.9 (2)	11.8 (8)	7.4 (5)	76.5 (52)
Feel that DM is taking your mental/physical energy	11.8 (8)	2.9 (2)	16.2 (11)	8.8 (6)	60.3 (41)
Dealing with the complications of DM	16.2 (11)	5.9 (4)	7.4 (5)	17.6 (12)	52.9 (36)
Sit down exhausted with the effort to taking care of DM	7.4 (5)	1.5 (1)	7.4 (5)	14.7 (10)	69.1 (47)

Source: SPSS, 2011.

When evaluating their concern with episodes of low glucose, 80.9% of seniors responded not worrying about this issue, allowing assume unaware of the danger that hypoglycemia can result in their health, a fact confirmed in another study also found that diabetic patients studied did not know what to do before a painting of hypoglycemia or hyperglycemia. DM is a necessary offset to obtain a better quality of life factor because it prevents future complications related to disability, so the importance of the patient being aware of their blood glucose levels that can be achieved with self-monitoring[13].

When asked if they get angry when they think about living with diabetes, 70.6% of seniors said they do not express such sentiments, indicating that the disease is already accepted something in their lives, although this has not occurred in all cases (29.4%), which brings out the importance of multi-professional psychological support, as well as from family and friends in this process, so that the person with diabetes is better able to coping with their new condition.

Another intriguing aspect of this study is that the majority of seniors (55%) responded

positively to the question about worrying about the future and the possibility of serious complications, a counterpoint to the assertion verified previously that diabetes is not a burden on their lives. However, when asked about their feelings regarding self-care, the majority (55.9%) showed no feelings of guilt/anxiety in situations that do not take care of diabetes; and when asked if they would accept diabetes, also responded most positively (76.5%). These results enable us to verify that the elderly have ambivalent feelings about the perception of themselves as beings with diabetes.

It is also significant emphasizing that the control of risk factors and appropriate treatment are of paramount importance in the development of chronic complications associated with diabetes delay and that all subjects in this study are given in addition to guidance, free treatment by the professionals of the Health Strategy the Family.

Another aspect observed in relation to health-related quality of life was the elderly feel that diabetes is taking your mental and physical energy. In this item, 60.3% of them responded negatively to this item. Although the results indicate a good relationship of the elderly with diabetes, it is known that the quality of life in old age has been linked to issues of independence and autonomy, and the dependence of the elderly result of biological changes (disability) and changes in social demands[14]. The more active the elderly is the greater satisfaction with life and hence better quality of life.

Being older and having diabetes are conditions that pose a risk to the proper standard of health-related quality of life by interfering directly in the general provision (physical and mental) of these individuals. Perhaps, being relatively recent diagnosis of diabetes for most of the study participants (mean 6 years); their biological and social consequences may not have been perceived in its entirety.

Analyzing the topic of "deal with the complications of diabetes", 52.9% of seniors responded that this is not a problem in their lives, and also said they do not feel exhausted with the constant effort that is needed to taking care of their diabetes (69.1%);perhaps because neither expressing feelings of guilt in situations that do not care, these items have obtained positive results. This shows that the elderly diabetic living a contradiction, since the report that the disease does not interfere in his life, has clarified that certain care and feels no options to have to accept the restrictions imposed by their chronic condition. A similar situation was observed in another study in which some of the testimonials from patients treated on the obligation to follow certain precautions to avoid complications and help them to have a life as close to normal as possible[15]. Thus, it also noticed certain resignation.

The second sub dimension groups the specific items related to the treatment of patients with diabetes. This dimension is composed of three items that assess the degree of determination of individuals to follow the implemented therapy (Table 2).

Table 2 - Problems related to treatment. Cajazeiras-PB, Brazil, 2011.

	It is a serious problem	It is almost a serious problem	It is a moderate problem	It is a small problem	It is not a problem
	% (f)	**% (f)**	**% (f)**	**% (f)**	**% (f)**
Does not have clear targets and specific care to DM	0 (0)	4.4 (3)	13.2 (9)	8.8 (6)	73.5 (50)
Feeling discouraged with the treatment of DM	1.5 (1)	4.4 (3)	13.2 (9)	7.4 (5)	73.5 (50)
Feeling dissatisfied with the doctor who runs DM	0 (0)	5.9 (4)	2.9 (2)	8.8 (6)	82.4 (56)

Source: SPSS, 2011.

The results show that most seniors do not feel discouraged by the treatment (73.5%) or dissatisfied with the doctor who takes care of diabetes (82.4%), while recognizing that do not have clear and specific goals in diabetes care (73.5%). The findings in this study show that the elderly have not established guidelines to control their health condition, nor cares about this, which can lead to complications of the disease in the shortest time and affect their quality of life. We emphasize the importance of family and friends, as well as an interdisciplinary professional group that provides technical information and emotional support for coping with the disease[16].

The sub dimension 3 centralizes specific topics related to the diet of the individual with diabetes. This dimension is composed of three items that assess the level of concern of the elderly in relation to meals and faces the same uncomfortable about it (Table 3).

The results showed that most seniors do not care about the food and what to eat (69.1%) and have no feelings of deprivation in relation to meals (52.9%), highlighting the difficulty that they hold to follow the recommended dietary restrictions, as noted in another study, which contributes to the difficulty of managing diabetes and worsening of symptoms, leading to the appearance of complications at an early stage[17].

These results, coupled with the fact that older people consider not facing uncomfortable situations in relation to diabetes (60.3%), evidence of the predominant role of the dietitian as a member of the interdisciplinary team in the care of older people with diabetes, because food is a necessity Basic human that is influenced by numerous factors, such as socio-cultural aspects, age, physical and mental status, economic status and general health status, in this case, the Diabetes Mellitus.

Table 3 - Emotional problems related to food. Cajazeiras-PB, Brazil, 2011.

	It is a serious problem	It is almost a serious problem	It is a moderate problem	It is a small problem	It is not a problem
	% (f)	**% (f)**	**% (f)**	**% (f)**	**% (f)**
Faced with uncomfortable situations in relation to the care of DM	11.8 (8)	2.9 (2)	16.2 (11)	8.8 (6)	60.3 (41)
Have feelings of deprivation with respect to food and meals	16.2 (11)	5.9 (4)	7.4 (5)	17.6 (12)	52.9 (36)
Worries about food and with what to eat	7.4 (5)	1.5 (1)	7.4 (5)	14.7 (10)	69.1 (47)

Source: SPSS, 2011.

The sub dimension 4 reflects specific topics related to social support that individuals with diabetes need to tackle the disease and maintain their daily activities. This scale consists of two items that assess how the elderly perceive yourself and your loved in coping with diabetes (Table 4).

Table 4 - Problems related to social support. Cajazeiras-PB, Brazil, 2011.

	It is a serious problem	It is almost a serious problem	It is a moderate problem	It is a small problem	It is not a problem
	% (f)	**% (f)**	**% (f)**	**% (f)**	**% (f)**
Feel alone with DM	4.4 (3)	4.4 (3)	17.6 (12)	16.6 (11)	57.4 (39)
Feel that family and friends don't support you	7.4 (5)	1.5 (1)	8.8 (6)	19.1 (13)	63.2 (43)

Source: SPSS, 2011.

When asked about these aspects, older respondents who do not feel alone because possessing diabetes (57%) and realize that family and friends support you in relation to the disease (63.2%). These results are corroborated by a study conducted in the state

of São Paulo in which elders identified the importance of family presence in their lives as a source of personal fulfillment and security[18].

However, even noting that most seniors say they do not feel alone with diabetes and the family and friends support them, a significant portion manifested the opposite (43% and 36.8%, respectively), a result corroborated in another study[19]. It is known that diabetes imposes suitability to various lifestyle habits such as diet, physical activity and medication use, which can be mitigated with the presence, participation and encouragement of family. Thus, lack of family support is one of the barriers to treatment adherence and self-care of diabetes. Patients in this study were elderly, and to perform some tasks required by the disease, such as medication administration, for example, need help making once more with the family is a component of extreme importance in the lives of these individuals.

CONCLUSIONS

After analyzing the quality of life related to health through the application of B-PAID, it was found that, in general, diabetes did not have a negative impact on quality of life of younger elderly, females with lower education level and shorter time to diagnosis of diabetes. Although most study participants had expressed a good standard of health-related quality of life, diabetes brings porting specifics that vary from individual to individual, characterizing the phenomenon as singular.

Through this type of study it can meet the most negative dimensions caused by diabetes, thus enabling the planning of health promotion and prevention targeting this group in order to empower the individual with DM for more healthy choices in their daily lives, aimed at improving QOL.

Therefore, recognizing the QOL of individuals with diabetes means an odd moment of understanding, and refers again to the importance of planning and implementing actions of governmental responsibility, with grounding in scientific information, to be developed through public health policies involving improving the quality of life of individuals.

AVALIAÇÃO DO IMPACTO DA *DIABETES MELLITUS* NA QUALIDADE DE VIDA DE IDOSOS

RESUMO

O presente estudo teve como objetivo avaliar a qualidade de vida de idosos com *Diabetes Mellitus* do tipo 2 acompanhados pelos profissionais da atenção básica. Trata-se de um estudo descritivo e transversal, de abordagem quantitativa, realizado no ano de 2011 com 68 idosos diabéticos cadastrados nas unidades de saúde do município de Cajazeiras – Paraíba, por meio da aplicação de um instrumento com variáveis sociodemográficas e outro para avaliar a qualidade de vida – Problems Areas in Diabetes Scale (B-PAID), versões brasileiras. Os resultados apontaram que, de maneira geral, o diabetes exerce um impacto significativo na vida dos idosos mais jovens (com média de 68,84 anos), do sexo feminino (75%), com grau de escolaridade menor (60,3%) e com menor tempo de diagnóstico da doença (média de 6,62 anos). Conclui-se que, embora a maioria dos participantes do estudo tenha manifestado um bom padrão de qualidade de vida relacionado à saúde, portar diabetes traz especificidades que variam de indivíduo para indivíduo, caracterizando o fenômeno como singular. Pode-se ainda conhecer as dimensões mais negativas causadas pelo diabetes, possibilitando assim o planejamento de ações de promoção de saúde e prevenção voltadas a este grupo com vistas à melhoria da qualidade de vida.

Palavras-chave: Diabetes Mellitus. Qualidade de vida. Idoso. Atenção primária à saúde.

EVALUACIÓN DEL IMPACTO DE LA *DIABETES MELLITUS* EN LA CALIDAD DE VIDA DE LAS PERSONAS MAYORES

RESUMEN

El presente estudio tuvo como objetivo evaluar la calidad de vida de los pacientes ancianos con diabetes mellitus tipo 2 seguidos por el equipo de la atención primaria. Se trata de un estudio descriptivo y transversal, con enfoque cuantitativo, realizado en 2011 con 68 diabéticos de edad avanzada registrados en unidades de salud del municipio de Cajazeiras - Paraíba, mediante la aplicación de un instrumento con las variables sociodemográficas y otro para evaluar la calidad de vida – Problems Areas in Diabetes Scale (B-PAID), versión

brasileña. Los resultados mostraron que, en general, la diabetes tiene un impacto significativo en las vidas de las personas mayores más jóvenes (con media de 68,84 años), mujeres (75%), con bajo nivel educativo (60,3%) y con el diagnóstico de la enfermedad más corto (media de 6,62 años). Llega-se a la conclusión de que, aunque la mayoría de los participantes en el estudio ha expresado un buen nivel de calidad de vida relacionada con la salud, portar diabetes trae especificidades que varían de un individuo a otro, caracterizando el fenómeno como singular. También fue posible conocer las dimensiones más negativas causadas por la diabetes, lo que permite la planificación de las acciones de promoción de salud y prevención enfocadas a este grupo destinado a mejorar la calidad de vida.

Palabras clave: Diabetes Mellitus. Calidad de vida. Anciano. Atención primaria de salud.

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