



EDUCATIONAL PROGRAM IN HEALTH QUALITY OF LIFE OF INDIVIDUALS WITH TYPE 2 DIABETES: COMPARATIVE STUDY

PROGRAMA EDUCATIVO EM SAÚDE QUALIDADE DE VIDA DE INDIVÍDUOS COM DIABETES TIPO 2: ESTUDO COMPARATIVO

PROGRAMA EDUCATIVO EN SALUD CALIDAD DE VIDA DE INDIVIDUOS CON DIABETES TIPO 2: ESTUDIO COMPARATIVO

Beatriz Carvalho Espindola¹, Vera Maria Sabóia², Geilsa Soraia Cavalcanti Valente³

ABSTRACT

Objective: to describe the quality of life of individuals with type 2 diabetes. **Method:** exploratory and descriptive study, with a quantitative approach, with 50 older adults. To collect data, we used a data characterization tool and the WHOQOL-Bref. The analysis was performed by descriptive statistics. The research project was approved by the Research Ethics Committee, Protocol 274/11. **Results:** health education to people living with diabetes is relevant to their treatment, due to the contribution it exerts on information, reflection and criticism, not limited to issues related to pathology, but expanding to more comprehensive and contextual issues, favoring the improvement of quality of life. **Conclusion:** although individuals with diabetes mellitus may have a loss as to their quality of life, health education composes one of the care technologies that enable improvements. **Descriptors:** Diabetes Mellitus; Quality of life; Health Education; Nursing; Health Promotion.

RESUMO

Objetivo: descrever a qualidade de vida de indivíduos com diabetes tipo 2. **Método:** estudo exploratório e descritivo, de abordagem quantitativa, com 50 adultos idosos. Para a coleta de dados, utilizou-se um instrumento de caracterização de dados e o WHOQOL-Bref. A análise foi pela estatística descritiva. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, Protocolo n.º 274/11. **Resultados:** a educação em saúde com pessoas que vivem com diabetes mellitus é relevante para o seu tratamento, visto a contribuição que ela exerce na informação, na reflexão e na crítica, não se limitando a questões relativas à patologia, mas ampliando para questões mais abrangentes e contextuais, favorecendo a melhoria da qualidade de vida. **Conclusão:** embora indivíduos com diabetes mellitus possam ter um prejuízo quanto a sua Qualidade de Vida, a educação em saúde compõe uma das tecnologias assistenciais que possibilitam melhorias. **Descritores:** Diabetes Mellitus; Qualidade de vida; Educação em Saúde; Enfermagem; Promoção da Saúde.

RESUMÓ

Objetivo: describir la calidad de vida de individuos con diabetes tipo 2. **Método:** estudio exploratorio y descriptivo, de abordaje cuantitativo, con 50 adultos ancianos. Para la recolección de datos, se utilizó un instrumento de caracterización de datos y el WHOQOL-Bref. El análisis fue por la estadística descriptiva. El proyecto de investigación fue aprobado por el Comité de Ética en Investigación, Protocolo n.º 274/11. **Resultados:** la educación en salud con personas que viven con diabetes mellitus es relevante para su tratamiento, una vez que la contribución que ella ejerce en la información, en la reflexión y en la crítica, no limitándose a cuestiones relativas a la patología, pero ampliando para cuestiones más amplias y contextuales, favoreciendo la mejoría de la calidad de vida. **Conclusión:** sin embargo individuos con diabetes mellitus puedan ter un prejuicio quanto su Calidad de Vida, la educación en salud componen una de las tecnologías asistenciales que posibilitan mejorías. **Descriptores:** Diabetes Mellitus; Calidad de vida; Educación en Salud; Enfermería; Promoción de la Salud.

¹Nurse, Bachelor in Nursing, School of Nursing Aurora Afonso Costa, Federal Fluminense University/EEAAC/UFF. Niterói (RJ), Brazil. E-mail: bia_carvalho11@yahoo.com.br; ²Nurse, PhD in Nursing, Professor, Department of Nursing Fundamentals and Administration, School of Nursing Aurora Afonso Costa, Federal Fluminense University/UFF. Niterói (RJ), Brazil. E-mail: verasaboia@uol.com.br; ³Nurse, PhD Professor in Nursing, Department of Nursing Fundamentals and Administration, School of Nursing Aurora Afonso Costa, Federal Fluminense University/UFF. Niterói (RJ), Brazil. E-mail: geilsavalente@yahoo.com.br

INTRODUCTION

The World Health Organization (WHO) defines quality of life as "the individual's perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns".¹ The quality of life has to be understood and analyzed in its social context, which unfolds in environmental conditions, human biology, quality of health services, which are essential components of health.²⁻³

The incidence of non-communicable diseases has increased in the world today as a result of genetic interaction and involvement of risk factors that are determinants of disease. Technological advances, since the beginning of the twentieth century, has created the expectation that the cure of diseases or efficient and definitive treatments would be reality, however, despite the progress of medicine, it is clear that some diseases are not likely to cure.⁴ Among them, we can relate the Diabetes Mellitus.

World Health Organization estimates found that the number of diabetics mellitus worldwide was 177 million in 2000, expected to reach 350 million people by 2025. These are alarming figures, currently, diabetes mellitus is configured as a true pandemic, with a challenge to public health systems.⁵

By their action, nurses become jointly responsible for providing conditions to the process of teaching and learning and thus promoting possible changes, in the treatment of diseases and consequently improved quality of life. Thus, the relationship between quality of life and health care should be established, the nurses act as a key role in the promotion and prevention of health of individuals and the population.

OBJECTIVES

- To describe the quality of life of the population affected by type 2 diabetes who participates and who does not participate in educational groups in health;
- To analyze the contribution of health education to the quality of life of the population affected by type 2 diabetes in the groups studied;
- To compare the impact of participation in educational programs in the quality of life of groups studied.

METHOD

This is a research with quantitative approach, with comparative, descriptive and

cross-sectional typology. Quantitative research involves the systematic collection of numerical information, usually under conditions of much control, and analysis of this information, using statistical procedures. This research uses mathematical description as a language, that is, the mathematical language is used to describe the causes of a phenomenon, the relationships between the variables.⁶

With respect to the cross-sectional method⁷, it consists of investigations, in which cause and effect are detected simultaneously, taking place in a single moment of the situation studied, in a population. The cross-sectional study involves the data collection at a point of time. The phenomena are obtained during the data collection period. The cross-sectional designs are especially suitable to describe the situation, the status of the phenomenon, or the relationship between a phenomenon and a fixed point.⁸

The study setting was the Group of Diabetic Patients, University Hospital Antonio Pedro - Federal University Fluminense (HUAP/UFF, in Portuguese), Niterói - RJ, Brazil, after approval by the Ethics Committee under No. 274/11. The population consisted of 50 adults and older customers, type 2 diabetic patients, treated in the nursing and endocrinology consultation clinics. The sample was selected on demand, from October 2011 to March 2012. Customers were divided into two groups. In the first group (G1), there were 25 patients who had been attending nursing visits and/or meetings in the Group of Diabetic Patients of HUAP/UFF for a year or more. In the second group (G2), there were the other 25 customers who had been attending endocrinology consultation, but had never participated in the education program HUAP/UFF.

For data collection, we used an additional tool for the characterization of socio-demographic (gender, age, education, marital status, religion, occupational profile and remuneration) and clinical data (time of participation in the program, reason of staying or no participation, blood glucose and/or value of the last glyco-hemoglobin, presence of acute and chronic complications, other associated diseases, knowledge about the disease and lifestyle) and the WHOQOL-Bref scale, Portuguese version.

The WHOQOL-Bref⁹ consists of 26 questions and considers the last two weeks experienced by respondents. Two questions relate to the individual perception of the quality of life and the other 24 are divided into four areas and represent each of the 24

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domains that make up the original instrument (WHOQOL-100), such as:

Domain I - Physical, with emphasis on the following aspects: pain and discomfort, energy and fatigue, sleep and rest, mobility, activities of daily living, dependence on medication or treatments and working capacity;

Domain II - Psychological, focusing on the following aspects: positive feelings, thinking, learning, memory and concentration, self-esteem, body image and appearance, negative feelings, spirituality, religion and personal beliefs;

Domain III - Social relations, addressing the aspects: personal relationships, social support, sexual activity;

Domain IV - Environment, with aspects: physical security and protection, home environment, financial resources, health and social care: accessibility and quality, opportunity to acquire new information and skills, participation in opportunities for recreation/leisure, physical environment: pollution, noise, traffic, climate and transport.

As for the data analysis, quantitative data were analyzed using descriptive statistics of socio-demographic and clinical data and WHOQOL-Bref.⁹ Data on Quality of Life were analyzed using Microsoft Office Excel 2007 software.

RESULTS AND DISCUSSION

To characterize the subjects of this study monitored at nursing consultation clinic and endocrinology consultation of HUAP/UFF, socio-demographic variables were analyzed, and it is observed a total number of 50 participants (n=50), divided in G1 and G2.

In Group G1, there is a predominance of females (84%) with a mean age of 63.5 years old, married (52%), Catholics (48%) and evangelical (48%), who do live not alone (88%) and have a diagnosis of type 2 diabetes mellitus for an average of 16.5 years. In Group G2, the prevalence is also female (68%) and the average age of individuals is somewhat lower compared to the G1 group (58.8 years old) and most participants are married (56%), evangelical (48%) and do not live alone (84%). Another difference is found in the average time for disease diagnosis that decreases from 16.5 years to 11.2 years.

Several studies have confirmed the fact that men are more vulnerable to diseases, especially severe and chronic diseases and die earlier than women.⁹⁻¹⁰ Thus, it is observed that regarding the male vulnerability, there is

an increase in morbidity and mortality rates, in which men, unlike women, do not seek primary care services. The male figure,¹¹ most of the time, enter the health care system through ambulatory and hospital care of medium and high complexity, worsening morbidity, the occurrence of a particular disease.

The Ministry of Health of Brazil says that much of the non-adherence of men to comprehensive care measures is due to the culture in which the stereotype of gender enhances practices and values of what being a male means. The disease ends up being considered as a weakness that men do not recognize as their biological condition.¹²

Another variable laden with cultural values and preconceptions is the marital status and the fact of living or not alone. It is noted that the vast majority of the research subjects do not live alone, having mostly a wife or partner. These data confirm the findings in the literature which indicate the relationship between marital status and morbidity and mortality, showing the highest mortality rate among widowed, divorced and single, being lower among married people.¹³

A study conducted by professors at Brigham Young University, in Utah, in the United States, concluded that social relationships - friends, family, neighbors and colleagues - increase in 50% the chances of living longer. That research was published in the journal PLoS Medicine.¹⁴ This interaction is beneficial not only for psychological health, but also reflects on physical health. Individuals end up taking more care when they have a social support, because the link with other individuals allows this care with themselves, this search for health.

Regarding clinical data, in relation to knowledge of these individuals, there was a predominance of G1 Group as to know what Diabetes Mellitus is (100%), the insulin use (96%), how to administer it (80%), doing the rotation (88%) and about how to properly maintain and use the materials (56%).

Although diet is followed with greater frequency in G1 (72%) than in G2 (68%), there are more obese individuals in the first group (48%) than in the latter (28%). Tobacco use does not appear in G1, with a prevalence of 8% in G2. Alcohol is present in both groups, 8% in G1 and 12% in G2. Physical exercise is very relevant in both groups, however, it is higher in the first (32%) than in the second (20%).

An item of great importance, the complications present in individuals living with type 2 diabetes, it is observed that there are more individuals with some type of

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complication in G2 (44%) than in G1 (36%). We noted a close relationship between these variables on clinical data and health education.

WHO (2003) recognizes the need for individuals with DM to adopt self-care skills that allow them to control the disease and the greater the access to information and knowledge the greater their ability to perform an action in a competent and effective way will be, accepting measures allowing for the adoption of healthy nutrition and the practice of daily physical activity.

Education is an essential part in the control of DM and consists of a continuous process of change in lifestyle that requires time, space, planning, teaching materials and trained professionals. Just following the prescription correctly is not enough to improve the QOL of these individuals.¹⁵

When encouraging reflection and criticism about the factors related to living conditions that affect the appearance of the disease in general, including diabetes mellitus, it is set a fruitful space to discuss citizenship rights with customers. To that end, the relationship between health and living conditions is emphasized during the meetings.¹⁶

Health education is inserted in a framework of knowledge that can provide society with a better understanding of the relationship between living conditions and work and health and disease.¹⁷ It is necessary that this person living with diabetes knows the basic elements that are relevant to the disease, such as diet, proper use of insulin, exercise, care of feet, hypoglycemia. Nurses need to have the perception to assess what the relevant issues are at that moment for the patient. Education should happen in a continuous manner, being a learning process, and not be shared at once with customers.

Health education developed in the Group of Diabetic Patients of HUAP/UFF³ seeks to provide guidance to participants of the Group and the Nursing Consultation on the importance of a balanced diet, stimulating self-care, which helps to minimize and/or prevent the onset of acute and chronic complications, encouraging them to reflect on the factors related to living conditions that affect the appearance of diseases in general, including diabetes mellitus, clarifying them about their rights as citizens.

Education is essential part of the treatment of people living with diabetes, associated with adequate metabolic control, physical activity and diet. The highest level of knowledge about the disease and its complications are related to improved quality of life, reducing

the number of hypoglycemic crisis, fewer hospital admissions, improved metabolic control and greater acceptance of the disease.¹⁸ Certainly the treatment will not be appropriate, if the diabetic and their families do not know these elements, such as diet, proper application of insulin, how to act in hypoglycemia, the foot care and other factors.³

Eating well and exercise seem to be the self-care activities that type 2 diabetics have more difficulty to integrate in daily life, with consequent lower adherence levels. This statement confirms the findings of the research, in which there is a low rate of people who perform physical activity, with the amount of 32% for G1 and 20% for the group G2.¹⁹ The barriers identified by individuals for adherence to diet and physical activity include lack of family support, stress, work or occupation, safety and the cost of the places for performing exercises.²⁰

The second instrument used and analyzed was the WHOQOL (Bref), which measured the Quality of Life of groups studied. The scores were grouped according to the domains of WHOQOL (Bref) and general issues. According to the scores obtained for the conversion of raw scores in transformed scores, using the transforming scale of 0-100, as the WHOQOL-Bref manual.²¹ From the transformation, we calculated the average scores of the domains and the higher the score, the better the quality of life.

The domain that obtained a higher score was the Social Relations Domain. As the standard deviation was relatively high (in relation to the maximum and minimum score), we note that the group has no such homogeneous answers. The closest domain for the presence of similar responses was the Environment Domain (SD= 14.30). The score variation of the Psychological and Social Relations Domains was quantitatively next (SD= 16.82 and SD= 16.08, respectively). The major discrepancy of deviation in responses was found in the Physical Domain (SD= 22.03).

It was noted in this study that among women there is a far greater standard deviation of responses than among men, that is, there is greater homogeneity among male responses than among female responses, as Figure 1.

WHOQOL (Bref) - Group G1				
	Physical Domain	Psychological Domain	Social Relations Domain	nvironment Domain
N	25	25	25	25
Mean Score	57,44	64,08	66,28	58,84
Maximum score	94	94	94	81
Minimum score	19	31	25	31
Median	63	69	69	56
Standard Deviation	22,03	16,82	16,08	14,30
Standard deviation of Female Population	22,82	17,66	17,38	15,00
Standard deviation of Male Population	19,92	16,25	11,84	13,42
Percentile 0.25	38	56	69	50
Percentile 0.50	63	69	69	56
Percentile 0.75	75	75	75	75

Figure 1. Scores of WHOQOL (Bref) domains of type 2 diabetic individuals, participants in health educational work, grouped in G1, HUAP. Niterói, October 2011 to March 2012.

Regarding percentile, it was noted that the 0.50 percentile is above average scores, which means that most of the participants in the educational group people is above overall average of score of the population and that a larger number of individuals had more positive responses than negative.

In Figure 2, there are many data about the scores of the WHOQOL (Bref) domains, demonstrating the level of quality of life of the G2 population, i.e., the group which is not monitored by the nursing consultation clinic.

From the table, some considerations can be raised about this group.

The domain that had a higher score was the Psychological Domain. The standard deviation was relatively lower compared to G1 scores, it was noted that G2 has more homogeneous answers. The closest domain regarding the presence of close responses was the Environment Domain (SD= 9.75). The major discrepancy of deviation in responses was found in the Physical Domain (SD= 16.01).

WHOQOL (Bref) - Group G2				
	Physical Domain	Psychological Domain	Social Relations Domain	Environment Domain
N	25	25	25	25
Mean Score	56,6	65,56	64,04	57,96
Maximum score	75	81	81	81
Minimum score	19	25	25	38
Median	63	69	69	63
Standard Deviation	16,01	13,65	14,72	9,75
Standard deviation of Female Population	15,68	15,82	15,11	10,13
Standard deviation of Male Population	17,21	9,11	15,75	10,07
Percentile 0.25	50	56	56	50
Percentile 0.50	63	69	69	63
Percentile 0.75	69	75	75	63

Figure 2. Scores of WHOQOL (Bref) domains of type 2 diabetic individuals, not participants in health education work, grouped in G2, HUAP. Niterói, October 2011 to March 2012.

When we analyzed the same deviation, but separating the female population of the male population, it was noted that among women

there is a higher standard deviation of responses in Psychological and Environment domains than among men, and a higher

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deviation among men in the Physical and Social Relations domains than among women.

The highest score in Group G1 was the Social Relations Domain (mean 66.28), while in G2 the highest score was in the Psychological Domain (mean 65.56). Overall, G1 group had higher scores in most domains. This shows that for G1, the social relations aspects are contributing more positively to the QOL of respondents, while the psychological issues had increased emphasis on QoL of G2.

Regarding G1 having higher score in the Social Relations Domain, it is clear that participation in the "Group of Diabetic Patients" contributes to enhance not only the patients' knowledge about their disease but also for building ties with people who share the same problem and with health professionals involved in the process, favoring the coping of common conflicts and strengthening self-esteem and self-care in these subjects.

In G2, the highest score was in the Psychological Domain. We believe that the fact that only those individuals who had some visible, physical or psychological aggravating, were sent to the nursing visits, that is, the group that took part only of endocrinology consultations had not visibly such aggravating, which contributed for them to have a highest score in this area.

Thus, although individuals with DM may have a loss as to their quality of life, we note that health education enters in this perspective as a therapeutic measure that enables improvement in QOL. The educational activity is an essential element present during the nursing consultation and, therefore, during the preparation of the research, there was an expectation regarding the quality of life results of the group that participates in nursing consultations and endocrinology consultations of HUAP/UFF and the group that participates only of endocrinology consultations to analyze whether the nursing consultation developed in the clinic contributes to this QOL is beneficial.

Overall, the group that participates in the nursing consultation (G1 Group) had higher scores in three of the four domains present in the WHOQOL-Bref (Physical Domain, Social Relations Domain and Environment Domain), reaching an average difference of scores of 1,36 for each domain between the two groups (G1 and G2).

In G1, the mean score was 57.44, maximum of 94 and minimum of 19, the standard deviation of the answers was relatively high, reaching 22.03 and higher among women (SD=

22.82) than among men (SD= 19.92). The percentile 0.25 shows that 25% of people are with score below 38 and the median shows that half the population is above the overall average score. Meanwhile, in G2, the mean score was 56.60, with a maximum 75 and a minimum of 19, the standard deviation was lower than in G1, 16.01, and higher among men (SD= 17, 21) than among women (SD= 15.68). The percentile 0.25 shows that 25% of people have score below 50. The median is the same as the G1.

It is known that some of the nonspecific symptoms of DM include fatigue, weakness, lethargy, pain, anxiety, and chronic complications such as neuropathy, retinopathy and cardiovascular disease and chronic renal failure. This pathology is still responsible for a large number of hospitalizations, amputations and blindness. Diabetes also is additional burden to society due to lost productivity at work, early retirement and premature mortality. As this is a progressive disease, almost all patients require pharmacological treatment. All these points raised have an intimate relationship with the physical domain, and are responsible for injury of this domain.

The psychological domain has facets about positive feelings, thinking, learning, memory, concentration, self-esteem, body image, appearance, negative feelings, spirituality, religion and personal beliefs.

In G1, the mean score was 64.08, maximum of 94 and minimum of 31, the standard deviation was 16.83 and higher among women (SD= 17.66) than among men (SD= 6.25). The percentile 0.25 shows that 25% of people have score below 56 and the median (69) shows that half the population is above the overall average score. Meanwhile, in G2, the mean score was 65.56, with a maximum 81 and a minimum of 25, the standard deviation was lower than in G1, 13.65 and lower among men (SD= 9.11) than among women (SD= 15.82). The percentile 0.25 shows that 25% of people have score below 56. The median is the same as the G1.

Participation in educational groups helps participants deepen their knowledge about diabetes mellitus and how best to deal with the disease.¹⁶ The possibility of individuals share with other people with similar problems leads them to realize they are not alone suffering or facing difficulties and it makes them grow individually. Working with groups, thus, can help people to relate or restore ties lost in an increasingly individualistic society. Through the intersubjective interaction, people learn from each other to face the

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conflicts of everyday life, strengthening self-esteem and expanding other realities in their world.²²

The social relations domain explores facets of personal relationships, social support and sexual activity. Diabetes is an additional burden to society, many physical and emotional factors can alter their social relationships with friends, family and colleagues.

In G1, the mean score was 66.28, maximum of 94 and minimum of 25, the standard deviation of the responses was 16.08 and higher among women (SD= 17.38) than among men (SD= 11 , 84). The percentile 0.25 shows that 25% of people have score below 69 and the median (69) shows that half of the population is above the overall average score. Meanwhile, in G2, the mean score was 64.04, with a maximum 81 and a minimum of 25, the standard deviation was lower than in G1, 14.72 and higher among men (SD= 15.75) than among women (SD= 15.11). The percentile 0.25 shows that 25% of people are with score below 56. The median is the same as the G1.

There is a substantial amount of physical and psychological benefits of social support and that subjects with social support cope better, psychologically, with stress-inducing events; recover better and reduces the risk of mortality for specific diseases such as diabetes. Diabetics who are beneficiaries of social support have a more satisfactory quality of life.²³

Social support, especially represented by family, demonstrates a key role, helping in carrying out some self-care activities, such as monitoring of blood glucose, care for the feet and the preparation of the medication. The lack of understanding from family and friends to the adherence to diet and exercise was mentioned by participants as the least positive aspect of social support.¹⁹

In relation to sexual activity, impotence (the inability of the penis stiffens and sustains an erection adequate for penetration) occurs more frequently in men with diabetes than in other men the same age, this is due to diabetic neuropathy.⁵

Sexual dysfunction affects 40-50% of diabetics with 10 years of evolution, but it can also manifest itself soon after diagnosis.²⁴ This is a problem that affects the quality of life and the relationships established, but that can take advantage of effective interventions in its resolution, either psychologically or pharmacological level. It is essential to create a therapeutic environment that provides an open dialogue, free of value judgments, allowing the diabetic patient and the health

professional to discuss this with ease and find the most suitable solution for each case.

The last domain is regarding environment and encompasses the following aspects: physical security and protection, home environment, financial resources, health and social care, opportunities to acquire new information and skills, participation and recreation/leisure opportunities, physical environment (pollution/noise/traffic/climate) and transportation. This domain is very important in the perception of quality of life. Positive results in this area indicate that quality of life is appropriate. There is a direct relationship between QOL and environmental conditions that allow biological, social and psychological behaviors.

In G1, the mean score was 58.84, maximum of 81 and minimum of 31, the standard deviation of the response was 14.30 and higher among women (SD= 15.00) than among men (SD= 13 , 42). The percentile 0.25 shows that 25% of people have score below 50 and the median (56) shows that half of the population is below the overall average score. Meanwhile, in G2, the mean score was 57.96, with a maximum 81 and a minimum of 38, the standard deviation was lower than in G1, 9.75 and higher among women (SD= 10.13) than among men (SD= 10.07). The percentile 0.25 shows that 25% of people have score below 50. The median (63) is greater than the G1.

Regarding the two general questions, the first talks about "how you rate your quality of life." In G1, the prevailing response was that QOL was considered good (56%) and in the G2 Group, QOL was neither Bad nor Good (60%). The second general question asks about "how satisfied you are with your health." Both the first group (48%) and the second (44%) said they were Dissatisfied. The positive self-perception of health enables greater involvement of individuals in relation to the treatment and control of disease. The data collected indicate that there is a need for studies to identify the factors responsible for the negative perception of the health condition.

CONCLUSION

It was evident that the group participating in nursing consultations undertaken in outpatient HUAP/UFF has larger knowledge in relation to these aspects, which confirms the importance of the implementation and development of educational practices.

Literature states that health education is inserted in a framework of knowledge that can provide society with a better understanding of the relationship between

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living conditions and work and between health and disease.

Health education to people living with diabetes mellitus is relevant to their treatment because of the contribution it exerts on information, reflection and criticism, not limited to issues related to pathology, but expanding to more comprehensive and contextual issues, thus favoring the improvement of this Quality of Life.

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Corresponding Address

Geilsa Soraia Cavalcanti Valente
Escola de Enfermagem Aurora de Afonso
Costa/UFF
Rua Dr. Celestino, 74
Bairro Centro
CEP 24020-091 – Niterói (RJ), Brazil

English/Portuguese

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