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RESEARCH

FACILITIES AND DIFFICULTIES IN THE CESSATION OF TOBACCO IN PEOPLE WITH TYPE 2 DIABETES *MELLITUS*

ASPECTOS FACILITADORES E DIFICULTADORES NO ABANDONO DO TABAGISMO ENTRE PESSOAS COM DIABETES MELLITUS TIPO 2

ASPECTOS FACILITADORES Y DIFICULTADORES EN EL ABANDONO DEL TABAQUISMO ENTRE PERSONAS CON DIABETES MELLITUS TIPO 2

Ane Caroline Rodrigues Miranda Lucena [1]
Viviane Cazetta de Lima Vieira [1]
Fabiana Cristina Vidigal [1]
Sonia Silva Marcon [2]
Mayckel da Silva Barreto [1]

[1] Faculdade de Filosofia Ciências e Letras de Mandaguari – FAFIMAN, Departamento de Enfermagem. Mandaguari, PR – Brazil.
[2] Universidade Estadual de Maringá – UEM, Departamento de Enfermagem. Maringá, PR – Brazil.

Corresponding author: Ane Caroline Rodrigues Miranda Lucena
E-mail: anny-kerolin@hotmail.com

Author's Contribuitions:
Conceptualization: Mayckel S. Barreto; ***Data Collection:*** Ane C. R. M. Lucena, Mayckel S. Barreto; ***Investigation:*** Ane C. R. M. Lucena, Mayckel S. Barreto; ***Methodology:*** Mayckel S. Barreto; ***Project Management:*** Ane C. R.M. Lucena, Mayckel S. Barreto; ***Statistical Analysis:*** Ane C. R. M. Lucena, Viviane C. L. Vieira, Fabiana C. Vidigal, Sonia S. Marcon, Mayckel S. Barreto; ***Supervision:*** Mayckel S. Barreto; ***Validation:*** Sonia S. Marcon, Mayckel S. Barreto; ***Visualization:*** Ane C. R. M. Lucena; ***Writing – Original Draft Preparation***: Mayckel S. Barreto; ***Writing – Review and editing:*** Ane C. R. M. Lucena, Viviane C. L. Vieira, Fabiana C. Vidigal, Sonia S. Marcon, Mayckel S. Barreto.

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ABSTRACT

Objective: to understand the behaviors and the perceptions of the smoker and former smoker patients with type 2 diabetes *mellitus* about smoking. **Methodology:** this is a descriptive study with a qualitative approach, carried out in a municipality in the northwest of *Paraná*. There were 23 patients with type 2 diabetes *mellitus* participating in the study (13 smokers and 10 former smokers). Data collection took place between January and March 2017 through home interviews. Content analysis as thematic modality was used as an analytical methodological reference. **Results:** to have a positive perception about the cessation of the addiction; to have respiratory diseases and/or aggravations of diabetes *mellitus*; to be afraid of suffering from complications in the future, and to receive professional and family supports positively influenced the cessation of smoking. However, the ambiguous relationship of dominance and dependence on tobacco, the recognition that smoking is not harmful to people with diabetes *mellitus*, and the lack of family support have hindered this cessation. **Conclusion:** health professionals need to develop intervention strategies that welcome smokers and promote the acquisition of more knowledge about tobacco malefactions for type 2 diabetes *mellitus*, and the inclusion of families in this process seems timely.

Keywords: Smoking; Abandonment of Tobacco Use; Diabetes *Mellitus*; Nursing.

RESUMO

Objetivo: *apreender comportamentos e percepções de pacientes com diabetes mellitus tipo 2, tabagistas e ex-tabagistas sobre o tabagismo.* ***Metodologia:*** *estudo descritivo, de abordagem qualitativa, realizado em um município do noroeste do Paraná. Participaram 23 pacientes com diabetes mellitus tipo 2 (13 tabagistas e 10 ex-tabagistas). A coleta de dados ocorreu entre janeiro e março de 2017 por meio de entrevistas domiciliares. A análise de conteúdo, modalidade temática, foi empregada como referencial metodológico analítico.* ***Resultados:*** *identificou-se que ter percepção positiva sobre o abandono do vício; apresentar doenças respiratórias e/ou agravos do diabetes mellitus; ter receio de sofrer com complicações no futuro; e receber apoio profissional e familiar influenciava positivamente para a cessação do tabagismo. Contudo, a ambígua relação de domínio e dependência sobre o tabaco; o reconhecimento de que o tabagismo não é prejudicial às pessoas com diabetes mellitus; e a ausência de apoio familiar dificultavam o abandono.* ***Conclusão:*** *profissionais de saúde necessitam elaborar estratégias de intervenção que acolham os tabagistas e favoreçam a aquisição de mais conhecimentos sobre os malefícios do tabaco para o diabetes mellitus tipo 2, sendo que a inclusão das famílias nesse processo parece oportuna.*

Palavras-chave: *Tabagismo; Abandono do Uso de Tabaco; Diabetes Mellitus; Enfermagem.*

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RESUMEN

Objetivo: *captar comportamientos y percepciones de pacientes con diabetes mellitus tipo 2, fumadores y ex-fumadores sobre el tabaquismo.* ***Metodología:*** *estudio descriptivo, de enfoque cualitativo, realizado en un municipio del noroeste de Paraná. Participaron 23 pacientes con diabetes mellitus tipo 2 (13 fumadores y 10 ex-fumadores). La recogida de datos se efectuó entre enero y marzo de 2017 por medio de entrevistas domiciliarias. El análisis de contenido temático sirvió de referente metodológico analítico.* ***Resultados y discusión:*** *se identificó que el tener una percepción positiva sobre el abandono del vicio, presentar enfermedades respiratorias y/o enfermedades de la diabetes mellitus, el temor de sufrir con complicaciones en el futuro y recibir apoyo profesional y familiar eran positivas para parar de fumar. Sin embargo, la relación ambigua de dominio y dependencia sobre el tabaco, el reconocimiento de que el tabaquismo no es perjudicial para las personas con diabetes mellitus y la ausencia de apoyo familiar dificultaban el abandono.* ***Conclusión:*** *los profesionales de salud deben elaborar estrategias de intervención que incluyan a los fumadores y favorezcan la adquisición de más conocimiento sobre los males del tabaco para la diabetes mellitus tipo 2. Asimismo, sería sumamente oportuno incluir a la familia en este proceso.*

Palabras clave: *Tabaquismo; Abandono del Uso del Tabaco; Diabetes Mellitus; Enfermería.*

INTRODUCTION

Diabetes *mellitus* (DM) is a syndrome characterized by metabolic changes and hyperglycemia due to the absolute or relative deficiency in insulin secretion and/or reduction of its biological efficacy,[1] affecting approximately 8% of the Brazilian population.[2] In the group of chronic diseases, type 2 DM (DM2) is one of the 10 main causes of death and it is estimated that its share in the global burden of diseases by 2030 will increase.[3] Therefore, the disease and its complications represent a worldwide epidemic and a constant challenge for managers and health professionals, especially those in primary care.

On the other hand, when DM2 is associated with active smoking, the chances of developing complications increase. Smoking is the leading cause of preventable disease and death around the world.[4] Estimates are that 8.4 million people will die per year from 2020 and 10 million people will die by 2030 as a result of smoking.[5] Therefore, smoking is a global public health problem and its negative consequences have unfavorable economic implications.[4]

Studies have shown that smokers have a poorer quality of life on social, psychological and physical aspects.[5,6] As previously mentioned, the evidence demonstrates that patients with DM2 and who are smokers are more likely to suffer from complications of the disease, such as kidney problems[1] and the metabolic syndrome.[7] This is because the cells of these people have more difficulty absorbing glucose, provoking more resistance to insulin.[8] Thus, in addition to recommendations related to physical activity, diet, and medication, it is necessary that smokers DM2 patients be continuously sensitized and encouraged to stop smoking.

The smoking abandonment process will be successful if professionals anchor their combat actions in the National Tobacco Control Program and other Cancer Risk Factors[9] and consider the patients' wishes and demands, as well as the perspective and family support. In this sense, a study conducted in the United States showed that smoking was considerably reduced in smokers who received intervention in which support and family and friendship relationships were considered.[10] Another investigation in Hong Kong revealed that former smokers DM2 recognized that there was an association between the disease and smoking, they had a positive opinion about smoking abandonment and received more family support throughout the process of abandonment of addiction.[11]

Thus, this study is justified by the fact that DM2 associated with smoking is a relevant public health problem. Also, the comparison between the perceptions and experiences of the smoker and former smoker patients with DM2 on the tobacco abandonment process is still a gap to be filled. Therefore, to develop effective intervention strategies that favor smoking abandonment, it is necessary to first consider the perceptions and behaviors of smokers and former smokers about tobacco use, as well as their understanding of what factors may influence the abandonment process. Thus, the objective of this study was to apprehend behaviors and perceptions of the smoker and former smoker patients with DM2 about smoking.

METHODOLOGY

This is a descriptive study of a qualitative approach carried out with 23 people with T2DM in a city in the northwest of *Paraná*, assisted in basic care. To identify the study participants the researchers attended the hypertensive and diabetic (hypermedia) groups developed in the six basic health units (BHU) of the municipality. The inclusion criteria were patients 18 years old or older, presenting DM2 (since this disease is directly related to the lifestyles of individuals, whereas type 1 DM is characterized as an autoimmune disease, usually juvenile[3]) and active smokers or former smokers. On the other hand, based on the authors' experience in the care of patients with T2DM in the primary care setting, the following exclusion criteria were selected: to have started smoking after DM diagnosis, to have other addictions to drugs of abuse, and to have quit smoking for less than one year. Such aspects would influence the quality of participants' responses and these profiles did not meet the objectives proposed by the study.

After the first contact with the possible participants in the BHU, home visits were scheduled in a proper time for the in-

terviewees and researchers. Data collection took place between January and March 2017, through an interview with a semi-structured script consisting of two parts. The first part consisted of the socio-demographic characterization of the participants, containing questions related to age, gender, school level, marital status, family income, health-disease profile, and smoking-related habits. The second part was composed of the following guiding questions: "How did you stop smoking? Tell me your experience"; or "what does (smoking) mean to you? Tell me about it." The search for information occurred until the data began to become repetitive and the purpose of the survey was answered.

The interviews were audio-taped and then transcribed in full. Content analysis with a thematic modality was used as a methodological reference, respecting the pre-analysis stages; exploitation of the material; treatment and inference of the data.[12] In the first stage, a brief reading of each interview was carried out, and then the material exploration was done with a thorough and exhaustive reading of all the content, highlighting and grouping together the main emerging issues by colors. Then, the codification of the messages was performed, in which the sense nuclei were apprehended and grouped according to the thematic categories. After the categorization was finished, the inference was made from the data obtained. In this stage, not only the context of the language but also the condition of the sender, its meanings and pertinent literature were analyzed.

Thus, the following thematic categories were identified from the exhaustive data analysis: a) strengths: reasons that drive the abandonment of smoking; b) weaknesses: reasons that prevent smoking abandonment.

The study was developed in accordance with the guidelines of Resolution 466/12 of the *Conselho Nacional de Saúde* and approved by the *Comitê de Ética em Pesquisa com Seres Humanos* of the signatory institution (Opinion: 2.451.030). The anonymity of the participants was respected identifying them with the letters W of woman and M of man, followed by the number of the order of the interview, their age and their status as a smoker or former smoker. For example M1, 55 years old, ex-smoker.

RESULTS

Thirteen of the 23 participants were smokers and 10 were former smokers. The age of the smokers ranged from 47 to 80 years old, nine were male, 11 were married, seven had up to eight years of school level and 10 had a per capita family income between one and two minimum wages; 10 of them lived with DM2 between five and 10 years and 11 smoked for 10-15 years. After the diagnosis of DM2, all of them reported having tried to quit smoking at least once, and one respondent revealed five attempts to quit. The time without tobacco during the abandonment attempts ranged from two days to six months.

The age of the 10 former smokers ranged from 42 to 65 years, six were female, eight were up to eight years of school level, seven had *per capita* family income between one and two minimum wages and nine were married. Seven of them had been diagnosed with DM2 for more than 10 years, seven smoked for 10 to 15 years and three others smoked between 15 and 30 years. The time of abandonment of tobacco use varied from two to 12 years.

Strengths: reasons that drive smoking abandonment

In those interviewed who were able to stop using tobacco, there was a positive perception of "quitting smoking". They also believed that the abandonment of smoking could help control DM.

> *I knew smoking was not good* [...] *I believed that quitting smoking would be good and it helped me to control the disease* (M4, 44, former smoker).

> *I stopped because I started to understand that diabetes would only aggravate if I did not take care of myself. It was a matter of food, walking, beer and cigarettes, I had to change a lot* (W6, 62 years old, former smoker).

However, this process of positive perception about smoking abandonment did not occur immediately after the diagnosis of DM. In many cases, this understanding arose with the advancement of time, from the daily co-existence with the chronic disease and even with respiratory complications and other health problems.

> *It's been a long time since I discovered diabetes, but I just stopped because I got sick, I had a stroke, I almost died, I stopped, I did not have any way to continue* (W3, 65 years old, former smoker).

> *The doctor told me that if I did not stop smoking, I would have to cut my leg, and it was said and done! Since I did not obey and smoked I had to cut a piece of my right leg. It was only then that I decided to stop smoking* (M1, 55 years old, former smoker).

In addition to the illness or problem caused by smoking, the interviewees also reported that fears related to the future, such as not being able to live with the family in the face of clinical worsening, have led to the abandonment of smoking.

> *I got very sick, I had recurrent pneumonia, I spit blood, the diabetes was all decompensated. At the time I*

> *had four small children, and the doctor asked me: "Do you intend to raise your children?" Hearing that, it hurt. But I did not put another cigarette in my mouth* (W1, 42 years old, former smoker).

> *It was difficult, but I stopped because I was afraid of what could happen to me* (M3, 49 years old, former smoker).

It was also possible to verify that the guidelines on the importance of smoking abandonment for the control of DM by health professionals and the support from relatives were considered as strengths for the abandonment of tobacco use.

> *The health care center professionals helped me a lot. They gave me the strength to stop smoking, they explained that diabetes has no cure, but if I quit smoking would improve. Slowly I stopped* (W2, 49 years old, former smoker).

> *My wife supported me a lot at the time I stopped smoking, she always supported me, she said that it was bad, that I would not see our children grow up, which helped* (M4, 44, former smoker).

After smoking abandonment, new challenges were imposed on people with DM. It was highlighted in the discourse that the psychological addiction linked to smoking and the weight gain after the abandonment of its use have become challenging issues for the control of DM and for the maintenance of the decision not to smoke. However, in these situations, professional and family support, once again, proved to be relevant.

> *It was quite difficult to leave the cigarette. In fact, the trickiest was later. I started to get very fat, it seemed that the cigarette inhibited the appetite, the desire to eat. I stopped smoking and gained a lot of weight. This disrupted diabetes even more, but the endocrinologist said it was normal at first and gave me a new diet* (W5, 51 years old, ex-smoker).

> *One challenge that I have faced and I am still facing is the constant desire to smoke, especially when I see someone near me smoking, I have to hold myself, it is one day at a time. If someone at home arrives smoking, the [family] already says soon to put it away* (W6, 62 years old, ex-smoker).

In this category, there was a positive perception about the act of quitting smoking; respiratory diseases and/or DM2 aggravations; the fear of suffering from complications in the future; and the support of professionals and family members were the main factors that influenced positively the abandonment of tobacco use by people with T2DM.

Fragilities: reasons that prevent smoking abandonment

In those DM2 patients interviewed and who maintained their smoking habits at the time of the interview, several reasons could be verified that prevented the abandonment of the addiction. It is possible to emphasize that the tobacco awoke pleasant sensations from the distance of the daily problems and the routine stress, in other words, many of them understood the tobacco is like "relief valve". On the other hand, they recognized that the fact that they could not give up smoking caused a feeling of sadness, failure, and domination by addiction.

> *I do not stop smoking, because that's when we forget the problems* (M5, 49 years old, smoker).

> *Today I have a lot of worry in my head, there is the time that I see that cigarette helps to get around stress* (W9, 75 years old, smoker).

> *I've tried several times [quit smoking], but I could not, it's very difficult. When I go into a relapse, I see how weak I am. This last time I tried to stop and I did not even get into depression* (M8, 48 years old, smoker).

Sometimes the difficulty to stop smoking was related to the conflicting relationship that the interviewees established with tobacco. Some perceived mastery over smoking and they would abandon it when they wished, even though they had already experienced failure in previous attempts to quit. On the other hand, others recognized that smoking was something they could not cope with because they perceived that smoking triggered intense psychological addiction.

> *What keeps me from quitting smoking is stress, but also a little because I do not want to if I really wanted to stop, but I do not want to stop, smoking calms me down!* (W7, 47 years old, smoker).

> *Nothing stops me from quitting, if I say that I want to stop I will stop, but I do not feel like stopping* (M7, 52, smoker).

> *I think I let my cigarette dominate me, instead of dominating it, it dominates me, it's me being nervous, the first thing I do, I go running and get one* (M10, 59 years old, smoker).

The absence of family support cooperated so the person with T2DM could not stop smoking. For example, one respondent reported that staying at home alone make him a desire to keep smoking and another patient said that there are many smokers in his family, so quitting the habit became even more challenging.

> *A little know what this is, is to be alone, I have no family, I have nothing. So I stay in the house with no one to talk, I go outside and smoke a cigarette* (M6, 50, smoker).

> *When you are in a family where everyone smokes, it is very difficult for you to quit the cigarette alone* (M13, 60, smoker).

Some interviewees revealed that they were aware of the harmful effects of smoking on their health. However, when associating with DM2, they perceived that poor eating habits, non-adherence to drug treatment and sedentary lifestyle were more harmful to health maintenance than smoking. Thus, it was possible to identify the occurrence of misunderstandings about the association between DM2 and smoking and lack of perception about the perceived dangers of non-smoking abandonment.

> *I've tried to quit, but I think, "Of course cigarettes are bad, but for me, what's worse, for example, for people with diabetes, is eating." I ate everything a lot of pasta, fat meat I liked very much. I think it makes me sicker, so I stopped* (M12, 49 years old, smoker).

> *For those who have diabetes, it is not so much a cigarette issue, what helps even to control the disease is to take medications, handle food and sweets and exercise* (W10, 58, smoker).

In this category, the smoker people with DM2 cite different clashes that prevent or, at least, make it difficult to quit smoking. The ambiguous relationship of dominance and dependence on tobacco; the recognition that non-adherence to drug and non-drug treatment is more harmful to the person with T2D, compared to smoking; and the absence of family members to support the decision to quit were highlighted.

DISCUSSION

The results of this study allowed the identification of different aspects that cooperated, or not, for the abandonment of smoking among people with T2DM. These aspects can help health professionals to design effective intervention strategies to accommodate smoker patients DM2, to strengthen and to reduce the limiters/weaknesses experienced in the process of seeking abandonment of tobacco use.

The strengths that favored the abandonment of tobacco use was the positive perception about the abandonment of addiction, which can often be directly related to the development of health complications from its use. This is because, when experiencing complications, the person comes to realize that abandonment of tobacco use is necessary. Thus, despite the difficulties found by smoker patients with DM2 to quit smoking, they reported a personal motivation to quit the habit, especially characterized by the understanding of the harm caused by the use of tobacco for health.

Similar findings were found in research in the Netherlands. The study identified that among the reasons for smokers facing the tobacco abandonment process were concerns about health problems associated with their use and individual motivation.13 In this sense, it is reiterated that abandonment of smoking depends on the active participation of the smoker and their perception that abandoning the addiction is important/necessary, whose main motivation, on several occasions, is related to some underlying disease.[14]

Fear of the future, more specifically of suffering from complications of DM2, such as amputations, and possibly not experiencing child rearing also encouraged respondents to give up smoking. Expectations for the future are responsible for making sense of life.[15] On the other hand, health professionals need to understand that as chronic diseases progress, the subject may lose the prospect of the future and that makes him stop practicing self-care and perform actions that are known to worsen your clinical condition. For example, a study carried out in São Paulo, Brazil, with 71 patients with the oral cavity, pharynx and larynx carcinoma showed that patients with advanced neoplasia smoked more cigarettes per day than patients with initial neoplasia.[16]

These nuances need to be considered when working with people in support groups for smoking control, including another aspect that deserves to be highlighted, because helping interviewees to quit smoking is related to the professionals' guidelines. The encouragement was given by skilled and welcoming health care providers to smokers through information about the benefits of quitting smoking, while reiterating the complications of smoking for DM2 may be a strategy to motivate them to attempt abandonment of habit.[17]

In this sense, several scholars[11,14,18,19] strongly recommend that in the approaches and campaigns aimed at smokers, the use of the argument that abandoning tobacco will bring health benefits is used. Such disclosure should be reinforced, even after the onset of illness or injury resulting from smoking, since the health benefits perceived by former smokers constitute motivators for the maintenance of abstinence.[18]

However, it is necessary to consider the training and professional qualification of those who perform activities among the individuals who smoke. A study carried out in a city in the interior of *São Paulo*, Brazil, with 201 primary care nurses showed that their knowledge regarding smoking abandonment treatment was considered insufficient.[20] Thus, it is necessary to implement continuing education training and activities for nurses and other professionals regarding the treatment of smoking abandonment. Also, smoking abandonment therapy used for general groups may not work effectively for specific groups, such as patients with T2DM, with activities that are different and focused on the demands of the groups.[4]

It was also possible to identify in smokers and former smokers that family support was essential for the person with T2D to give up smoking and maintain that position in the face of the challenges imposed by abstinence. A study carried out with nine smokers in the city of *São Paulo* showed that the participants described the pressure exerted by family members as a strong justification for their attempts to quit smoking.[19] Research developed in Portugal found that the support provided by the spouse to the smoker to leave smoking was one of the best predictors of smoking abstinence.[21] In this sense, scientific evidence seems to emphasize the importance of family support for smoking abandonment and the maintenance of this decision.

However, although significant individuals, such as family and friends, can stimulate the attempt to stop smoking, and even should be considered in this process, health professionals who work with the smoker need to strengthen their motivation individual and intrinsic to succeed in this process of abandonment of addiction. This is because human action is conscious, intentional, endowed with purpose and is based on existential motives to be fulfilled and maintained over time.[18]

Among the aspects that made smoking abandonment difficult for the patients with T2DM interviewed, it was observed that, like other smokers, [15] tobacco acts as a "escape valve" and used to alleviate everyday tensions and stresses. A phenomenological study of nine smokers who had attempted to quit smoking identified that maintaining tobacco use is anchored in the anxiety generated by daily stress. Thus, tobacco is understood as pain relief to face the situations lived in the day today. This is what contributes most to the failure of attempts to stop smoking.[19]

In this sense, the interviewees showed a relationship of ambiguity with tobacco, in which some of them felt dominated, but also others are perceived impotent in front of it, mainly due to the psychological addiction and, therefore, they felt anxious or depressed. A study carried out with groups of smokers in the city of Rio de Janeiro, Brazil, pointed out that, in addition to chemical dependence, smokers reported their psychological dependence, expressed as they considered smoking as a companion for different moments of life.[22] Research already done in Cuiabá, Brazil, with 216 patients who sought smoking abandonment programs showed that low motivational level and high level of anxiety were associated with therapeutic failure.[23]

Smoking abandonment symptoms, especially anxiety, increased appetite, and weight gain, should be considered when smoking abandonment occurs – especially in patients with T2DM – as well as behaviors that configure psychological dependence.[18] Abandoning smoking is a difficult experience, since dependence encompasses a set of physiological, behavioral, cognitive and social phenomena, causing few people to successfully stop smoking in their first attempt.[15] Therefore, professional actions that stimulate continuity of smoking abandonment even after weight gain or relapse of smokers is essential because health care professionals show an interest in the subject and confidence in their choice to continue seeking to cease tobacco use.

Finally, it is highlighted that the lack of understanding about the risks of smoking with DM2 was one of the reasons that hinder the interviewees to quit smoking. The difficulty in successfully quitting smoking or even maintaining it is multifactorial and complex, and when other elements such as DM2 or other cardiovascular diseases are added, this difficulty seems to increase.[15] However, a study carried out in some European countries showed that 48% of the smokers followed up abandoned tobacco use, with a higher proportion of those who had suffered a stroke.[24]

Recent data from the National Health Survey showed that a diagnosis of DM significantly reduced the current "use of tobacco products", but mainly "frequent consumption of sweets".[25] Thus, as in the present study, patients with DM2 seem to believe that dietary restrictions are more strongly shaped as disease control actions than tobacco abandonment. In this sense, it is necessary that more incisive actions to combat smoking among patients with T2DM are carried out, favoring the understanding that tobacco use is also related to complications and diseases.

LIMITATIONS

This study has limitations because although DM2 has a growing incidence worldwide and smoking has global relevance, these findings cannot be generalized. This is because the data were collected in a specific group of smokers and former smokers living in a certain Brazilian municipality and assisted by the basic care, which limits the comparison of the results of this research. Also, the time of smoking abandonment (ranging from 2 to 12 years) may have influenced the responses of the interviewees, from the bias of forgetfulness.

FINAL CONSIDERATIONS

The results identified that people with T2DM who perceived positively the abandonment of the addiction; who already had diseases and/or aggravations of DM2 and/or tobacco use; who were afraid of suffering from complications in the future; and who received important support from health professionals and family members were able to stop smoking. The experience of an ambiguous relationship with tobacco; the recognition that smoking is not harmful to people with DM2; and the absence of family support made smoking abandonment difficult for those who maintained the habit even after the diagnosis of DM2.

These results alert health professionals to develop intervention strategies in the primary care setting that accommodate smoker patients with T2DM and who favor the acquisition of more knowledge about the harmful effects of tobacco on the disease from this population. Nevertheless, it seems that the inclusion of families in this process of smoking abandonment is timely and necessary to improve the patient's social and emotional support.

Smoking-associated DM2 is a worldwide public health problem, and smoking abandonment involves broader issues that need to be investigated from different spectra. Therefore, it is believed that more studies on this subject should be carried out to expand existing knowledge. In this sense, it is necessary to develop nursing interventions and/or multi-professional interventions to identify the best strategies for conducting specific smoking control groups for people with T2DM, as well as which individual needs, fears and perspectives of these people when participating in the intervention group.

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