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Degree of nicotine dependence in the smoking control program in Maringá: case study

Grado de dependencia a la nicotina en el programa de control de fumadores en Maringá: estudio de caso

Grau de dependência de nicotina no programa de controle do tabagismo em Maringá: estudo de caso

ABSTRACT

Objective: To identify nicotine dependence in users who did not stop smoking after the Smoking Control Program in a Gold Seal Health Unit. **Method:** Quantitative case study, carried out in a Gold Seal Basic Health Unit of Maringá-PR, in 2020. The participants were users who attended all sessions of the program in 2018 and 2019, who did not stop smoking after the intervention. For collection, we used an interview guided by a structured instrument. The data was organized by Microsoft Excel 2016 and descriptively simple statistics were analyzed. All ethical precepts were respected. **Results:** 17 people participated in the study, 64.7% female, 58.8% over 60 years of age, 35.3% married, 47.05% with low schooling and 29.4% with a high nicotine dependence. No significant differences were found in the association between demographic variables and the level of dependence. **Conclusion:** The high level of nicotine dependence in individuals who attend the program may help actions for smoking cessation favoring strategies to increase participation in smoking control groups.

DESCRIPTORS: Smoking Prevention; Smoking; Tobacco Use Disorder.

RESUMEN

Objetivo: Identificar la dependencia de la nicotina en usuarios que no han dejado de fumar después del Programa de Control del Tabaco en la unidad de salud Gold Seal. **Método:** Estudio de caso cuantitativo, realizado en la Unidad Básica de Salud Sello de Oro de Maringá-PR, en 2020. Participaron participantes que asistieron a todas las sesiones del programa en 2018 y 2019, y que no dejaron de fumar luego de la intervención. Para la recolección, utilizamos entrevistas guiadas por un instrumento estructurado. Los datos se organizaron utilizando Microsoft Excel 2016 y se analizaron estadísticas descriptivamente simples. Respetando todos los preceptos éticos. **Resultados:** Hubo 17 participantes, 64,7% mujeres, 58,8% mayores de 60 años, 35,3% casados, 47,05% con baja escolaridad y 29,4% con alta dependencia a la nicotina. No hubo significación asociativa entre las variables demográficas y el grado de dependencia. **Conclusión:** El alto grado de dependencia de la nicotina en los participantes del programa puede ayudar a las acciones para dejar de fumar al favorecer estrategias para ampliar la participación en los grupos de control del tabaco.

DESCRIPTORES: Prevención del tabaquismo; De fumar; Abandono del consumo de tabaco.

RESUMO

Objetivo: Identificar dependência nicotínica em usuários que não cessaram o tabagismo após o Programa de Controle do Tabagismo na unidade de saúde selo ouro. **Método:** Estudo de caso de natureza quantitativa, realizado na Unidade Básica de Saúde selo ouro de Maringá-PR, em 2020. Participaram usuários que compareceram em todas sessões do programa em 2018 e 2019, e que não cessaram o tabagismo após intervenção. Para coleta, utilizou-se entrevista guiada por instrumento estruturado. Organizou-se os dados pelo Microsoft Excel 2016 e analisou-se estatística descritivamente simples. Respeitando todos os preceitos éticos. **Resultados:** Houveram 17 participantes, 64,7% mulheres, 58,8% acima dos 60 anos, 35,3% casados, 47,05% baixa escolaridade e 29,4% com elevada dependência nicotínica. Não houve significância associativa entre variáveis demográficas e grau de dependência. **Conclusão:** O grau elevado de dependência nicotínica em participantes do programa pode auxiliar ações para cessação tabágica favorecendo estratégias para ampliar a participação nos grupos de controle tabágico.

DESCRIPTORES: Prevenção do Hábito de Fumar; Tabagismo; Abandono do Uso de Tabaco.

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INTRODUCTION

Tobacco is considered one of the main factors of mortality from preventable causes in the world, with about five million deaths annually.¹ Tobacco use had a considerable media influence, with great renowned artists encouraging adherence to cigarettes in the late 20th century. With the identification of the harm caused by the consumption of the product, laws were created that regulated the tobacco control program in order to suppress the growing demand for tobacco consumption.

In Brazil, in order to reduce the use of tobacco, Law n. 9294, of July 15th, 1996, with the suspension of commercial advertisements throughout the national territory that addressed cigarettes, cigars or any smoking product derived or not from tobacco.²

As a result, it was possible to visualize the reduction in smoking between 2006 and 2019, with a drop from 15,7% to 9,8% in consumption among people over 18 years of age.³ Furthermore, it was observed that attempts to stop smoking tobacco increased from 41,3% to 47,2%. In the analysis by Brazilian regions, the south and southeast regions concentrate the highest user rates, 16,1% and 15%, respectively. Regarding

gender, men are the biggest consumers (12,3%).²

The significant reduction is linked to the Treaty of the Framework Convention on Tobacco Control (FCTC), signed between several countries, in order to adopt new and rigorous political measures, under the supervision and control of the World Health Organization, which provides guidelines for implementation of programs to combat smoking.³

The implementation of the FCTC in Brazil enabled the integration of the National Tobacco Control Program (PNCT - Programa Nacional de Controle do Tabagismo) to the National Policy on Tobacco Control of the Brazilian State, which makes use of health professionals, specifically, Primary Health Care (PHC) at the front line according to the identification of local needs. In this way, it provided the municipalities with autonomy to implement weekly, fortnightly or monthly sessions, based on spontaneous demand, level of dependence, and number of participants integrated into the program.^{3,4}

Nicotine dependence is one of the main factors that hinder the process of smoking cessation or cessation, as this is a psychoactive substance that acts on the nervous system causing behavioral and emotional changes to the person,

resulting in a compulsion to use this substance.⁴ Thus, it is essential to the actions of the Tobacco Control Program (TCP), composed of an interdisciplinary team, carried out by the Primary Health Care (PHC) to coordinate and promote comprehensive care that enables smoking cessation, resulting in improved conditions for people's health.⁵

The levels of nicotine dependence can influence the degree of motivation and contemplation for the cessation process, as there is an association between a higher level of dependence and high relapse rates.⁶ To assess and identify the level of dependence, the Fagerstrom Test was developed, validated in Brazil by Carmo & Pueyo from an adaptation in 1991.⁶ This test consists of six scales with scores from 0 to 3 that form a total of 10 points, with scores from 0 to 2 being considered very low degree dependence; 3 to 4, low grade; 5, medium grade; 6 to 7, high; and 8 to 10, very high.⁷

Given these considerations, the following research question emerged: What is the degree of dependence on nicotine, according to the Fagerstrom Test, of people who have completed participation in the TCP groups of a Gold Seal Basic Health Unit (UBS - Unidade Básica de Saúde) and who have not ceased tobacco consumption?

Thus, the aim of this study was to identify the degree of nicotine dependence in users who did not stop smoking after participating in the TCP at a healthcare unit classified as having a gold seal.

METHOD

This is a case study of a quantitative nature, carried out in a UBS Seal Ouro, located in a medium-sized municipality located in the northwest of Paraná, which has a total of 34 UBS, two of which are classified and certified with the Seal Gold and eleven with bronze seal. One of the essential requirements for guaranteeing and maintaining the gold seal, according to the QualificaAPSUS project, are the results/actions for the community. However, in 2018 and 2019, only one UBS developed the TCP and in 2020, due to the COVID-19 pandemic, group activities were suspended.

The UBS inaugurated in 2013 serves a population of approximately six thousand inhabitants and contains a team from the Family Health Strategy (FHS) coordinated by a nurse and responsible for conducting the TCP. The health team of this unit works with interdisciplinarity, enabling the maintenance of the gold seal and effectiveness in the service to users registered in the coverage area.

The UBS, carries out the activities of the TCP, in which professionals from the areas of nursing, psychology, medicine and nutrition, offer cognitive-behavioral therapy and combined pharmacological treatment when necessary, conducted by two models of periodic sessions, lasting one hour each, which prioritize assistance in support groups for smoking cessation and/or individuals in cases of impossibility of offering the groups. These groups are organized into four weekly sessions and, for those who managed to quit smoking, one to two fortnightly abstinence maintenance sessions, aiming to understand each person's difficulties to remain without

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smoking and help them as needed. And, a monthly open session, to prevent relapse, until completing one year, with guidelines for strengthening the decision to remain abstinent.

Study participants were users who attended all TCP sessions in 2018 and 2019, and who did not stop smoking after the intervention. People under 18 years of age were excluded.

Data collection took place from March to May 2020 using the interview technique, carried out virtually due to the advance of the Covid-19 pandemic in Brazil and the orientations of social distancing. The interviews were guided by a structured instrument, subdivided into two sessions: the first was about socio-demographic characteristics; and the second, the application of the Fagerstrom Test to identify the participants' degree of dependence on tobacco, even after the TCP intervention.

For data organization, Microsoft Excel 2016 software was used. The analysis was through simple descriptive statistics, with relative and absolute frequency. Fisher's exact test, performed by the OpenEpi website and with a significance level of 5%, was used to verify the association between the degree of dependence and the socio-demographic conditions of the participants.

All ethical precepts were respected, according to resolutions 466/2012 and 510/2016 of the National Health Council, obtaining authorization from the Municipal Health Department and approval by COPEP (Permanent Committee on Ethics in Research with Human Beings) under opinion no. 2.278.656 of 09/15/2017 and CAAE: 57222016.1.0000.0104. All research participants signed or verbally agreed to the Informed Consent Form (ICF).

RESULTS

In 2018 and 2019, 18 people participated in the TCP. However, in 2018, even after the intervention process and the conclusion of the sessions, no par-

TABLE 1. Characterization and degree of dependence of TCP participants. Maringá, PR, 2021

VARIABLES	N	%
Sex		
Female	11	64,7
Male	6	35,3
Age		
30-39	1	5,9
40-49	5	29,4
50-59	1	5,9
60-69	10	58,8
Marital status		
Single	3	17,65
Married	6	35,3
Divorced	5	29,4
Widow (er)	3	17,65
Education		
Incomplete Elementary School	8	47,05
Complete Elementary School	3	17,65
Incomplete High School	1	5,9
Complete High School	5	29,4
Higher Education	0	0
Dependence Degree		
Very Low (0-2)	1	5,9
Low (3-4)	1	5,9
Medium (5)	6	35,3
High (6-7)	5	29,4
Very High (8-10)	4	23,5

Source: researchers' data, 2020

TABLE 2. Analysis of variables related to the degree of tobacco dependence, Maringá, 2020

VARIABLES PROFILE	DEPENDENCE ≤5	DEPENDENCE >5	TOTAL	P
Sex				
Female	5	6	11	0.99
Male	3	3	6	
Age				
<60 years	3	4	7	0.99
>60 years	5	5	10	
Marital Status				
Not married	5	5	10	0.99
Married	3	4	7	
Education				

participant adhered to the goals of the smoking cessation TCP. However, in 2019, one person reached the goal of smoking cessation even with a high degree of nicotine dependence.

Thus, the present study had a sample of 17 participants, being: 11 (64,7%) females; with a predominance of elderly (58,8%), married (35,3%), with low education (47,05%), degree of dependence on nicotine ranging from low to very high, with a predominance of medium and very high rates, according to Table 1.

In the degree of dependence, nicotine was evaluated according to the Fagerstrom Test, which scores the participants' answers in six objective questions. The first involves the time to light the first cigarette of the day, in which most refer that this occurs in the first five minutes of the day, right after waking up. When asked about the second question, referring to the difficulty of not smoking in collective environments, related to the laws in force in the three governmental spheres, the complaints expressing the difficulty in maintaining abstinence in these environments were unanimous.

The third question refers to the cigarette that presents the greatest satisfaction when consumed, with no consensus among the answers regarding the first or other cigarettes of the day. The fourth question refers to the number of cigarettes consumed in 24 hours, revealing alarming rates and correlated with the degree of dependence, as seven participants consume from 11 to 20 cigarettes/day, while five consume more than 21 cigarettes/day.

Regarding the period of the day when they consume the greatest number of cigarettes, the afternoon and night periods had higher rates. The last question is associated with the process of cessation with illness, in which the participants reported interrupting tobacco consumption when affected by some pathology, thus returning when the pathological condition improves or stabilizes.

Fisher's exact test, used to verify the association between demographic varia-

Below 10 years	5	6	11	0.75
Above 10 years	4	2	6	

Source: researchers' data, 2020

bles and the degree of dependence, did not show significant differences, either for gender, age or education. This fact may be associated with the low number of participants in the TCP, which makes the statistical evaluation difficult (type II error), as shown in Table 2.

DISCUSSION

Females have the greatest spontaneous demand for programs and services offered by health units, in search of better living and health conditions. The predominance of the female public in seeking out TCPs is associated with factors involved in the cessation process, such as the relationship with pleasure, relief from negative feelings, stressful situations and weight gain.⁸

According to the last census of the National Health Program (PNS) (2019), there is a higher rate of smokers between 40 and 59 years of age. However, the results of this study demonstrate that the elderly are the ones who most sought help from the TCP to stop their addiction.⁹ Three aspects are correlated to this search by people over 60 years of age: greater awareness of the harms of tobacco consumption; greater proximity to people with complications associated with the smoking habit; by request of family members and or indication of health professionals, this being the main motivation relevant to the success of the treatment.¹⁰

Married marital status was predominant, as the support between the couple can facilitate the cessation of tobacco use. There is also a great demand for TCP by divorced people, who have greater difficulty with cessation because they are in a more fragile situation.¹¹

A risk factor for tobacco consumption identified in the survey is low education, which may be due to the predominance of participants aged over 60 years, representing a significant propor-

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tion of Brazilians with low education or with less than one year of study. This relationship is important, as the initiation of tobacco consumption is associated with the peak of dropping out of studies between 17 and 19 years of age.⁶

In Brazil, people with a low level of education are 35 times more likely to be smokers when compared to people who have completed high school or higher education.⁶ A cohort study in Rio Grande do Sul, carried out with adolescents followed since birth, revealed that smoking was inversely associated with schooling.¹²

The degree of dependence presented in this research ranges from medium to very high, corroborating research carried out in a municipality close to the research, in which there was a prevalence of high rates of dependence on nicotine and a predominance of women in participation in TCP, seen that this public has greater difficulties in interrupting the use of nicotine without professional help, due to the association of chemical, psychological and behavioral dependence, in contrast to males who, even with a higher degree of dependence on nicotine, have success in cessation smoking after drug intervention.¹³

When analyzing the Fagerstrom test individually, the first three questions have a predictive value for the result, as they are related to the degree of satisfaction with consumption, associated with the neuronal receptors to which nicotine makes its binding, causing excessive release of dopamine and endorphins; when this stimulus dissipates, the receptors signal a need for a new stimulus (more nicotine), which in regular smokers has daily effects, with signs of withdrawal appearing in short periods when they are unable to smoke.^{2,14}

This habit is characterized as behavioral dependence by associating tobacco with daily routine habits, such as waking up. The greater the habit of smoking in the first hours of the day, the greater the patient's degree of dependence.¹⁰

In this study, there was no significant correlation between the degree of

dependence and the variables studied, which demonstrates difficulties in the smoking cessation process, as this phenomenon involves a broader look at its understanding and a detailing of the various individual approaches of the triad "patient, health unit and health conditions/determinants".^{15,16}

In a study in which mapping techniques were used in health in Basic Health Units, it showed that 59,1% of users of the Hiperdia Hypertensive and Diabetic Care Programs were smokers.¹⁷

CONCLUSION

Based on the present study, it can be concluded that the UBS presents a predominance of women, over 50 years old, with low education levels and a high degree of dependency, in the search for TCP, which makes the process of smoking cessation more difficult. This result indicates the need for strategies that help people and make smoking cessation possible, especially for those with a high degree of dependence.

The results indicated the need to strengthen the implementation of new strategies and goals to be achieved through the health units, aiming at a more expressive demand for participants, especially in units that aim to achieve or ensure the permanence of the gold seal.

Thus, further research should be encouraged, providing a multifactorial understanding of smoking, in order to enable smoking cessation and assist the UBS in conducting the TCP by interdisciplinary teams. ■

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