Prevalence of smoking and treatment of nicotine dependence: an integrative review

Objective: To identify available evidence in the literature on the epidemiological aspects, the approach to the smoker, and therapeutic of nicotine addiction in the population. Method: This is an integrative review carried out in the Health Virtual Library using the following combinations of keywords: "prevalence and smoking," "dependence and nicotine," "depression and smoking," and "smoking cessation." Results: The results from the sixteen selected articles pointed out: incomplete primary education, low income, early teenage smoking, and higher prevalence and recurrence among women than men. Conclusion: Smoking is more prevalent in women, and women have a higher incidence of relapse after treatment than men. The most widely used therapy was the use of drugs in conjunction with a psychosocial approach and/or cognitive behavioral method. It is necessary to train health professionals to understand the smoking habit as a public health problem to refer individuals to treatment.

Descriptors: Tobacco, Smoking, Nicotine, Dependence.

1 PhD in Fundamental Nursing USP/RS, Academic Advisor of the Post-graduation Program of Health and Development at the Central-West Region and of the Post-graduation course of Nursing at the Federal University of Mato Grosso do Sul.
2 PhD in Fundamental Nursing USP/RS, Academic Advisor of the Post-graduation Program of Health and Development at the Central-West Region and of the Post-graduation course of Nursing at the Federal University of Mato Grosso do Sul.
3 Midwife Nurse. PhD in Health and Development at the Central-West Region and Professor of the Course of Nursing at the Federal University of Mato Grosso do Sul.
4 PhD in Health and Development at the Central-West Region and Professor of the Course of Nursing at the Federal University of Mato Grosso do Sul.
5 PhD in Engineering of Bio-systems and Environment Science at the University of Tennessee/Knoxville/EUA. Academic advisor at the Post-graduation Program of Health and Development at the Central-West Region at the Federal University of Mato Grosso do Sul.
RESUMO

Objetivo: Identificar evidências disponíveis na literatura sobre os aspectos epidemiológicos, abordagem do tabagista e terapêutica da dependência da nicotina na população. Método: Trata-se de revisão integrativa realizada na Biblioteca Virtual de Saúde, com as seguintes associações de palavras-chave: "prevalência e tabagismo", "dependência e nicotina", "depresión e tabagismo" e "abandono do hábito de fumar". Resultados: Os resultados dos dezessete artigos selecionados apontaram: ensino fundamental incompleto, baixa renda, início do tabagismo na adolescência, maior prevalência e recidiva entre mulheres. Conclusão: O tabagismo é mais prevalente em mulheres e estas apresentam maior recidiva após o tratamento. A terapêutica mais utilizada foi o uso conjunto de fármacos com a abordagem psicossocial e/ou método cognitivo comportamental. É necessário capacitar os profissionais de saúde para compreender o tabagismo como problema de saúde pública e encaminhar o usuário para tratamento.

Descritores: Tabaco, Hábito de Fumar, Nicotina, Dependência.

RESUMEN

Objetivo: Identificar evidencias disponibles en la literatura sobre los aspectos epidemiológicos, abordaje del tabaquista y terapéutica de la dependencia de la nicotina en la población. Método: Se trata de una revisión integradora realizada en la Biblioteca Virtual de Salud, con las siguientes asociaciones de palabras-clave: "prevalencia y tabaquismo", "dependencia y nicotina", "depresión y tabaquismo", y "abandono del hábito de fumar". Resultados: Los resultados de los diecisiete artículos seleccionados señalaron: enseñanza primaria incompleta, baja renta, inicio del tabaquismo en la adolescencia, mayor prevalencia y recurrencia entre mujeres. Conclusión: El tabaquismo es más frecuente entre mujeres y éstas presentan mayor recurrencia después del tratamiento. La terapéutica más utilizada fue el uso conjunto de fármacos con el abordaje psicosocial y/o método cognitivo comportamental. Es necesario capacitar a los profesionales de salud para comprender el tabaquismo como problema de salud pública y encaminar al usuario para tratamiento.

Descritores: Tabaco, Hábito de fumar, Nicotina, Dependencia.

INTRODUCTION

Smoking, the resulting harm of nicotine addiction, has become a public health problem in all countries. Nicotine causes a sense of pleasure and reward in the smoker by acting in the dopaminergic pathways; moreover, it stimulates the central nervous system (CNS) enhancing alertness. The smoker is exposed to about 4,720 toxic substances including nicotine.

The estimate of the World Health Organization is that the current prevalence of smokers in the world is one billion and three hundred thousand. Associated with a high morbidity and mortality, the disease is directly or indirectly linked to six million deaths per year; although smoking is considered the leading cause of preventable death in the world, about eight million deaths are estimated for 2030 being 80% of these in developing countries. Two hundred thousand deaths per year are estimated in Brazil.
RESULTS

A total of 8,625 articles were found in the first access to the online database using the keywords: "prevalence and smoking," "dependence and nicotine," "depression and smoking," and "smoking cessation." However, 3,374 presented complete texts.

Out of the articles found, 620 researched Profile, Prevalence, Nicotine Addiction, Smoking Cessation, and Approach to the Smoker. Of these, 16 articles were selected based on the inclusion criteria. Eighty percent of these analyzed studies were published between 2008 and 2010.

The types of studies were:
- Four review articles being one systematic review and three literature reviews;
- Nine analytical observational studies being three crosssectional, one prospective cohort study, one prospective, one retrospective; two follow-ups, one of prevalence trend;
- Two descriptive studies;
- One randomized clinical trial.

Chart 1 - Distribution and synthesis of articles selected for analysis according to the author(s), year of publication, title, journal, type of research, sample, site, and main conclusions

<table>
<thead>
<tr>
<th>Author(s), year, title, journal</th>
<th>Type of research</th>
<th>Sample and Place</th>
<th>Main Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almeida AF, Mussi FC. 200610</td>
<td>Exploratory descriptive study</td>
<td>n=102 Salvador BA</td>
<td>Out of 102 respondents, 10.8% were smokers with an average age of 18.2 years who started the habit in the childhood or puberty. Children and adolescents whose parents have the habit of smoking are more likely to develop the habit than children of parents who do not smoke or who had stopped smoking.</td>
</tr>
<tr>
<td>Santos JDP, Silveira DV, Oliveira DF. 201111</td>
<td>Systematic Review</td>
<td>n=186 Rio de Janeiro RJ</td>
<td>A more efficient approach involves knowing the smoker’s habits and beliefs. The planning of collective actions aiming at smoking cessation should be based on observed behavior to achieve improved results.</td>
</tr>
<tr>
<td>Rondina RC, Gorayeb R, Botelho C. 200712</td>
<td>Literature Review</td>
<td>n=53 Ribeirão Preto SP</td>
<td>Severe tobacco dependents show a greater predisposition to emotional disturbances. To assess the personality profile and presence of these changes at the beginning of treatment may prevent the nicotine withdrawal to exacerbate some symptoms.</td>
</tr>
<tr>
<td>Mazoni CG, Fernandes S, Pierozan PC, et al. 200813</td>
<td>Literature Review</td>
<td>n=220 Natal RN</td>
<td>The association between drugs doubles the chance of abstinence, and the psychosocial approach by telephone or face to face increases success rates.</td>
</tr>
<tr>
<td>Melo WV, Oliveira MS, Araújo RB, et al. 200814</td>
<td>Literature Review</td>
<td>n=39 Porto Alegre RS</td>
<td>The motivational interview does not present efficient results in serious smokers. It is suggested that the number of treatment sessions is increased or conducted in association with drugs.</td>
</tr>
<tr>
<td>Azevedo RCS, Higa CMH, Assumpção ISMA, et al. 200815</td>
<td>Follow-up</td>
<td>n=40 Campanha and region SP</td>
<td>They emphasized the importance of training the public network professionals to develop strategies to approach smokers.</td>
</tr>
<tr>
<td>Santos SR, Gonçalves MS, Studart FS, et al. 200816</td>
<td>Prospective Study</td>
<td>n=203 São Paulo SP</td>
<td>The knowledge on the clientele profile helps to identify factors already recognized as predictors of possible failure and that are often not researched.</td>
</tr>
</tbody>
</table>

(To be continued...)
<table>
<thead>
<tr>
<th>Author(s), year, title, journal</th>
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<th>Main Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuhnen M, Boing AF, Oliveira MC, et al. 2009</td>
<td>Cross-sectional based on the population</td>
<td>n = 2022 Lages, SC</td>
<td>The sample contained 20-59 years old adults of both genders. The smoking prevalence was 30.1%, almost twice the national average of 16.2% according to a survey by VIGITEL (telephone survey in 26 capitals and the FD)</td>
</tr>
<tr>
<td>Caram LMO, Ferrari R, Tanni SE, et al. 2009</td>
<td>Retrospective from 2003-2007</td>
<td>n = 367 Botucatu, SP</td>
<td>Aimed at low-income and low education populations, programs to quit smoking promoted by the Ministry of Health shall provide appropriate strategies in addition to dispensing medication for free.</td>
</tr>
<tr>
<td>Azevedo RCS, Higa CMH, Assumpção ISMA, et al. 2009</td>
<td>Follow-up</td>
<td>n = 171 São Paulo, SP</td>
<td>The difference between the morbidity rate and a number of medical referrals to the program. The smoker should be referred to treatment and adherence to the motivational group should be optimized. Knowledge of the socio-demographic profile of the population can adapt the treatment to achieve greater success over abandonment, and decrease the relapsing rate.</td>
</tr>
<tr>
<td>Silva VA, Ferreira AS, Cogo BA, et al. 2009</td>
<td>Descriptive</td>
<td>n = 174 Rio de Janeiro, RJ</td>
<td>PROGETA conducts the “acceptance” of the patient during registration that is followed by an interview, medical consultation, and referral to groups that follow the INCA standards. There was a significant correlation between age of smoking onset and degree of dependency.</td>
</tr>
<tr>
<td>Russo AC, Azevedo RCS. 2010</td>
<td>Case-control</td>
<td>n = 53 Campinas, SP</td>
<td>It reinforces the literature data: 64.2% of participants are women, 58.5% are married and started the habit in the adolescence. The population showed a high rate of diseases related to tobacco use. The search for treatment is associated with health concerns.</td>
</tr>
<tr>
<td>Siahpush M, Yong H-H, Borland R, 2010</td>
<td>Cohort prospective investigation in four countries</td>
<td>n = 8000 Canada, USA, United Kingdom, and Australia</td>
<td>The population with the highest socioeconomic status and educational level is more likely to stop smoking abruptly.</td>
</tr>
<tr>
<td>Castro MRP, Matsuo T, Nunes SOV. 2010</td>
<td>Case-control</td>
<td>n = 439 Londrina, PR</td>
<td>Smokers and non-smokers with an average age of 44 years were compared; there was a predominance of women in both groups. Smokers had the worse scores in all domains of WHOQOL-BREF.</td>
</tr>
<tr>
<td>Azevedo e Silva G, Valente JG, Malta DC. 2011</td>
<td>Four telephone surveys were conducted from 2006 to 2009. A different pattern between genders was observed in Brazilian capitals. The trend for smoking cessation has increased in both genders.</td>
<td></td>
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</tr>
<tr>
<td>Fu SS, van Ryn M, Sherman SE</td>
<td>Randomized clinical trial</td>
<td>n = 6400 Florida, New York, Minnesota, and Minneapolis</td>
<td>To test pro-active dissemination strategies through telephone services from the smoking cessation program, all smokers were included regardless of the desire to quit the habit. We evaluated the effectiveness of the proactive strategy and choice of type of care by the population.</td>
</tr>
</tbody>
</table>
DISCUSSION

In this study, we observed that smoking women had a higher prevalence and higher relapsing rate than men after treatment. The recommendation suggested in the evaluated studies was the association of drugs with the psychosocial approach and/or drugs with the cognitive behavioral method.

In the “Epidemiological Aspects” category, the sociodemographic factors (gender, age, education, and income) of smokers seeking treatment was shown to have ties to tobacco dependence in different Brazilian regions.24

Out of the nine evaluated observational studies, six showed a prevalence of 62.8% of women.15-20 The predominance of women seeking smoking cessation programs may be related to the difficulty to stop the habit without help and availability of time for attending the programs.15,17

Historically, women seek health services more than men, either for care to family members or their own. The latter has increased since 1983 by the Integral Assistance to Women’s Health Program (PAISM) created by the Ministry of Health in order to minimize the morbidity and mortality of women and children.26 This program was previous to the creation of SUS and reflects the struggle of women for a better condition of life and health.

It is believed that the service time offered by the program is, in fact, what most hinders the adhesion of men.17 In Mato Grosso do Sul, some services are also offered in the evening hours, which is likely to increase the adhesion of workers who have no possibility to attend the services during the day. Thus, it is suggested that this flexibility in the available hours be extended to other services. However, other studies are needed to prove these hypotheses.

The age of smokers in the six observational studies ranged from 30 to 50 years, with the onset of smoking in the childhood and adolescence, tobacco exposure time of about 30 years, and an average of 20 cigarettes per day.10,15-9 The prevalence of this age group in the studied population is understood as the result of the fact that the diseases caused by smoking often appear at this age, and middle-aged people are more concerned with health than youngsters.20 A study conducted in Brazilian capitals by the IBGE in 2008 showed an increased prevalence of smoking among young people.24 Between 2006 and 2009, the VIGITEL research also conducted in Brazilian capitals found higher prevalence of tobacco dependence in females aged 30 to 50 years and in males aged 18-29 years.24

Evidence in publications indicated that the time of tobacco use and the number of cigarettes smoked per day explain the high degree of dependence found in the Fagerstrom test applied in the studied population.15-20

A retrospective study in smokers, conducted between 2003 and 2007, observed that the group of participant women had low income and low education; those variables were the most commonly found in the evaluated studies.18 A descriptive study carried out in 2009 in the Tobacco Research and Treatment Program showed different results as most participant women attended high school. Similarly, a prospective study where the analyzed sample was composed predominantly by women, showed that they had high levels of education and income.15-7,19-20

The higher the educational level, the greater the chance of the individual to quit smoking abruptly.22

About education, the VIGITEL research reports that the number of years of education influences on smoking cessation, i.e., the cessation increases with increasing years of study. Corroborating the findings of VIGITEL, a prospective cohort study conducted in four industrialized countries showed that high income and high education are factors that can facilitate smoking cessation.21,24

In the “Approach to the Smoker” category, we observed among the four analyzed studies that those that have found more efficient results in this focus were studies that applied concomitant psychosocial and pharmacological treatments.16,9

Research conducted with 387 smokers in the age range of 19 to 74 years found that an appropriate approach should take into account the economic status of the clientele because assisting low income and education clients requires the distribution of free drugs to ensure increased adherence to treatment in addition to other therapeutic approaches.37

A 2007 review study on psychological factors associated with the smoking behavior suggests that before starting treatment for smoking cessation patients be evaluated on personality profile and presence of psychiatric disorders because the lack nicotine may exacerbate in the withdrawal period and favor the onset of psychiatric disorders or aggravate existing symptoms.11

In order to adapt the action to the approach to the smokers in the community, it is suggested that, first of all, their habits and beliefs regarding tobacco be observed as proposed by a systematic review article published in 2011.12 A study evaluating clinical and quality of life (QOL) characteristics in smokers and nonsmokers using the WHOQoL-BREF scale found low scores in all QOL domains in smokers, and significant association between depression and sedatives.23

Regarding the “Professional Training” category, it is believed that the training of health professionals focused on minimizing the harms of tobacco use should be part of the construction of knowledge for their work.14,18 One literature review corroborates these data on the effectiveness of pharmacological and psychosocial interventions for smoking cessation treatment, which emphasizes the involvement of an interdisciplinary team as essential to the success rate of smoking cessation.12,4

A review that examined the use of motivational interviewing, a therapeutic method that uses a different way to help people recognizing that they can do something about their present or potential problems, concluded that this approach does not bring significant results for smokers with high dependency.15 This may be related to the establishment...
of a more effective commitment by the individual, including establishing a date to stop smoking, which may impair the success of treatment.

Thus, it is emphasized in most of the analyzed studies that isolated approaches are not as successful as using integrated approaches, which can be verified in a prospective randomized study in which the treatment provision to smokers identified through their electronic medical records was conducted by telephone and individuals could choose the type of treatment. At the end of that study, it was verified that the motivational approach associated with the pharmacological approach showed the best results.25

CONCLUSION

Smoking is more prevalent in women and women present higher relapsing rates after treatment than men.

Although smoking is the leading cause of preventable death in the world, an increasing number of young people start the habit.

The research evaluated in the present study show similarity as the epidemiological profile of subjects included in the studies in Brazil and other countries. In addition, they provide subsidies to improve the professional practice of teams working in programs for smoking cessation and support other studies.

The most widely used therapy was pharmacological associated with the psychosocial or cognitive behavioral approach.

The hours of service in programs for smoking cessation can be a complicating factor in the adhesion of a greater number of workers.17 It is possible that this adhesion will improve if services are also offered in the evening hours.

The social contribution resulting from the demonstrated knowledge in this review for the interdisciplinary health team is that while diagnosing a smoker, regardless of his or her age, it is necessary to refer the individual as quickly as possible for a treatment that aims to abandon the habit beyond advising about the harm of smoking cigarettes. Thus, the nurse, as a member of this team, can develop active searching actions, health education, initial approach, and referrals helping to minimize the risk of complications caused by smoking.
REFERENCES


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Mail ing address:
Terezinha Alcântara Silva
Travessa Batatais, 19 Bairro: Jardim TV Morena
Campo Grande- MS
ZIP Code: 79050-131
E-mail: terealcan@gmail.com