# Smoking cessation program for Military Police officers: the Brazilian experience

Programa de cessação do tabagismo na polícia militar: uma exeperência brasileira

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## Abstract

There is no smoking cessation program for the Military Police in Brazil. **Objective:** To compare smoking cessation treatment in two outpatient populations: Military Police officers and civilians. **Methods:** A total of 205 civilians and 208 Military Police patients were analysed retrospectively. **Results:** The Military Police officers were younger, predominantly male, experienced less anxiety and depression, had a higher rate of smoking cessation after 4 weeks and had smoked more cigarettes per day than the civilian population. They also had fewer co-morbidities. **Conclusion:** The Military Police smoking cessation program in Brazil is unique and reveals information that is important in understanding this habit.

*Keywords: Smoking cessation, Police, Military personnel*

## Resumo

*Não há programa de cessação do tabagismo para a polícia militar no Brasil.* **Objetivo:** *comparar o tratamento para cessação do tabagismo em duas populações de pacientes ambulatoriais: policiais militares e civis.* **Métodos:** *um total de 205 civis e 208 militares foram analisados retrospectivamente.* **Resultados:** *os policiais militares eram mais jovens, predominantemente do sexo masculino, tiveram menos ansiedade e depressão, tiveram maior taxa de ces-*

*sação após 4 semanas e fumavam mais cigarros por dia do que a população civil, além de terem menos co-morbidades.* **Conclusão:** *o programa de cessação do tabagismo na polícia militar no Brasil é único e revela informações importantes no entendimento deste hábito.*

*Descritores: Abandono do hábito de fumar, Polícia, Militares*

## Introduction

Smoking is one of the most preventable causes of mortality worldwide[1]. It is considered a pandemic by the World Health Organization and caused approximately 5 million deaths annually. There are approximately 1.3 billion smokers worldwide[1]. In Brazil, one-third of the adult population smokes: 16.7 million men and 11.2 million women. An estimated 200,000 deaths per year are caused by smoking in Brazil[1].

A 2008 study found smoking prevalence in Brazil to be 16.1%, with 20.5% for males and 12.4% for females[2].

The São Paulo State Military Police has approximately 150,000 officers. Applying the overall smoking prevalence in Brazil to this population, there would be approximately 24,000 police officers who are smokers. We believe that this prevalence may be even higher due to the daily stress imposed by the profession, as in such situations there can be an increase in the number of cigarettes smoked[3].

In the United States, the prevalence of smoking among military recruits is approximately 51%[4]. If we apply a similar prevalence to the military police officers in Brazil, there would be approximately 75,000 smokers.

Most studies found in the literature address American military veteran smokers vs. others[5-7]. Despite military discipline being similar throughout the world, military police have different characteristics from the ordinary military men. In Brazil, due to the high crime rate, especially in large cities, this population is subjected to daily stresses that could theoretically

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modify their smoking habits compared to the civilian population.

A smoking cessation program was developed in March 2010 for the São Paulo State Military Police population and in September 2009 for the civilian population in our hospital. To our knowledge, there is no other such program in Brazil.

The aim of this study was therefore to analyse the profile and response to smoking treatment of two patient populations: the Military Police and the civilian population.

## Methods

The study was approved by the Research Ethics Committee of the Institution. This was a retrospective study that analysed data from 205 civilian patients and 208 military police patients between September 2009 and December 2012. Patient care was undertaken by a multidisciplinary team (doctors, nurses, psychologists and nutritionists) at the Santa Casa Central Hospital in São Paulo, following the World Health Organization recommendations[8].

Information on demographics, comorbidities, anti-smoking medication, weight gain, percentage of smoking cessation after four weeks and one year, the Fagerström Nicotine Dependence Scale, and the Hospital Anxiety and Depression Scale[9] were obtained from the patients' medical records.

Statistical analysis:

The software SigmaStat 3.5 (Systat Software Inc., San Jose, California) was used for statistical analysis. The Student's t test was used for numerical variables, and Fisher's exact test was used for proportional variables. The paired t test was used for analysis of weight gain after 4 weeks. A p-value of <0.05 was considered significant.

## Results

The main results of the study are shown in Table 1.

Data were obtained from 205 civilian patients and 208 Military Police patients. The rate of smoking cessation in the first 4 weeks of treatment was 52.6% among the civilians and 75% among the Military Police officers (p <0.0005). There was no significant difference when comparing cessation rates after 1 year (43% among civilians and 52% among the Military Police), but we only obtained information for 107 civilians and 66 Military Police at the end of 1 year.

Women predominated among the civilians (71%) and men among the military police (69%) [p <0.0005].

Regarding the week of smoking cessation, significantly more military police officers ceased smoking during the first two weeks of the program (55.7% vs. 41.6%, respectively) [p <0.05].

If we extract the data by gender, male military police officers had higher cessation rates after 4 weeks than male civilians (80% vs. 46.6%, respectively) [p <0.05]. There was no difference in cessation rates after 4 weeks between female military police officers and female civilians (63% vs. 37%, respectively).

The smoking cessation medications used by the two groups were as follows: bupropion, varenicline, transdermal nicotine patches and nicotine chewing gum. There was no difference between groups with respect to prescription medications. There was also no difference between the groups for the cessation rate of each medication in isolation.

The Military Police officers smoked more cigarettes per day than the civilians (p <0.05). Civilians were older than the police officers (p <0.05) and experienced more depression and anxiety according to the Hospital Anxiety and Depression Scale (p <0.05).

There was no difference in nicotine dependence between the two populations (Fagerström Scale).

There was no significant difference in weight gain after 4 weeks between the groups, but both gained weight significantly during the first 4 weeks (1 kg among police officers and 0.8 kg among civilians) [p<0.05].

## Discussion

The main findings of our study were as follows: the Military Police officers were younger, predominantly male, experienced less anxiety and depression, had a higher rate of smoking cessation in the first 4 weeks and smoked more cigarettes per day than the civilian population. They also exhibited fewer comorbidities.

The fact that Military Police officers were younger and predominantly male may explain the lower rate of anxiety and depression in this group. The civilian patients in our study were older, predominantly female and presented with more comorbidities than the military police.

These characteristics in our study are most likely due to the fact that civilians were referred from various specialties at the hospital and were high complexity patients. The increased presence of comorbidities among the civilian patients and the fact that they were predominantly female may explain the higher rate of anxiety and depression in this group, as more women typically experience depression, compared to men[10].

Furthermore, higher rates of anxiety and depression in the civilian population may account for the lower rate of cessation after four weeks. Many civilian patients had serious comorbidities, which can generate a feeling of hopelessness and potentially a lack of

| Table 1 | | | |
|---|---|---|---|
| **Comparison of two outpatient smoking populations** | | | |
| | *Military Police (n = 208)* | *Civilians (n = 205)* | *P Value* |
| **Gender** | | | |
| Male | 143 (69%) | 60 (29%) | < 0.0005 |
| Female | 65 (31%) | 145 (71%) | < 0.0005 |
| **Age (years)** | | | |
| Median | 41 | 54 | < 0.001 |
| p 25% | 37 | 47 | |
| p 75% | 45 | 62 | |
| **Cessation** | | | |
| first 2 weeks | 116 (55.7%) | 85 (41.6%) | < 0.05 |
| after 4 weeks | 156 (75%) | 108 (52.6%) | < 0.0005 |
| **after 1 year** | | | |
| civilians; n = 107 | 34 (52%) | 46 (43%) | NS |
| military; n = 66 | | | |
| **Cigarettes/day** | | | |
| Median | 30 | 20 | < 0.001 |
| p 25% | 22 | 20 | |
| p 75% | 40 | 30 | |
| **Cessation by gender** | | | |
| Male | 114 (80%) | 28 (46.6%) | < 0.05 |
| Female | 41 (63%) | 79 (54.4%) | NS |
| **Anxiety (HAD) - points** | | | |
| median | 6 | 8 | 0.029 |
| p 25% | 3 | 4 | |
| p 75% | 11 | 12 | |
| **Depression (HAD) – points** | | | |
| median | 3 | 6 | 0.004 |
| p 25% | 2 | 3 | |
| p 75% | 7 | 10 | |

motivation to stop smoking. In a population of hospitalized patients with advanced stage cancer, more than 80% of smokers were in the pre-contemplation stage, i.e., had not thought about quitting smoking[11]. This result shows us that simplifying smoking treatment and treating different populations in the same manner may have no impact. Smoking treatment, especially cognitive behavioral therapy, should therefore be approached differently, according to the population studied.

The fact that the Military Police officers smoked more cigarettes per day despite being less anxious and depressed may be explained by their workload and shifts. Most officers, especially when engaged in street patrolling, are required to work night shifts and may use cigarettes to keep themselves alert, especially in association with caffeine.

Another important fact, which may be a bias of the study, is that Military Police officers reported experiencing discrimination at work because they smoke, as they cease their activities several times during the work hours to smoke, which is frowned upon by their colleagues. Furthermore, the military hierarchy is rigid, and we cannot rule out pressure from superiors for smokers to attend our clinic. Perhaps due to the discipline to which they are subjected and the above factors, the Military Police officers displayed a greater percentage of smoking cessation, but this trend was not found after 1 year in the program, with many smokers returning to the habit.

An interesting finding in the study is that we observed no differences in cessation rates among the medications used, and the distribution of these medications was the same for both groups. This result is very interesting because doctors often use medications to treat the smoking habit instead of using cognitive-behavioral therapy. However, we cannot draw definitive conclusions about this result, as the sample size was too small to compare the efficacy of different smoking cessation medications.

Our study has certain limitations. The number of Military Police officers observed was small and does not faithfully represent the entire population of Military Police officers who smoke. In addition, the study was retrospective and based on medical records that often lacked data needed for the research.

Our study is unprecedented in Brazil and perhaps in the world, as we found no prior articles reporting such a program for military police groups. In conclusion, knowledge of different smoker populations is very important to the development of individualized public policies for smoking cessation. In this regard, our study contributed to the knowledge on the military police population.

More studies are needed to have better knowledge on smoking recurrence prevention for new approach strategies to be developed.

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