

ANALYSIS OF FACTORS AND DETERMINANTS OF NICOTINE ADDICTION

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Abstract: *We compared two groups of smoking peoples from two different environments and tried to assess by using Fagerstorm test nicotine addiction levels and its determinants regarding sex, age, level of education and entourage.*

Key words: *nicotine addiction, risk factor, age, education.*

1. Introduction

Smoking represents a national and international public health issue through its difficulties of prevention, multiple consequences regarding ones health and high individual and social expense [11].

Tobacco is a unique product throughout its addiction nature and the variety of pathology that it's responsible, which can lead to the death of half of its consumers when it is used according to producer. It is well known that life expectancy is 5 to 8 years shorter or it can reach 18-22 years if it is an tobacco disease associated [1, 2]. WHO counted 4 million deaths tobacco-related in 2002 and it is assumed that in 2020 it will reach 10 million deaths. Smoking is an important risk factor and the only one that can avoided from every life as it is shown by governmental and non-governmental associations [3, 4], [10].

2. Materials and Methods

Tobacco consumption is a persistent and amplified behaviour by a pharmacologic addiction - nicotine addiction - defined by DMV IV: as:

- tolerance: the need to rise dosage to obtain wanted outcome;
- discontinue symptoms, which reappear after an abstinence period;
- smoking desire and the inability of reducing consumption;
- a lot of time spent to smoke and to procure cigars;
- abandoning and reducing other activities due to smoking (social, professional, relaxing);
- continuous smoking despite consequences and health risks [1], [5], [7].

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Nicotine addiction is according to WHO a disease and almost half of European smokers fulfil the following diagnostic criteria:

- overwhelming desire or necessity of tobacco use;
- doubtful ability to control tobacco use;
- a physiological state of withdrawal;
- tolerance;
- even restricted area consumption;
- denial of other pleasures and alternative interests;
- permanent use despite its harmful consequences [6, 7, 8].
- Regarding nicotine addiction we are able to say that it is a:
 - physical addiction: lack of sensations, physical symptoms of smoking withdrawal syndrome;
 - psychic addiction: lack of psychoactive effects and appearance of withdrawal syndrome;
 - environment addiction: source of conditional reflexes, gestures;

In case of smoking cessation appearance of withdrawal symptoms: anxiety, hustle, overeating/overweight, concentration trouble, insomnia, slow reflexes and reactions, irritability and frustration [8, 9].

This study included two groups: first composed of 240 persons in which 37 daily smokers employees of a factory from Braşov city meaning 15,41% of all employees and a second one of 197 persons in which 37 daily smoking persons employees of a hospital in Braşov city. Were expelled ex-smokers (daily or occasional).

By studying smoking as risk factor, we tried to estimate exposure to the toxics within the cigar smoke by: Fagerström nicotine addiction test to assess physical and psychological addiction and a behavioural test to assess smoking habit. Selection was random and anonymous by tests.

We were unable to determine nicotine concentration in body fluids (a specific test to observe the presence of a nicotine metabolite in body fluids) and we were unable to measure breathe CO or serum levels of tiocianite.

3. Results

In the first group there is a domination of males (86,5%) unlike the second group from a hospital where is a domination of females. Average age was almost the same 42,65 years old (G1) and 40,46 years old (G2) (Table 1):

Average age of the two groups

Table 1

Group	Average age	N	Std. Deviation
group 1	42.65	37	12.654
group 2	40.46	37	8.780
Total	41.55	74	10.872

Age groups situation is as it follows: (Table 2) Significant difference between the two groups was found at 0-39 years age group in which most of the hospital smokers are(45,9%) unlike the factory

smokers where is a comparable distribution, with higher values at 40-49 years age group (27%) and 50-59 years age group (24,3%).

Age groups distribution of the two lots

Table 2

			group		Total	
			group 1	group 2		
Age groups	< 20 years	No. of cases	2	0	2	
		% cases	5.4%	.0%	2.7%	
	20-29 years	No. of cases	5	2	7	
		% cases	13.5%	5.4%	9.5%	
	30-39 years	No. of cases	7	17	24	
		% cases	18.9%	45.9%	32.4%	
	40-49 years	No. of cases	10	8	18	
		% cases	27.0%	21.6%	24.3%	
	50-59 years	No. of cases	9	10	19	
		% cases	24.3%	27.0%	25.7%	
	> 60 years	No. of cases	4	0	4	
		% cases	10.8%	.0%	5.4%	
	Total		No. of cases	37	37	74
			% cases	100.0%	100.0%	100.0%

Regarding general population of Romania, a representative sample was questioned in 1994 and the results of group age distribution at that time were: in 15-25 years group age 32,8% of the men were smoking and 17,4% of the women were smoking, in 25-44 years age group 61,7% of the men were smoking and 25% of the women were smoking, in 45-64 years age group 44,3% of the men were smoking and 10,5% of the women were smoking and over 65 years age group 20,6% of the men were smoking and 6,5% of the women were smoking.

In both of the groups there were married persons 59,5% G1 and 75,7% G2 and

children were present in 62,2% in G1, 59,5% in G2.

There is a serious number of scientific papers that correlate the level of education to smoking habit. Most of the smoking persons have medium level

of education (Table 3)

Regarding sex repartition and the correlation between sex and addiction, males were dominant in the first group: mild addiction – 2 cases, medium addiction – 9 cases, strong addiction – 12 cases, very strong addiction – 9 cases with a female domination in the hospital group: mild addiction – 5 cases, medium addiction – 8 cases, strong addiction – 6 cases, very strong addiction – 6 cases.

Professional education

Table 3

			group		Total
			group 1	group 2	
education	medium	No. cases	29	24	53
		% cases	78.4%	64.9%	71.6%
	high	No. cases	8	13	21
		% cases	21.6%	35.1%	28.4%
Total		No. cases	37	37	74
		% cases	100.0%	100.0%	100.0%

Addiction evaluation

Table 4

			group		Total
			group 1	group 2	
Addiction evaluation	mild	No. of cases	2	5	7
		% cases	5,4%	13,5%	9,5%
	medium	No. of cases	11	13	24
		% cases	29,7%	35,1%	32,4%
	strong	No. of cases	15	12	27
		% cases	40,5%	32,4%	36,5%
	very strong	No. of cases	9	7	16
		% cases	24,3%	18,9%	21,6%
Total		No. of cases	37	37	74
		% cases	100,0%	100,0%	100,0%

Analyzing correlation between degree of addiction and age we established that G1 had only two kinds of addiction (medium and strong) under age 20 suggesting smoking begins at a very small age or the period of installing install is very short, most smokers being 40-49 years old with a high percentage (60%) medium addiction and strong addiction (40%). Most smokers of G2 are 30-39 years aged and almost half (41%) have medium addiction towards reduction.

Nicotine addiction according to the level of education is irrelevant but there is a domination of the smokers with a medium

level of education in the two groups as seen in table 5.

There is no reference in specialized literature about a comparison between the smokers with a high level education and construction workers, but we can compare it with a Tobacco Control Resource Centre statistics published by British Medical Association in 2005 that included a few countries of the world. Romania has 51,4% daily male smokers and 29,6% ex-smokers; 38,6% daily female smokers and 13,5% ex-smokers. In Romania there are 43,2% current smokers and 40,2% ex-smokers [7], [9].

Nicotine addiction towards level of education

Table 5

Group				Level of education		Total
				medium	high	
Group 1	Addiction evaluation	mild	No. cases	2	0	2
		medium	No. cases	8	3	11
		high	No. cases	12	3	15
		very high	No. cases	7	2	9
	Total		No. cases		29	8
Group 2	Addiction evaluation	mild	No. cases	3	2	5
		medium	No. cases	10	3	13
		high	No. cases	9	3	12
		very high	No. cases	2	5	7
	Total		No. cases		24	13

Unfortunately, there is no statistics about smoking incidence among health professionals to compare to.

That's why, Karl Oloff Fagerst rm, manager of Helsinborg Smoking Information Centre - Sweden and author of Fagerst rm test stated years ago that in 2000 only in one European country the level of prevalence of smokers will reach 20% only if there is a sustained and maintained policy of smoking reduction and this country is Sweden which in 2005 had 14% current smokers and 48% ex-smokers. Analyzing the correlation between smoking and entourage by studying percentages of smoking parents in both groups we established that they were

comparable between two groups (mild higher in G2 54,1% towards 43,1% most of the smokers having high and very high addiction in G1 and medium and high addiction in G2).

Regarding addiction evaluation we insisted on the moment of the day in which subjects smoked more and our findings were: in group 1 high addiction in the morning (11 cases) and the highest addiction is unequal distributed during the day (89 cases towards G2 in which strong/very strong addiction consumption was maximum, but with equal distribution in the morning or in any moment of the day 5/5, respectively 4/3) (figure 1 and 2). [6], [10]

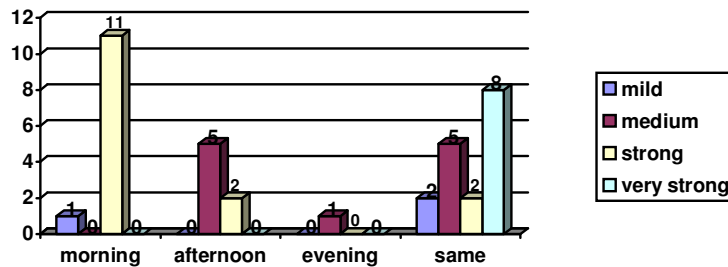


Fig. 1. Group's 1 addiction evaluation

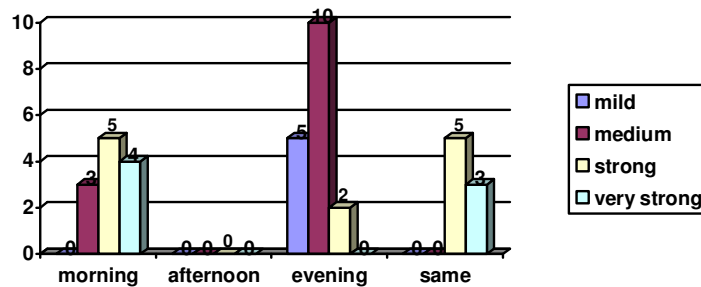


Fig. 2. Group's 2 addiction evaluation

Most of the male smokers of the first group 53,1% smoke the same during the day, and most of the female smokers of the

second group 60% are smoking in the evening.

Conclusion

1. Smoking, because of nicotine addiction must be considered an illness which need help to avoid withdrawal syndrome.
2. Proper approach to smoking cessation is to assess nicotine addiction which was one of our objectives.
3. By analyzing 74 nicotine addicted persons we established that there is no equal smoker and there were different kinds of addiction: mild, medium, strong and very strong addiction.
4. In the studied groups we did not encounter any addiction variability according to sex, males were dominant in the factory and females in the hospital group because of the dominant sex in each environment.

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