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## PSYCHOLOGICAL FEATURES OF AGGRESSIVENESS IN SMOKING FEMALE STUDENTS

I.A. Novikova

Chair of Social and Differential Psychology  
Peoples' Friendship University of Russia, Moscow, Russia  
*Miklukho-Maklaya str., 6, Moscow, Russia, 117198*

A.L. Novikov

Chair of General and Russian Linguistics  
Peoples' Friendship University of Russia, Moscow, Russia  
*Miklukho-Maklaya str., 6, Moscow, Russia, 117198*

The paper presents the results of a comparative study of the aggressiveness level in smoking and non-smoking female students. The System-Functional Model of Aggressiveness developed by A.I. Krupnov has been used in the study. The results confirm the hypothesis that smoking female students in general have a higher level of aggressiveness in comparison with the non-smokers, although the level of aggressiveness in both groups did not exceed the norm.

**Key words:** aggression, aggressiveness, System-Functional Model, personality traits, smoking, students.

Tobacco smoke contains over 4,000 chemicals, including nicotine, which is one of the strongest poisons that causes dependence. Smoking is the leading preventable cause of premature death and disease and causes more than 5 million deaths each year, with the anticipated increase in this parameter to 8 million deaths annually by 2030 [17]. In Russia, 400 000 people are dying every year from diseases caused by tobacco smoking [15].

Despite the known negative effects of smoking, the number of smokers in Russia is not declining, and even growing. According to the Global Adult Tobacco Survey [10] 39.1% of Russians (43.9 million) are smoking (60.7% men and 21.7% women). Compared with 1980 the number of smokers among men has increased by about 15% and among women it has grown by more than 4 times! The highest percentage (37.9 %) of female smokers are in the age range from 19 to 24 years (the age for higher education).

From the viewpoint of psychology, the issue of tobacco addiction is still understudied, as opposed to medicine. However, evidence suggests that there are differences between smokers and non-smokers in the personality traits. For example, smokers have higher estimates of Extraversion [8; 9; 14] and Psychoticism [14]. The average scores of Extraversion in male smokers are higher than in female smokers [11]. The estimates of Neuroticism in male smokers are significantly higher than in men who quit or never smoked. At the same time, there is no difference in the level of Neuroticism among smoking and non-smoking women. The researchers suggest that men start smoking in order to reduce anxiety and use smoking as a coping strategy [14].

Using the R. Cattell' 16PF, N. Serdyukova showed that non-smoking young men and women compared with smokers have a higher Rule-Consciousness, Abstractedness and Apprehension and a lower Social Boldness [6].

Accordingly, we assume the existence of differences between smokers and non-smokers in the level of Aggressiveness. The study of this problem by the example of student age females is particularly relevant because of the growth of the number of smokers among them (in Russia).

We considered Aggressiveness as a personal trait. In our research we were guided by the System-Functional Model of organization of the personality traits developed by the PFUR professor Alexander Krupnov [1; 13]. Within the framework of this approach the personality trait is studied as a complete and systematic formation. The two blocks are singled out in its structure: *the motivational-meaningful*, including the attitudinal-target, motivational, cognitive and productive components in its structure, and *the regulatory-dynamic*, containing the emotional, dynamic, regulatory, reflective-evaluative components of the personality trait. Each component contains two variables. With reference to aggressiveness the system-functional model is particularized as follows (table 1). From the motivational-meaningful side the aspiration of the subject to display aggressiveness in interpersonal interaction differs in the orientation of motivation (sociocentric or egocentric), the sphere of application of the result of aggressive behavior (object or subject sphere), the level of awareness of aggressiveness as a personality property (profound or superficial). From the regulatory-dynamic side the same aspiration can be characterized by the orientation of emotional experiences (affectivity or reflectivity), by volitional regulation (internal or external), by forms of aggression manifestation (physical or verbal) and also by the character of problem situations in which aggression is shown (operational and personal difficulties).

Table 1

**System-Functional Model of organization of the aggressiveness by A.I. Krupnov**

Blocks	Components	Variables
The motivational-meaningful	Motivational	Sociocentric Motivation
		Egocentric Motivation
	Cognitive	Profound Awareness
		Superficial Awareness
	Productive	Objectness
		Subjectness
The regulatory-dynamic	Dynamic	Physical aggression
		Verbal aggression
	Emotional	Affectivity
		Reflectivity
	Regulatory	Internal Regulation
		External Regulation
	Reflective-evaluative	Personal difficulties
		Operational difficulties

The team of the PFUR Center of Personality Studies has conducted a number of fundamental and applied studies based on this model [5]. For example, T. Nechepurenko studied the gender specificity of aggressiveness in students. It is revealed that the aggressiveness of young men is more often used as a tool and it is physically focused, and girls' aggressiveness is more emotional, which is reflected also in social conceptions of the students about aggression and aggressiveness. The gender specificity in the aggressiveness structure in the relations of the cognitive, emotional and regulatory components is shown [4].

We suppose that there is a possibility to most fully determine the psychological features of aggressiveness of smoking female students on the basis of System-Functional Model. The study of the psychological factors associated with smoking will help to find additional arguments for the development of the effective control measures of tobacco smoking in accordance with the Framework Convention on Tobacco Control [16].

**The purpose** of this study was to compare the level of Aggressiveness of smoking and non-smoking female students.

**The basic hypothesis** is female students who smoke have higher levels of aggressiveness than non-smokers.

97 respondents took part in the research, of which 55 female students (57%) are non-smokers, 42 female students (43%) are smokers. All the respondents were the first, second and third year students of humanitarian faculties of PFUR (aged 17—23 years). We studied the girls who smoke because, first of all, girls prevail in the humanitarian departments of universities, and secondly, recently in Russia the number of young smoking women (aged 19—24) has increased.

The aggressiveness level was measured by the Questionnaire developed by A. Krupnov in accordance with the System-Functional Model. The questionnaire consists of seven sections and renders possible to diagnose the various components and variables of aggressiveness.

In addition, we used the “Leary Interpersonal Diagnosis” (Leary, 1957) adapted in Russia by L. Sobchik (Sobchik, 1990). T. Leary identified 8 main types of interpersonal relationships: 1) Managerial–Autocratic, 2) Competitive–Narcissistic, 3) Aggressive–Sadistic, 4) Distrustful–Rebellious, 5) Masochistic–Self–Effacing, 6) Dependent–Docile, 7) Overconventional–Cooperative, 8) Responsible–Hypernormal. The “Leary Interpersonal Diagnosis” contains 128 suggestions (16 for each type of interpersonal relationships). 16 points is a maximum amount for each type: low degree of severity — 0—4 points, middle degree of severity — 5—8 points, high degree of severity — 9—12 points, extreme degree of severity (difficulties in social adaptation) — 13—16 points. The technique allows to define two cumulative factors: Domination and Friendliness.

ANOVA and Student’s t-test for independent samples was used for statistical analysis.

Let us consider the data on Aggressiveness in smoking and non-smoking female students conducted on the basis of System-Functional Model (table 2).

Table 2

**Statistical estimate of distinctions in expressiveness of the Aggressiveness variables in smoker and non-smoker female students**

Variables of Aggressiveness	Non-Smokers (n = 55)	Smokers (n = 42)	t-test	p-level	F (ANOVA)	p-level
Socio-centric	17,90	20,64	-1,34	0,181	1,812	0,181
Egocentric	16,96	19,66	-1,35	0,179	1,831	0,179
Profound Awareness	25,34	22,73	1,46	0,148	2,125	0,148
Superficial Awareness	17,89	18,76	-0,53	0,596	0,283	0,596
Objectness	16,49	18,88	-1,40	0,163	1,974	0,163
Subjectness	12,65	15,47	-1,72	0,088	2,957	0,089
Internal Regulation	25,60	27,42	-1,08	0,280	1,179	0,280
External Regulation	25,81	27,38	-0,88	0,378	,784	0,378
Physical aggression	<b>13,14</b>	<b>19,35</b>	<b>-2,94</b>	<b>0,004</b>	<b>8,636</b>	<b>0,004</b>

End of Table 2

Variables of Aggressiveness	Non-Smokers (n = 55)	Smokers (n = 42)	t-test	p-level	F (ANOVA)	p-level
Verbal aggression	<b>25,07</b>	<b>29,90</b>	<b>-2,58</b>	<b>0,011</b>	<b>6,680</b>	<b>0,011</b>
Affectivity	20,20	23,09	-1,48	0,140	2,211	0,140
Reflectivity	24,70	24,19	0,23	0,813	0,056	0,814
Personal difficulties	<b>17,21</b>	<b>21,16</b>	<b>-2,12</b>	<b>0,036</b>	<b>4,498</b>	<b>0,037</b>
Operational difficulties	<b>15,85</b>	<b>21,40</b>	<b>-2,64</b>	<b>0,009</b>	<b>6,962</b>	<b>0,010</b>

Note: statistically significant distinctions are marked with bold font and grey background.

As it can be seen from Table 2 the smoking female students are characterized by a higher degree of manifestation of the *Physical Aggression* variable of the Aggressiveness than the non-smoking female students (19.35 and 13.14, respectively). Consequently, smoking girls are more prone to physical forms of aggression (to show strength to protect themselves, to kick back, to strike another person, to bang on the table, etc.) than non-smokers. Also smoking girls are characterized by a higher severity of the *Verbal Aggression* variable of Aggressiveness than the non-smoking girls (29.90 and 25.07 respectively). So smokers more often show aggression in verbal form (to say rude things, to scream during a dispute, to speak offensive words, etc.) than non-smokers.

The female students who smoke are to a greater degree characterized by the *Operational Difficulties* variable of Aggressiveness than the female students who do not smoke (21.16 and 17.21, respectively). In this connection for the girls who smoke it is more difficult to control the manifestations of their aggressiveness, than for the girls who do not smoke: they often experience anger, cannot hide their negative attitude toward other people, cannot control pitching their voice, etc.

Finally, as for the *Personal Difficulties* variable of Aggressiveness in non-smoking female students the mean values of this variable appear appreciably lower (15.85) than in smoking female students (21.40) and this distinction is statistically significant. Female smokers feel irritation and anger more frequently, they are more quick-tempered, etc., than the non-smokers.

It is necessary to note, that the distinctions in the severity of the Dynamic and Reflective-Evaluative components of aggressiveness emphasize the most significant differences in the external manifestations of aggressiveness between smoker and non-smoker students. Thus, the differences in the manifestations of aggression between these groups appear on the behavioral level rather than on the level of motives, views, representations, or emotional reactions.

Now let us consider the data obtained by means of the "Leary Interpersonal Diagnosis" (Table 3). As it can be seen from Table 3 the severity of the seven of the eight types of interpersonal relationships in smoking female students is practically the same as its levels in non-smokers female students. The values of the cumulative factors **Dominance** and **Friendliness** also have no significant differences in the studied groups of female students.

Table 3

**Statistical estimate of distinctions in expressiveness of interpersonal relationships types by the “Leary Interpersonal Diagnosis” in smoker and non-smoker female students**

Quad-rant	Interpersonal relationships types	Non-Smokers (n = 55)	Smokers (n = 42)	t-test	p-level	F (ANOVA)	p-level
I	Managerial-Autocratic	7.49	8.11	-0.78	0.432	0.622	0.432
II	Competitive-Narcissistic	5.90	5.85	0.08	0.933	0.007	0.934
<b>III</b>	<b>Aggressive-Sadistic</b>	<b>5.20</b>	<b>6.97</b>	<b>-2.76</b>	<b>0.006</b>	<b>7.611</b>	<b>0.007</b>
IV	Distrustful-Rebellious	5.58	5.78	-0.33	0.737	0.113	0.738
V	Masochistic-Self-Effacing	4.96	4.97	-0.02	0.984	0.000	0.984
VI	Dependent-Docile	4.96	4.90	0.09	0.924	0.009	0.925
VII	Overconventional-Cooperative	6.83	6.85	-0.03	0.972	0.001	0.973
VIII	Responsible-Hypernormal	6.67	7.28	-0.86	0.388	0.749	0.389
<b>Domination</b> I — V + 0,7 x (VIII + II — IV — VI)		3.89	4.93	-0.66	0.508	0.440	0.509
<b>Friendliness</b> VII — III + 0,7 x (VIII — II — IV + VI)		1.95	0.33	1.12	0.264	1.262	0.264

Note: statistically significant distinctions are marked with bold font and grey background.

The significant distinctions between the groups of smoking and non-smoking female students are found only in the mean values of the indicators of III octant “Aggressive-Sadistic” ( $F = 7,611$ ,  $p = 0,007$ ;  $t = 2,76$ ;  $p = 0,007$ ) by “Leary Interpersonal Diagnosis” (Table 3). Smoking female students were more aggressive (6.97) than non-smokers (5.20). But, these values in both groups correspond to medium degree of severity of the parameter (5—8 points) and do not exceed the norm.

These results confirm the hypothesis that smoking female students are generally more prone to the manifestations of aggressiveness than non-smokers, although the level of aggressiveness in both groups did not exceed the norm. This fact partly corresponds to the data on a higher level of Extraversion in smokers [8; 9; 14]. However, the question remains about the causal relationship: “The Smoking contributes to the Aggressiveness or the Aggressiveness contributes to the Smoking?” To answer this question it is necessary to conduct a longitudinal study.

Summing up the results of the study, it can be **concluded** that:

1) the smoking female students are characterized by a higher degree of manifestation of the four variables of Aggressiveness: *Physical Aggression*, *Verbal Aggression*, *Operational Difficulties*, *Personal Difficulties*, than the non-smoking female students. Consequently, the female students who smoke tend to exhibit physical and verbal aggression much more often than non-smokers. The smoking female students are more likely through their aggressive actions to compensate for their low self-esteem, anxiety, self-doubt, as well as undeveloped intellectual, volitional and communication habits;

2) the significant distinctions between groups of smoking and non-smoking female students are found only in the mean values of the Indicators of III octant “Aggressive-Sadistic” by “Leary Interpersonal Diagnosis”. This fact confirms that in general smoking female students are more aggressive than non-smokers;

3) the study generally confirmed our hypothesis: female students who smoke in general have a higher level of aggressiveness in comparison with the non-smokers, al-

though the level of manifestation of aggressiveness does not exceed the norm. However, the question remains about the causal relationship: smoking contributes to aggressiveness or aggressiveness contributes to smoking? To answer this question it is necessary to conduct a longitudinal study;

4) the prospects for further study are in comparing the level of aggressiveness in smoking and non-smoking male students and studying this problem in other age groups of men and women;

5) the obtained data can be used to develop programs for the prevention and tobacco control. For example, along with a warning on a pack of cigarettes “Smoking kills!”, it is possible to describe the psychological effects of smoking, such as “Smoking Girls are more aggressive!” and so on.

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## **ПСИХОЛОГИЧЕСКИЕ ОСОБЕННОСТИ АГРЕССИВНОСТИ КУРЯЩИХ СТУДЕНТОК**

**И.А. Новикова**

Кафедра социальной и дифференциальной психологии  
Российский университет дружбы народов  
*ул. Миклухо-Маклая, 6, Москва, Россия, 117198*

**А.Л. Новиков**

Кафедра общего и русского языкознания  
Российский университет дружбы народов  
*ул. Миклухо-Маклая, 6, Москва, Россия, 117198*

В статье представлены результаты сравнительного исследования агрессивности курящих и некурящих студенток. Агрессивность рассматривалась на основе системно-функциональной модели А.И. Крупнова. Результаты исследования подтверждают гипотезу о том, что курящие студентки в целом имеют более высокий уровень агрессивности по сравнению с некурящими, хотя уровень агрессивности в обеих группах не превышает нормы.

**Ключевые слова:** агрессия, агрессивность, системно-функциональная модель, черты личности, курение, студенты.