# SMOKING BEHAVIOUR RELATED TO HEALTH STATUS, SELF ESTEEM, LIFE SATISFACTION AND PERCEIVED SOCIAL SUPPORT IN AN ADOLESCENT SAMPLE

**MONIKA CSIBI[1], SÁNDOR CSIBI[2], MARTON DÉNES[3], ZOLTÁN ÁBRÁM[4]**

[1,2,3,4]*University of Medicine and Pharmacy Tîrgu-Mureș*

***Keywords:*** *smoking, health behaviour, adolescence, social support*

***Abstract:*** *The study aim to analyze the differences in cigarette smoking behaviour related with the perceived social support from family and school. The instrumentation consists of the questionnaire based on the HBSC survey containing healthy lifestyle and social context's items, Rosenberg Self-Esteem Scale (Rosenberg, 1965) and Life Satisfaction Scale (Cantril, 1965). Participants are 447 students from Romanian high schools (11-12 graders), aged between 17-18 years (mean age 17.4 years). Results show that frequent smokers spend a significantly higher amount of time with friends, but they perceive relevantly inferior level of social support from family, a lower health status, and life satisfaction. Frequently, smoking participants report an unfavourable school attitude, lack of satisfaction with their physical constitution and lower perceived level of support from their teachers. The study concludes for the importance of increasing social support when targeting the improvement of health behaviour.*

## INTRODUCTION

Adolescence is a stressful and vulnerable period of development, generally marked by a tendency to experience poorer mental health based on an increase in the adoption of risk behaviours such as tobacco or alcohol use.(1,2) Data collected by the National Youth Risk Behaviour Survey (3) indicate that almost 45% of high-school students tried a cigarette, and 18% smoked cigarettes on at least one day during the 30 days before the survey. According to the ESPAD Survey (European School Survey Project on Alcohol and Other Drugs; Swedish Council for Information on Alcohol and Other Drugs – CAN), 54% of the students from participating countries reported that they had smoked cigarettes at least once, and 28% that they had used cigarettes during the past 30 days. The lifetime prevalence rates of cigarette smoking ranged between 26% and 78%. Nearly one-third of the participants (31%) smoked a cigarette at the age of 13 or younger.(4) In Europe, HBSC (Health Behaviour in School-aged Children Study; WHO Regional Office for Europe) studies revealed that health-compromising behavior (particularly smoking and alcohol consumption) seems to increase relevantly between ages 13 and 15.(5)

The number of health behaviours decreases together with the increase in age and also the occurrence of risk behaviour increases significantly, manifested in an unhealthy diet; substance consume, and the raised amount of time spent in front of TV and computer.(6) Furthermore, researchers suggested that adolescents were more vulnerable to the addictive properties of nicotine because the duration of smoking and the number of cigarettes required to establish nicotine addiction are lower comparing to adults.(7,8,9)

*Influences of social support on smoking behaviour*

Adolescence represents a time in which teenage people became of increased autonomy over their behaviours and with whom they spend their free time. The studies sustain that both positive and negative influences need to be taken into consideration when analyzing teenagers parental and peer relationships' complex dynamics.(10,11,12) The influences of family, peers, and school-interactions, are the primary sources for both pros- and anti-smoking messages in adolescents' lives.(13) Family support, adequate school environment and peer support, are among the most consistent and important factors associated with adolescent smoking.(14) Researchers argue that the social determinants of health during adolescence relevantly influence the level of self-rated health and well-being for long-term later, in the adult life.(15) The different norms, others' expectations, and behaviours might also play an important role in prescribing an approved behaviour.(16) The authors emphasize also the protective effect of positive parenting practices in preventing the adoption of smoking (11,7,18,19) Studies conclude that positive relationships with parents show negative association with smoking initiation and intensity.(20) Maternal and paternal smoking both relate significantly to the risk of smoking initiation.(21,22,23) Schoolmates' support relates to higher self-appreciation and to a better school adjustment.(12,24) Peers are, therefore, valuable social contacts who contribute to young people's health and well-being but could also have proven to exercise negative influences in relation to risk behaviours, such as smoking and drinking.(25) HBSC findings show that those children, who perceive their school as supportive, were more likely to engage in positive health behaviours and prove low smoking prevalence.(26) School acceptance is treated as the most common factor of colleague support provided by school environment, and also proved relevant implications on teenagers' school motivation, self-efficiency, somatic complaints and overall psychosocial well-being.(27,28,29,30,31) Positive school experiences and favourable attitude toward school show strong association with a higher level of self-reported quality of life.(32,33,34,35) These associations suggest that schools might have an important role in supporting young people's well-being and in acting as buffers against negative health behaviours and outcomes.(36) Researchers emphasize the strong association between socializing influences and smoking behaviour among early adolescents, indicating that smoking prevention efforts considering normative pressures from peers should begin prior to middle school.(37)

[2]Corresponding author: Sándor Csibi, Nr. 231, Corunca, România, E-mail: csibi.sandor@umftgm.ro, Phone: +40740 807118
Article received on 27.11.2017 and accepted for publication on 26.02.2018
ACTA MEDICA TRANSILVANICA March 2018;23(1):1-5

*Psychological health outcomes and cigarette smoking*

Studies suggest that teenagers treat smoking as a weight-reduction instrument, especially among adolescent overweight girls.(38,39) Physical development significantly predicts smoking among girls who perceive themselves as looking older comparing to their peer.(40) Dissatisfaction with body weight and the belief that smoking has weight-controlling effects were associated with an increased likelihood of adolescent smoking.(41) Adolescents who ever tried smoking or reported current smoking had poor opinions of both their physical and mental health, besides the adoption of a more unhealthy diet, or lack of activity.(42,43) Adolescents perceiving higher level of stress are more likely to smoke than those with low perceived tension are; self-esteem in the area of school subjects has a mediator role in the relationship between stress and smoking.(26,40,44,45,46)

## PURPOSE

The present study set as goal the analysis of the differences in cigarette smoking behaviour related to the perceived social support from family, peers, and school. Further, we assess health variables, such as self-rated health, self-esteem, life-satisfaction and body image among adolescent participants.

## MATERIALS AND METHODS

*Instrumentation*. We assessed the health-related behavior through the questionnaire based on the HBSC Surveys containing demographic data (gender, age), healthy lifestyle and social context's items.(5,6) The questionnaire included the Rosenberg Self-esteem Scale (RSRS), (47) and Life Satisfaction Scale (Cantril ladder).(48)

We obtained data regarding smoking initiation and frequency through answers to the question: *Have you ever tried a cigarette?* and *How often you smoked tobacco?*, with response options ranging from "daily" to "no smoking".

Variables of the *social support* were:

- from family: family structure (presence or absence of one member: mother, father and sisters/brothers) and support from the family (easy or difficult communication with members: mother, father, brothers, and sisters);
- from peers: number of friends (boys or girls: less than three friends and more than three friends) and time spent with friends (0-2 days/week and 3-5 days/week – both outside the weekend);
- school settings: liking school (response options ranged from "I like it a lot" to "I don't like it at all"); classroom climate (from "strongly agreed" to „not agree at all"); school-related stress (how pressured they feel by the schoolwork – response options ranged from "a lot" to" not at all"); school acceptance (from "strongly agreed" to „ not agree at all"); teachers' attitude toward students (favourable – from "strongly agreed" to „not agree at all") and perceived acceptance from them (response options ranged from "strongly agreed" to „not agree at all")

*Health-behaviour* variables:

- self-rated health (with response options of "excellent," "good," "fair" and "poor") ;
- life satisfaction (respondents were asked to indicate the step of the ladder at which they would place their lives at present – from "0" to "10");
- global self-esteem, (RSRS, scores from "0" to "40");
- body-image (adolescents were asked about how they perceive their bodies. Response options ranged from "much too thin" to "much too fat")
- weight-control behaviour (response options ranged from: "no, my weight is fine" to "Yes; I was on a diet, or I am doing something else to lose weight").

*Participants.* 447 students participated to the study, attending high schools in 11-12 classes, aged between 17-18 years (mean age 17.4 years); 235 were 17 years old, from 11th class, and 212 were 18 years old, from 12th class. Regarding their gender, 191 was boys (42,7%,) and 256 girls (57,3%); among the 17 years olds 95 was boys and 140 girls, and among the 18 years, 96 was boys and 116 girls. The included school classes were chosen in a random way. Filling the questionnaire took 40 minutes and was administrated during a class hour.

*Statistical analysis.* Data were performed with the PASW Statistics program version18. We use descriptive statistics descriptive statistical analysis for calculation of mean values, variations, dispersions, comparative analysis of percentages, and nonparametric method of Mann-Whitney U Test.

## RESULTS

As a first approach, we summarize the percentages of scores obtained along the analyzed variables in our study, comparatively with the Romanian HBSC data and the European HBSC average (table no. 1).

**Table no. 1. Comparative statistics of the analyzed variables regarding the gender (percentage)**

| VARIABLES | Percentage* in the study | | Romanian data | | HBSC average** | |
|---|---|---|---|---|---|---|
| | girl | boys | girls | boys | girls | boys |
| *Smoking behaviour variables:* | | | | | | |
| Smoking initiation (ever tried to smoke) | 69 | 68 | 43 | 55 | 49 | 50 |
| Smoking frequency (at least once a week) | 27 | 29 | 15 | 25 | 17 | 19 |
| *Psychological health variables:* | | | | | | |
| Self-rated health (rated as fair or poor) | 37 | 25 | 27 | 13 | 23 | 14 |
| Life satisfaction (high: score of 6 or more) | 67 | 70 | 68 | 81 | 79 | 86 |
| Global self-esteem (high: score 30 or more) | 34 | 53 | - | - | - | - |
| Body-image (perceiving to be too fat) | 36 | 17 | 27 | 18 | 40 | 22 |
| Weight-control behaviour (currently engaged) | 30 | 15 | 16 | 10 | 22 | 9 |
| *Social support variables:* | | | | | | |
| Family structure (single parents) | 7 | 6 | 17 | 17 | 13 | 13 |
| Communication with mothers (easy to talks) | 63 | 53 | 86 | 89 | 77 | 78 |
| Communication with fathers (easy to talks) | 18 | 29 | 59 | 79 | 50 | 69 |
| Time spent with friends (four or more evenings/week) | 32 | 45 | 26 | 39 | 24 | 32 |
| Number of friends (three or more friends) | 76 | 95 | 68 | 79 | 75 | 80 |
| Liking school (like school a lot) | 79 | 63 | 40 | 24 | 25 | 20 |
| Pressured by schoolwork (a lot or some) | 37 | 32 | 47 | 38 | 46 | 37 |
| Classmate support (agreed or strongly agreed) | 87 | 84 | 61 | 55 | 66 | 65 |
| School acceptance (agreed or strongly agreed) | 96 | 95 | - | - | - | - |
| Teachers attitude toward students (favourable) | 71 | 74 | - | - | - | - |
| Perceived acceptance from teachers (feeling accepted) | 62 | 76 | - | - | - | - |

** mean age in our study: 17.4 age*
*** for 15,1 years old adolescents, based on the 2009/2010 survey (Currie et al., 2012)*

Nonparametric data analysis show relevant associations between the social support from the family and the smoking initiation and frequency (table no. 2).

**Table no. 2. Differences in smoking initiation and frequency depending on social support from family (Mann-Whitney U Test)**

| Variables | | N | Mean Rank | Sum of Ranks | U | p |
|---|---|---|---|---|---|---|
| *Smoking initiation (1-tried, 2-not tried)* | | | | | | |
| Social support from the family | Good comm. with mother | 258 | 231,80 | 59805 | 21594 | *0,025* |
| | Poor comm. with mother | 186 | 209,60 | 38985 | | |
| | Good comm. with sister(s) | 51 | 189,56 | 9667,5 | 8341,5 | *0,012* |
| | Poor comm. with sister(s) | 396 | 228,44 | 90460,5 | | |
| *Smoking frequency (1-daily, 2-at least once a week, but not every day, 3-less than once a week, 4-no smoking)* | | | | | | |
| Family structure | Presence of mothers | 418 | 226,78 | 94795,5 | 4897,5 | *0,048* |
| | Absence of mothers | 29 | 183,88 | 5332,5 | | |
| | Presence of fathers | 346 | 229,73 | 79487,5 | 15489,5 | *0,047* |
| | Absence of the fathers | 101 | 204,36 | 20640,5 | | |
| Social support from the family | Good comm. with mother | 258 | 231,39 | 59698 | 21701 | *0,049* |
| | Poor comm. with mother | 186 | 210,17 | 39092 | | |
| | Good comm. with father | 102 | 244,78 | 24968 | 15475 | *0,034* |
| | Poor comm. with father | 345 | 217,86 | 75160 | | |
| | Good comm. with sister(s) | 51 | 174,39 | 8894 | 7568 | *0,001* |
| | Poor comm. with sister(s) | 396 | 230,39 | 91234 | | |
| *Total* | *N=447* | | | | | |

Perceived social support from family reported through positive communication with the mother (*p=0.025*) or other family members (for example the positive communication with sisters significant, *p=0.012*) significantly influence the smoking initiation of our participants. Contrary, teenagers reporting poor communication with their mothers proved significantly higher frequency of cigarette smoking.

Family structure seems to exert a relevant impact on adolescents smoking. Regarding the smoking frequency, our results show that teenagers living in the absence of mothers (*p=0.048*) and fathers (*p=0.047*) are reporting a higher level of smoking frequency. Besides, the poor communication with mother and father significantly influence the increased frequency of smoking. Results show that good communication with the teenagers' sisters (*p=0.001*) also lead to higher frequency of smoking among our participants.

Concerning the time spent with friends, we found a substantially higher level of occurrence of smoking among teenagers who spend 3-5 days per week with their friends (p=0.013), comparing to their colleagues who spend less time with peers (0-2 days per week) (table no. 3). Among the teenagers reporting fewer friendship relations (p=0.040) the occurrence of smoking proved to be significantly higher. The teenagers spending more time with their friends (p=0.010) report a higher level of smoking frequency.

**Table no. 3. Differences in smoking initiation and frequency depending on social support from peers (U Test)**

| Variables | | N | Mean Rank | Sum of Ranks | U | p |
|---|---|---|---|---|---|---|
| *Smoking initiation (1-tried, 2-not tried)* | | | | | | |
| Time spent with friends | 0-2 days/week | 165 | 239,84 | 39573 | 20652 | *0,013* |
| | 3-5 days/week | 282 | 214,73 | 60555 | | |
| *Smoking frequency (1-daily, 2-at least once a week, but not every day, 3-less than once a week, 4-no smoking)* | | | | | | |
| Number of friends (boys) | Less than 3 friends | 71 | 249,25 | 17004 | 11555 | *0,040* |
| | More than 3 friends | 376 | 219,23 | 83124 | | |
| Time spent with friends | 0-2 days/week | 165 | 241,87 | 39909 | 20316 | *0,010* |
| | 3-5 days/week | 282 | 213,54 | 60219 | | |
| *Total* | *N=447* | | | | | |

Regarding the associations between the smoking initiation and the factors of social support from the school, we summarized data in table 4 below. Results show that the teachers' attitude (p=0.041), perceived level of school pressure (p=0.016), and the teenagers' attitudes toward school-life (p=0.001), are significantly related to the smoking occurrence. Thus, the negative perception of school (disliking school) and the higher levels of pressure by homework and school tasks are associated with a higher occurrence of smoking initiation. We also found significant relations between the perceived unfavourable attitude of teachers and the stronger occurrence of smoking.

We found similar results regarding the smoking frequency. Data support that the negative perception of school (p=0.001) (disliking school), the higher levels of perceived school acceptance (p=0.018) and unfavourable attitude of teachers (p=0.009) are associated with the increased level of smoking frequency.

**Table no. 4. Differences in smoking initiation and frequency depending on social support in school settings (U Test)**

| Variables | | N | Mean Rank | Sum of Ranks | U | p |
|---|---|---|---|---|---|---|
| *Smoking initiation (1-tried, 2-not tried)* | | | | | | |
| Attitude toward school | Positive | 324 | 236,59 | 76654,5 | 15847,5 | *0,001* |
| | Negative | 123 | 190,84 | 23473,5 | | |
| School pressure | High | 155 | 207,85 | 32217 | 20127 | *0,016* |
| | Low | 292 | 232,57 | 67911 | | |
| Teachers attitude | Positive | 325 | 230,15 | 74797,5 | 17827,5 | *0,041* |
| | Negative | 122 | 207,63 | 25330,5 | | |
| *Smoking frequency (1-daily, 2-at least once a week, but not every day, 3-less than once a week, 4-no smoking)* | | | | | | |
| Attitude toward school | Positive | 324 | 236,63 | 76668 | 15834 | *0,001* |
| | Negative | 123 | 190,73 | 23460 | | |
| School acceptance | High | 427 | 221,27 | 94481,5 | 3103,5 | *0,018* |
| | Low | 20 | 282,33 | 5646,5 | | |
| Teachers attitude | Positive | 325 | 232,48 | 75557 | 17068 | *0,009* |
| | Negative | 122 | 201,40 | 24571 | | |
| *Total* | *N=447* | | | | | |

Negative self-rated health (p=0.033), the higher level of life-satisfaction (p=0.049) and the absence of weight control behaviour (p=0.005) are relevantly associated with the smoking initiation (see table no. 5).

Positive self-esteem (p=0.048), but a more unfavourable body image (p=0.003), besides the lack of weight control behaviour (p=0.027) proves relevant associations with the higher reported frequency of smoking.

**Table no. 5. Differences in smoking initiation and frequency depending on adolescents' psychological health factors (Mann-Whitney U Test)**

| Variables | | N | Mean Rank | Sum of Ranks | U | p |
|---|---|---|---|---|---|---|
| *Smoking initiation (1-tried, 2-not tried)* | | | | | | |
| Self-rated health | Positive | 303 | 231,21 | 70057,5 | 19630,5 | *0,033* |
| | Negative | 144 | 208,82 | 30070,5 | | |
| Life satisfaction | High | 356 | 219,16 | 78022,5 | 14476,5 | *0,049* |
| | Low | 91 | 242,92 | 22105,5 | | |
| Weight-control behaviour | Presence | 194 | 239,16 | 46512 | 21485 | *0,005* |
| | Absence | 253 | 211,92 | 53616 | | |
| *Smoking frequency (1-daily, 2-at least once a week, but not every day, 3-less than once a week, 4-no smoking)* | | | | | | |
| Self-esteem | High | 29 | 184,00 | 5336 | 4901 | *0,048* |
| | Low | 418 | 226,78 | 94792 | | |
| Body-image | Favourable | 83 | 117,49 | 9752 | 4026 | *0,003* |
| | Not favourable | 124 | 94,97 | 11776 | | |
| Weight-control behaviour | Presence | 194 | 237,48 | 46071 | 21926 | *0,027* |
| | Absence | 253 | 213,66 | 54057 | | |
| *Total* | *N=447* | | | | | |

## DISCUSSIONS

This study emphasizes the importance of the social support in reducing the adolescents' smoking initiation and frequency. The time spent with peers proves both positive and negative influences on teenagers' smoking behaviour. Frequently smoking teenagers spent a significantly higher amount of time with friends, but they perceive a relevantly inferior level of social support from family, besides a lower reported health status. On the other hand, frequent smokers seem to perceive a higher level of life-satisfaction. They also proved unfavourable school attitude, lack of satisfaction with their physical constitution and lower perceived level of support from teachers. The increasing need for affiliation as a special characteristic of this age group and the easier involvement in multiple risk situations serve as an explanation for these results.

## CONCLUSIONS

Our results support that school settings play an important role in the smoking behaviour of adolescents, including the perceived support provided by schoolmates and teachers, favourable classroom atmosphere and their own positive attitude toward school. Thus, we can sustain that by enhancing the social support in the school environment, and assuring the development of a more emphatic climate in school classes, may help students in avoiding smoking. The analyzed factors exert important influences on the development of a school-related self-image, based on the appreciations and evaluations of the teenagers' own abilities in learning achievement and the efficiency of social interactions in the school environment.

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