A STUDY ON RISK-TAKING BEHAVIOURS OF ADOLESCENTS AND THEIR PERCEPTION TOWARDS EFFECTS OF HOOKAH USE ON HEALTH (1)

ERGENLERİN RİSK ALMA DAVRANIŞLARI İLE NARGİLENİN SAĞLIĞA ETKİLERİNE YÖNELİK ALGILARININ İNCELENMESİ

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Abstract: Introduction: The aim of this study is to determine the negative risk-taking behaviours of adolescents and their perceptions towards the effects of hookah use on health, and to evaluate the correlation between them. Methods: The study was conducted in eleven high schools at different socio-economic levels in Sakarya, Turkey between the dates of March-April 2015. The sample of the study included 900 high school students volunteering for the study. The study was descriptive and correlational. Data were collected via a questionnaire and two scales called "Perception Scale of Effects of Hookah use on Health" and "Brief Sensation Seeking Scale of Adults". Data were evaluated using SPSS 20. Results: It was found out that 50.3 % of the participants were women, 49.7 % were men and 95.2 % lived with their families. It was detected that total score averages for Brief Sensation Seeking Scale was 10.24±3.92 and it was 61.97±11.12 for Perception Scale of Effects of Hookah use on Health. There was a statistically significant correlation between Perception Scale of Effects of Hookah use on Health and Brief Sensation Seeking Scale of Adults. Though not a strong one, this correlation is negative (r = -0.204 p=0.001). Conclusion: It was determined that adolescents smoking and using hookah had higher levels of risk-taking behaviours while they had lower perceptions towards effects of hookah use on health.

Key Words: Adolescent, Cigarette Use, Hookah Use, Health Effects, Risk-Taking Behaviour

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INTRODUCTION

During the process of becoming an adult (Aras et al., 2007: 186-196) adolescents may exhibit risky behaviours with instant results which can have an impact on their adulthood health (Paulmann et al., 2011; Telef, 2014: 591-604). These behaviours can be listed as using tobacco, alcohol or drug, risky driving, crime trends and crime, early sexual onset, becoming distant from the family, school absenteeism and truancy, class apathy, social adjustment problems, unhealthy diet and lack of activity (Aras et al., 2007: 186-196).

Sensation seeking is a personality trait believed to have a biological basis that expresses as a need for physiological arousal, novel experience, and a willingness to take social, physical, and financial risks to obtain such arousal (Bardo et al., 1996: 23-43). Sensation seeking is associated with a variety of illegal and/or risky behaviors such as the use of illicit drugs (Newcomb and McGee, 1991: 614-628; Palmgreen et al., 2001: 292-295; Stephenson et al., 2002: 23-43; Zuckerman et al., 1993: 757-768), sexual risk-taking (Donohew et al., 2000: 1079-1091; Hoyle et al., 2000: 1203-1231), reckless driving (Heino et al., 1996: 71-79), smoking (Zuckerman et al., 1990: 209-220), and alcohol use (Stacy et al., 1993: 1-24).

The studies conducted reveal that using tobacco products start at adolescence and that the rate of use increases as one grows older. Use of cigarette and other tobacco products during adolescence increases the probability of becoming a tobacco user in adulthood (Akter, 2011: 1-13).

Although the most frequently used tobacco product is the cigarette both in Turkey and in the World, it is remarkable that hookah use is becoming more widespread in recent years (Alvur et al., 2014: 1977-1980; Cinar and Cakmak, 2014: 8005-8006; Ibrahimov et al., 2012: 49-56; Peltzer and Pengpid, 2014: 10033-10038; Shaikh et al., 2012: 1819-1822). It is estimated that 100 million people a day use hookah throughout the World (Alzohairy, 2012: 45-57; All Naggar and Saghir, 2011: 3041-3047; Cinar and Cakmak, 2014: 8005-8006; Ibrahimov et al., 2012: 49-56).

Using tobacco products and its addiction may cause fatal illnesses (Bhagabaty et al., 2015: 811-814; Crawford, et al., 2012: 4733-4738; Okagua et al., 2015: 19-24; Patel et al., 2012: 4173-4176; Sezer and Picak, 2011: 133-143; Maziak, 2013: 1-4). Nearly 5 million people die every year because of tobacco use and this number is estimated to reach 10 million in the next 20-30 years (Alzohairy, 2012: 45-57; All Naggar and Saghir, 2011: 3041-3047; Patel et al., 2012: 4173-4176;).
Being a different form of tobacco use, hookah is considered to be a global tobacco epidemic (Hassoy et al., 2011: 91–99) which has become more widespread among the youth till the beginning of the 21st century (Kuntz and Lampert, 2015: 467-473; Palamar et al., 2014: 227–234; Maziak, 2013: 1–4).

Hookah smoking is often mistaken as a healthy smoking habit, primarily because society is ill-informed about the adverse health risks of hookah (Okdemir, 2013: 1-78). A significant number of adolescents do not perceive hookah as a tobacco product and misunderstand that smoking hookah does not involve any health risk (Akter, 2011: 1-13). A significant part of those who regularly or occasionally smoke hookah are not aware of the health risks of hookah (Bilir et al., 2010: 33-42). In another study, approximately one-third of the subjects misjudge that the adverse health risks of hookah smoking are less severe than the ones of cigarette smoking; about one fourth of the same group share the general misconception that hookah smokers are protected from harmful substances because the smoke is inhaled through the water chamber which filter out nicotine and other toxins in the hookah tobacco. (Hassoy et al., 2011: 91-99) In recent years, hookah smoking has become popular habit among adolescents (Özebe, 2008: 374-377). Adolescents try hookah without being aware that it is a type of tobacco product and after some time they become addicted (Cakmak, 2014: 1-11; Cinar and Cakmak, 2014: 7; Alvur et al, 2014:1977-1980; Akter, 2011: 1-13). Hookah use is the most considerable gateway to nicotine addiction (Hassoy et al., 2011: 91–99).

This study aims to detect the negative risk taking behaviours of adolescents and their perceptions about the effects of hookah use on health, the correlation between their behaviours and perceptions, and to draw attention to the importance of this issue.

**METHOD and MATERIAL**

**Aim and Type of the Study**

The study was conducted as a descriptive and analytical one in order to determine the negative risk-taking behaviors of adolescents and their perception about health effects of hookah, and to examine the correlation between them.

**Research Consent**

The consent of study was obtained from Sakarya University Faculty of Medicine Clinical Research Ethical Committee. Necessary permits were also taken from Sakarya Provincial Directorate of National Education, Sakarya Governor’s Office and school directorates. Students to be included in the study and their parents were informed about the study and the ones who volunteered were included in the study.
Time and Place of the Study

The data were collected from 11 high schools of different types in different socio-economic levels in Sakarya, a province in the North-west of Turkey, between March-April 2015.

Sample and Universe of the Study

The sample of study consisted of 9th, 10th, 11th and 12th grade students at various high schools in Sakarya during the spring semester of 2014-2015 Academic Year. The whole list of high schools in the towns was also considered. Schools were chosen randomly. They were state schools of different types. The research was conducted among 9th, 10th 11th and 12th grade students. In the calculation of sample size confidence interval was taken as 95 %. In determining the number of samples, the scale with the highest number of items was taken into consideration. Number of sample was found to be 750 by calculating 50 times of 15 items in the “Perception Scale of Effects of Hookah use on Health”. Taking into account that there could be some missing data, the number of the sample was calculated as 20 % more and a total of 900 people were given the questionnaire. 42 students who had missing information were excluded and the data from a total of 858 students were assessed.

Student Selection Criteria

Voluntary students, having no communicative problems, studying at 9th, 10th, 11th and 12th grades during the spring semester of 2014-2015 academic year.

Data Collection Tools Used in the Study

Questionnaire containing the individual characteristics and the introductory features of adolescents. The Questionnaire consisted of 33 questions. First 14 questions included demographic features (age, gender, height, weight, parents’ education, school, classes, amount of weekly pocket money, the status of living with family, number of siblings, family income, and employment). Other questions were related to the use of tobacco and hookah.

Perception scale of effects of hookah use on health. It is a 5 point Likert Scale con-
sisting of 15 items, which was developed and its validity and reliability were performed by Cinar and Cakmak in 2014. Each item is scored between 1 and 5, the scores depending on the answers (Cakmak, 2014: 19-21). Minimum score from the scale is 15 and the maximum is 75. In the study by Cinar and Cakmak, Cronbach Alpha value of the scale was found as 0.93. The high score is a sign of high perception about the effects of hookah use on health (Cakmak, 2014: 19-21).

**Brief sensation seeking scale for adolescents:** Developed by Stephenson, Hoyle, Palmgreen and Slater in 2003 (Stephenson et al., 2003: 279–286) and its reliability and validity in Turkish were performed by Celik, Turan and Gungor in 2014, this scale is a 4 point Likert Scale including 4 items, and its Cronbach Alpha value is 0.81. Minimum score from the scale is 4 and the maximum is 16. High scores from the scale show that the level of risk taking is high. There is no reverse coding (Celik et al., 2014: 207-208).

**Collection of Data**

Prior to the administration of questionnaires, school principals were negotiated to decide on the time and place of data collection. Students were informed about the survey, voluntary ones were picked up by using simple random number charts. Data were collected by the researcher accompanied by a Psychological Consultancy and Guidance (PCG) teacher. After data collection, the students who participated in the study were given a booklet titled “Health Hazards of Smoking and Hookah Training Manual”.

**Analysis of Data**

Collected data were transferred to a computer and evaluated using SPSS 20 Statistical program. Socio demographical data, Perception Scale of Effects of Hookah use on Health and Brief Sensation Seeking Scale for Adolescents were evaluated using number and percentage. When evaluating the differences between the groups, Mann-Whitney U and Kruskal Wallis-H tests were used. Since the unit numbers were more than 20, standardized z value was given for Mann-Whitney U test. In the event of significant difference in Kruskal Wallis-H test, the groups having difference were detected by Post-Hoc Multiple Comparison Test. While studying the correlation between the scales, it was seen that the scores did not follow the normal distribution, so Spearman’s Correlation Coefficient was made use of. Significance level (p) was taken as 0.05; p<0.05 meant that there was a significant correlation/difference while p>0.05 meant no significant correlation/difference.

**FINDINGS**

Data of 858 participants were analysed at the end of the survey.
### Table 1. Descriptive Features of Adolescents

| Descriptive Features         | n  | %   |
|------------------------------|----|-----|
| **Age Group**                |    |     |
| 15 and younger               | 259| 30,2|
| 16                           | 254| 29,6|
| 17                           | 218| 25,4|
| 18 and older                 | 127| 14,8|
| **Gender**                   |    |     |
| Male                         | 426| 49,7|
| Female                       | 432| 50,3|
| **School**                   |    |     |
| High School                  | 84 | 9,8 |
| Anatolian High School        | 131| 15,3|
| Science High School          | 92 | 10,7|
| Vocational and Technical school | 502 | 58,5|
| Social Sciences School       | 34 | 4   |
| Fine Arts School             | 15 | 1,7 |
| **Grade**                    |    |     |
| 1                            | 313| 36,5|
| 2                            | 198| 23,1|
| 3                            | 181| 21,1|
| 4                            | 166| 19,3|
| **Number of Siblings**       |    |     |
| 1-2                          | 435| 50,7|
| 3-4                          | 379| 44,2|
| 5-6                          | 36 | 4,2 |
| 7 and more                   | 8  | 0,9 |
| **Living with the family**   |    |     |
| Yes                          | 817| 95,2|

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Table 1 shows the descriptive features of adolescents. 30,2 % of them (n=259) are 15 and younger, 50,3 % (n=432) are women, 49,7 % (n=426) are men, 58,5 % (n=502) are vocational and technical school students. 50,7 % (n=435) have 1-2 siblings, 95,2 % (n=817) live with their families, 65,9 (n=27) live in the dorm, 97,4 % (n=836) do not work, 84,8 % (n=728) have enough amount of pocket money.
Table 2. Smoking and Water Pipe Use Among Adolescents

| Smoking and Water Pipe Use | n | %  |
|---------------------------|---|----|
| Smoking                   |   |    |
| Yes                       | 171| 19,9|
| No                        | 687| 80,1|
| Water Pipe Use            |   |    |
| Yes                       | 186| 21,7|
| No                        | 672| 78,3|
| Smoking in the Family     |   |    |
| Yes                       | 538| 62,7|
| No                        | 320| 37,3|
| Water pipe use in the family|   |    |
| Yes                       | 137| 16  |
| No                        | 721| 84  |
| Total                     | 858| 100 |

Smoking and hookah use among adolescents is studied and seen that 19,9 % (n=171) smoke cigarette while 21,7 % (n=186) use hookah. The rate of smoking in the family is 62,7 % (n=538), and hookah use in the family is 16 % (n=137) (Table 2).

Average score of adolescents from Perception Scale of Effects of Hookah use on Health is 61,97±11,12 (min=15, max=75). Table 3 shows that average score of the total points from Perception Scale of Effects of Hookah use on Health is 4,12 which is equal to “I strongly agree” level.

Adolescents gave the answer “I strongly agree” to the items “Smoking water pipe affects lungs adversely” (item1), “Smoking water pipe increases the risk of cardiovascular disease” (item 4), “Exposure of non-smokers to water pipe smoke causes respiratory tract diseases” (item 5), “Oral infections (cancer, herpes, aphtha etc.) may develop in water pipe smokers” (item 6), “Water pipe smoking cessation affects health positively”(item 8), “Water pipe contains nicotine” (item 9), “Diseases like flu and cold can be transmitted by sharing mouthpiece” (item 11), “Water pipe is not...
more innocent than the cigarette in terms of nicotine” (item 14), “Water pipe mouthpiece should never be shared” (item 15). The other items were answered as “I agree”.

The average score from Brief Sensation Seeking Scale was 10.24±3.92 (min=4, max=16). Average score of the total points was 2.55 and it stood for “I agree”, as seen in Table 4. It was seen that the adolescents gave the answer “I agree” to the whole items in Brief sensation Seeking Scale.

Table 3. An Assessment of the Relationship Between “Scale of Perception about the Effects of Water Pipe Smoking on Health” and “Brief Sensation Seeking Scale for Adolescents”

| Scale of Perception about the Effects of Water Pipe Smoking on Health | R     | p     | N     |
|---------------------------------------------------------------|-------|-------|-------|
| Brief Sensation Seeking Scale for Adolescents                | -0.204| 0.001 | 858   |

There was a statistically significant correlation between Perception Scale of Effects of Hookah use on Health and Brief Sensation Seeking Scale for Adolescents (p<0.05). The study indicates a weak negative correlation (r= -0.204). Adolescents get lower scores from Brief Sensation Seeking Scale, as they get higher score from Perception Scale of Effects of Hookah use on Health (Table 3).

DISCUSSION

It was found out that 21.7% of the adolescents who participated in the study used hookah, 19.9 % of them smoked cigarettes (Table 2). Cakmak, in their study with high school students (2014: 25-43), stated that the rate of hookah use was 19.2 % and smoking cigarettes was 19.6 %. In another study with high school students, the rate of hookah use was 19 % (Akter, 2011: 36-40). Between 2010 and 2012, the study called Monitoring the Future in the USA, among 5540 high school students revealed that the rate of hookah use was 18 % (Palamar et al., 2014 :227–234). Another study in Canada in 2012 called National Youth Tobacco Survey showed that 10 % of 31396 participants between the ages of 9-12 used hookah (Maziak et al., 2015: :i3–i12.). In 2012, National Youth Tobacco Survey in America, it was seen that 14.7 % of 24658 secondary and high school students used hookah (Lee et al., 2015 :409-15). In United Arab Emirates 21% of 560 secondary school students used hookah, 30 % smoked both...
hookah and cigarette and 30 % used hookah everyday (Shemmari et al., 2015: 427-430). In a study in Malesia 57,4 % of 239 participants over 18 were found out to use any tobacco product, 50,7% only smoked cigarette, 5,9 % only used hookah and 42 % smoked both hookah and cigarette (Al Naggar et al., 2014: 10841-10846). The results show similarity with the literature.

The total score averages of adolescents from Perception Scale of Effects of Hookah use on Health were 61,97±11,12, min=15, max=75. The average score from total scores of Perception Scale of Effects of Hookah use on Health was 4,12 which is equal to “I strongly agree”. These results show that adolescents have good level of perception about effects of hookah use on health but they need to improve their knowledge on the subject.

Cakmak, (2014: 25-43) stated in their study that total score averages of adolescents from Perception Scale of Effects of Hookah use on Health was 58,47±1,25, average score from scale item scores was 3,89 and it was equal to “I agree” level. In another study that Cakmak, (2014: 25-43) carried out in Tokat there were similar results.

Total score average from Brief Sensation Seeking Scale was 10,24±3,92, min=4, max=16. Average score of total scores from the answers to the scale items was 2,55 which contributes to “I agree” level as seen in Table 4. Adolescents gave the answer “I agree” to all the items in Brief Sensation Seeking Scale. These results indicate a high level of risk taking behaviour in adolescence.

There was a statistically significant correlation between the scores of Perception Scale of Effects of Hookah use on Health and Brief Sensation Seeking Scale (p<0,05). Though not a strong one, this is a negative correlation (r=-0,204). It was found out that the higher scores adolescents got from Perception Scale of Effects of Hookah use on Health, their scores from Brief Sensation Seeking Scale were lower (Table 3). Adolescents smoking hookah and cigarette had a high level of risk taking behaviour and a low level of perception about the effects of hookah use on health. As their perception on this subject increased, their tendency to risky behaviours decreased.

**CONCLUSION**

It was concluded that adolescents smoking hookah and cigarette had high levels of risk taking behaviours while their perception about effects of hookah use on health was low. The more their perception increased, the more their tendency to risky behaviours decreased.

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