

RESEARCH ARTICLE

Hazardous Health Behaviour among Medical Students: a Study from Turkey

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Abstract

Background: Hazardous health behaviour in young people is an important factor that affects the individual risk for non-communicable diseases and other disorders later in life. This study aimed to determine the hazardous health behaviour of first and last class medical students of Erciyes University. **Materials and Methods:** This descriptive study was carried out with 240 medical students from the first and 130 students from the last (sixth) class. Data were obtained by questionnaire between March-April 2012. In total, 339 students were included with a response rate of 91.6%. Socio-demographic characteristics, school success, self-reported economic difficulties, health perceptions, hazardous health behaviour related to chronic disease, tobacco, alcohol, substance use, body weight, height, traffic, violence and nutrition were assessed in line with the literature. **Results:** Of the participants; 64.0% were from first and 36.0% were from the last class. Mean ages for the first and last classes were 19.4±1.5 and 24.0±1.5 years, respectively. In the current study, males exhibited more hazardous behaviour than females. Some 19.8% of the students in the study group used alcohol, 35.4% used a waterpipe, and 24.8% used tobacco at least once. These rates increased in both genders in the last class and the increase in males was significant. Some 3.8% of the students in the current study used pleasure-inducing illegal substances at least once. All the students participating in the current study were single, the number of males reported not using condoms (8.6%) was 4.56 times higher compared to females. Some 64.0% of the students did not perform physical activity lasting at least 30 minutes for five times a week, 13.0% did not sleep for mean 7-8 hours daily, males having a 2.9 times higher risk. More than 1/3 of the students did not consume cooked vegetable dishes and ¼ did not consume fresh fruits and salads, the rates were higher among males. **Conclusions:** In the current study, hazardous health behaviour was prevalent among medical students, with higher risks among males and last class students. According to these results, medical curriculum may be focused on decreasing hazardous health behaviour. In addition, in order to prevent unhealthy behaviour, the number of youth-friendly health facilities should be increased.

Keywords: Health - behaviour - medical students - risk - Turkey

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Introduction

University life is a new period for young people after their high school education. After a difficult exam, in the universities they win, the majority of these young people initiate their new life distant from their families. In general, young people are accepted as healthy by the health professionals and the public. Their difference from children and adolescents is that hazardous behaviours in this period are the most prevalent cause of deaths and disabilities. Hazardous and unhealthy behaviours leading to health problems also effect the future life of the young people (Shaheen et al., 2015, Kann et al., 2014). Hazardous behaviours are generally tended to be repeated (Murphy-Hoefer et al., 2005, d'Alessio et al., 2006). The presence of more than one hazardous behaviour also increase with age (Nacar et al., 2014).

To achieve a decrement in hazardous behaviours in public may be possible by a long-term struggle, especially with the effective and faithful contribution of health professionals along with the public. To determine hazardous behaviours, also facilitate to take the precautions. The most prevalent hazardous behaviours among young people include unhealthy nutritional habits, the use of tobacco, alcohol and other substances, insecure sexual behaviours, insecure behaviours leading to injuries, behaviours including violence, insufficient physical activity, depression and suicide (Kann et al., 2014).

The hazardous behaviours of the young people may be due to their insufficient knowledge on these subjects. However, the repeat of these behaviours even by medical students refer that, these behaviours are gained towards the value judgement in addition to insufficient knowledge. In context of health services, related to hazardous behaviours,

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it is crucial to obtain true data, to produce right strategies in order to produce intervention programmes required and they will also contribute to the progress of the public. Knowing the hazardous behaviours of the physicians of the future is very important that it will make contribution to the tackling of the subject. Knowing the impact of medical education on the hazardous behaviours is also important from the aspect of discussing the curriculums of medical schools.

The current study aimed to determine the hazardous health behaviours of first and last class medical students of Erciyes University.

Materials and Methods

This descriptive study was planned to be carried out with all medical students attending Erciyes University, including 240 students from the first and 130 students from the last (sixth) classes. The data were obtained by questionnaire method between March-April 2012. Twenty-three students from the first and eight students from the last classes cannot be reached with the reasons of not accepting to participate in and their absence at the time of data collection. Totally, 339 students were included and

the response rate was 91.6%. The students who accepted to participate in, filled their questionnaires by themselves.

The socio-demographic characteristics, school success, self-reported economic, health perceptions, hazardous health behaviours related to chronic disease, tobacco, alcohol, substance use, body weight, height, traffic, violence and nutrition were questioned via a questionnaire prepared by the researchers according to the literature. Body weight and height were measured with digital scale with a stadiometer with the students wearing the lightest clothes and barefeet by the researchers. Weight-for-height of the students were evaluated through body mass index (BMI)=body weight (kg)/height²(m) calculation. The evaluation were performed according to World Health Organization (Centers for Disease Control and Prevention). BMI<18.5 kg/m² is accepted as underweight, 18.5-24.9 kg/ m² as normal weight, 25-29.9 kg/m² as overweight and ≥30.0 kg/m² is accepted as obese, respectively.

The data analysis were performed with SPSS 18.0 programme using number, percent and Chi-square test. The study was planned in accordance with Helsinki principles and ethical consent was obtained from Erciyes University. The students are asked not to give write

Table 1. The Evaluation of some hazardous health behaviours in first and last class students according to genders (%)

Some hazardous health behaviours (n=339)	%	Males			Females			Total		
		First class (n=114)	Last class (n=69)	x ² /p	First class (n=103)	Last class (n=53)	x ² /p	First class (n=217)	Last class (n=122)	x ² /p
Tobacco use at least once	24.8	30.7	43.5	3.064 0.080	7.8	20.8	5.518 0.019	19.8	33.6	7.969 0/005
Alcohol use at least once	19.8	20.2	39.1	7.777 0.005	8.7	15.1	1.456 0.226	14.7	28.7	9.195 0.002
Waterpipe use at least once	35.4	43.0	56.5	3.156 0.076	14.6	32.1	6.582 0.010	29.5	45.9	2.560 0.110
Pleasure-inducing illegal substance use at least once	3.8	8.1	1.4	3.596 0.058	1.9	1.9	0.001 0.981	5.1	1.6	3.617 0.057
Sometimes/never use of crash helmets while riding motorcycle/ bicycle	30.1	41.2	29.0	2.776 0.096	25.2	17.0	1.372 0.241	33.6	23.8	0.099 0.753
Being in a car driven by a drunk driver in the previous month	7.1	13.4	10.1	0.422 0.516	1.0	1.9	0.225 0.635	7.5	6.6	0.110"
Sometimes/never use of safety belt	41.6	55.0	33.3	7.992 0.005	49.0	13.2	19.24 0.001	52.1	24.6	24.11 0.001
Not use condoms by himself/ herself/partners in the last sexual intercourse	8.6	14.0	11.6	0.225 0.635	2.8	3.8	0.084 0.772	8.8	8.2	0.031 0.860
Experiencing physical violence by a friend in the last year.	5.6	14.9	-	11.34 0.001	1.0	1.9	0.232 0.630	8.3	0.8	8.248 0.004
Being in a fight in the last year	8.6	16.4	7.2	3.148 0.076	4.0	3.8	0.003 0.955	10.4	5.7	2.138 0.144
Rarely/never perform physical activity lasting at least 30 minutes for five times a week.	64.0	50.9	72.5	8.281 0.004	63.1	83.0	6.591 0.010	56.7	77.0	14.06 0.001
Rarely/never sleep for mean 7-8 hours daily.	13.0	22.8	10.1	4.662 0.031	6.8	7.5	0.030 0.862	15.2	9.0	2.65 0.104

names on the questionnaire, in order that they will feel comfortable to answer the questions.

Results

Of the participants; 64.0% were from first, 36.0% were from the last classes. Mean ages for the first and last classes were 19.4±1.5 and 24.0±1.5 years, respectively and totally 21.0±2.7 years. There were no married students in the first class, while there was only one in the last class.

The evaluation of some hazardous health behaviours of the study group according to genders are given in Table 1. Of the males; 30.7% in the first and 43.5% in the last classes reported tobacco use at least once. Of the females; 7.8% in the first and 20.8% in the last classes reported tobacco use at least once. Using tobacco at least once among females and in the last class were detected to be more significant.

Of the students; 20.2% of males and 8.7% of females in the first class, 39.1% of males and 15.1% of females in the last class reported alcohol use at least once, respectively. Using alcohol at once among males and for the entire group being in the last class were detected to be more significant. 43.0% of males and 14.6% of females in the first; 56.5% of males and 32.1% of females in the last classes reported waterpipe use at once, respectively. Using waterpipe at once among females and for the entire group, being in the last class were detected to be more significant. For both genders; according to their classes there were no significant differences for using pleasure-inducing illegal substances at once, not using crash helmet while riding a motorcycle/bicycle, being in a car driven by a drunk

driver in the last month. Of the male students not using safety belt; 55% were in the first and 33% were in the last classes. Of the female students not using safety belt; 49% were in the first and 13.2% were in the last classes. Not using safety belt among both genders and being in the first class were found to be significant. When condom use was asked for the last sexual intercourse for the students and their partners, 14.0% of the males in the first and 11.6% in the last classes reported themselves or their partners not to use condoms. Exposure to physical violence from friends in the last year was 14.9% for the males in the first class and 1.0% for the females. For the males in the first class, exposure to physical violence in the last year was detected to be higher. The percentage of students being in a fight in the last year was 16.4% for males and 4.0% for females in the first and 7.2% for males and 3.8% for females in the last classes, respectively. The rate of performing rarely or never at least 30 minutes lasting physical activity for 5 times a week was 50.9% for males and 63.1% for females in the first and 72.5% for males and 83.0% for females in the last classes, respectively. The rate of rarely or never sleeping mean 7-8 hours daily was 22.8% for males and 6.8% for females in the first and 10.1% for males and 7.5% for females in the last classes, respectively.

Table 2 represent the evaluation of hazardous nutritional behaviours according to genders for the participants. Of the males and females; 21.2% and 9.7% in the first; and 11.6% and 5.7% in the last classes were skipping breakfast, respectively. Every day/frequently fast-food consumption was 52.2% for males and 53.4% females in the first and 56.5% for males and 62.3% females in the last classes; respectively. 44.2% of the males and

Table 2. The Evaluation of Hazardous Health Behaviours in Terms of Nutrition in First and Last Class Students According to Genders (%)

Hazardous health behaviours in terms of nutrition	%	Males			Females			Total		
		First class	Last class	x ² /p	First class	Last class	x ² /p	First class	Last class	x ² /p
		(n=114)	(n=69)		(n=103)	(n=53)		(n=217)	(n=122)	
Rarely/never consume at least 3 meals daily	7.4	11.5	8.7	0.361 0.548	5.8	-	3.151	8.8	5	1.663 0.197
Rarely/never have breakfast in the morning	13.3	21.2	11.6	2.75 0.097	9.7	5.7	0.751 0.386	15.7	9	3.055 0.081
Daily/mainly consume chips, hamburger, toast type fast-foods	54.9	52.2	56.5	0.32 0.572	53.4	62.3	1.119 0.29	52.8	59	1.226 0.268
Rarely/never consume cooked vegetable dishes daily.	33.9	44.2	46.4	0.078 0.779	16.5	30.2	3.929 0.047	31	39.3	2.408 0.121
Rarely/never consume fresh fruits and salads daily.	23.6	33.6	26.1	1.144 0.285	12.6	20.8	1.778 0.182	23.6	23.8	0.001 0.974
Rarely/never consume one from white meat/red meat/legumes daily.	10.9	17	7.2	3.506 0.061	11.7	1.9	4.367 0.037	14.4	4.9	7.188 0.007
Rarely/never consume at least one from milk, ayran, yoghurt, cheese daily.	7.1	11.5	4.3	2.736 0.098	7.8	-	4.383 0.036	9.8	2.5	6.285 0.012
Using weight loss drugs without physician counselling in the last 30 months to lose weight	2.7	6.4	-	4.613 0.032	1	1.9	0.225 0.635	3.8	0.8	2.596 0.107
BMI>25 kg/m ²	26.5	30.7	44.9	3.772 0.052	20.4	5.7	5.831 0.018	25.8	27.6	0.17 0.68

16.5% of the females in the first and 46.4% of the males and 30.2% of the females in the last classes; reported not to consume cooked vegetable dishes daily, respectively. Females according to the classes induced the significant difference for not consuming cooked vegetable dishes. 33.6% of the males and 12.6% of the females in the first and 26.1% of the males and 20.8% of the females in the last classes reported not to consume fresh fruits and salads daily, respectively. 17.0% of the males and 11.7% of the females in the first and 7.2% of the males and 1.9% of the females in the last classes reported not to consume one from white/red meat or pulses. The habit of not consuming meat or pulses daily was significantly higher among females in the first class. 11.5% of the males and 7.8% of the females in the first and 4.3% of the males in the last classes; reported not to consume foods in milk, ayran, yoghurt, cheese group at least one daily. Not to consume milk and dairy product rate was significantly

higher among females and for the entire group being in the first class. 6.4% of males and 1.0% of females in the first class preferred to use weight loss drugs without physician recommendation in the last 30 days. The use of these kind of drugs among males in the first class was detected to be significantly higher. According to the BMI evaluation; 30.7% of the males and 20.4% of the females in the first and 44.9% of males and 5.7% of the females in the last classes, had BMIs higher than 25 kg/m². Females in the first class having BMIs higher than 25 kg/m² were significantly higher.

The multiple logistic regression analysis of the factors related to the medical students' hazardous health behaviours were given in Table 3. In the last class compared to first class; the risk of tobacco use at least once was 2.06 times, alcohol use at least once was 2.3 times, waterpipe use at least once was 2.05 times, not using crash helmet while riding motorcycle/bicycle sometimes/

Table 3. Logistic Regression Analysis of the Factors which may have an effect on some hazardous health Behaviours of the Students

Some hazardous health behaviours (n=339)	Males OR (95% CI)	Last class OR (95% CI)
Tobacco use at least once	3.98 (2.24-7.06)	2.06 (1.22-3.47)
Alcohol use at least once	3.06 (1.67-5.62)	2.32 (1.33-4.03)
Waterpipe use at least once	3.61 (2.21-5.91)	2.05 (1.27-3.33)
Pleasure-inducing illegal substance use at least once	N/A**	N/A
Sometimes/never use of crash helmet while riding motorcycle/bicycle	2.05 (1.26-3.34)	0.59 (0.35-0.98)
Being in a car driven by a drunk driver in the previous month	10.52 (2.43-45.50)	N/A
Sometimes/never use of safety belt	1.59 (1.01-2.50)	0.30 (0.18-0.50)
No use of condoms for the last sexual intercourse by himself/herself/partners	4.56 (1.70-12.26)	N/A
Experiencing physical violence by a friend in the last year	8.66 (1.95-38.39)	0.08 (0.01-0.63)
Being in a fight in the last year	3.59 (1.42-9.07)	N/A
Rarely/never perform physical activity for at least 30 minutes for five times a week	0.59 (0.37-0.93)	2.66 (1.60-4.41)
Rarely/never sleep mean 7-8 hours daily	2.90 (1.41-5.96)	N/A

*References: Class: First class Gender: Girls; **N/A: Not available

Table 4. Logistic Regression Analysis of the Factors which may have an Effect on Hazardous Health Behaviours of the Students in Terms of Nutrition

Hazardous health behaviours in terms of nutrition (n=339)	Males OR (95% CI)	Last class OR (95% CI)
Rarely/never consume at least 3 meals daily	2.90 (1.13-7.45)	N/A
Rarely/never have breakfast in the morning	2.33 (1.18-4.62)	N/A
Every day/often consume fast-foods like chips, hamburger, toast	N/A	N/A
Rarely/never consume cooked vegetables daily	3.03 (1.87-4.90)	N/A
Rarely/never consume fresh fruits and salads	2.43 (1.42-4.15)	N/A
Rarely/never consume one from white meat/red meat/legumes daily	N/A	0.31 (0.13-0.77)
Rarely/never consume at least one from milk, ayran, yoghurt, cheese daily	N/A	0.24 (0.07-0.81)
Using weight loss drugs without physician counselling in the last 30 months to lose weight	N/A	N/A
BMI>25 kg/m ²	3.10 (1.83-5.27)	N/A

References: Class: First class Gender: Girls; **N/A: Not available

continuously was 1.7 times (1/0.59), not using safety belt was 3.3 times (1/0.30), exposure to physical violence by a friend in the last year was 12.5 times (1/0.008) and not to perform physical activity at least 30 minutes for five times a week risk was 2.6 times higher, respectively.

The risk of tobacco use at least once was 3.9 times, waterpipe use at least once was 3.6 times, not using crash helmet while riding motorcycle/bicycle risk was 2.1 times, being in a car driven by a drunk driver in the last month risk was 10.5 times, not using safety belt risk was 1.6 times, not using condom risk in the last sexual intercourse by themselves or their partners was 4.6 times, exposure to physical violence by friend was 8.6 times, fighting in the last year was 3.6 times, not performing physical activity for five times a week for 30 minutes was 1.7 times (1/0.59), not sleeping mean 7-8 hours daily was 2.9 times higher in males compared to females, respectively.

Table 4 demonstrated the factors affecting hazardous health behaviours of medical students in nutritional aspects with multiple logistic regression analysis. Compared to first class, last class students the risk of not to consume white/red meat/legumes was 3.2 times (1/0.31), not to consume at least one from milk, ayran, yoghurt and cheese group was 4.2 times (1/0.24) higher, respectively. In males compared to females; the risk of not consuming at least 3 meals daily was 2.9 times, skipping breakfast in the morning was 2.3 times, rarely/never consuming cooked vegetable dishes daily was 3.0 times, not consuming fresh fruits and salads was 2.4 times, BMIs higher than 25 was 3.1 times higher, respectively.

Discussion

The importance of the current study which investigated the hazardous health behaviours of medical students is not only to construct the fundamentals of healthy young adulthood but also for the medical students who will play a role model for improving public health.

In the current study, males exhibited more hazardous behaviours than females (Table 1). In a study on behaviours of taking risk in adolescents, males found to take more risks than females, similar to our results (Braams et al., 2015).

For the entire group, 24.8% used tobacco at least once, using tobacco rates increased in the last class for both genders, and the increment in girls were significant (Table 1,3). In a study conducted with high school students this rate was 55.9% (8), and 64.3% in a study conducted with medical students in the last class. In a study performed in the year 2006, for the same medical students, the rate of tobacco use in last class (31.2%), was found to be higher than first class (24.7%) supporting the current study. Compared to previous years, as the rates of tobacco use decreased, however being still high. As the rate of tobacco, alcohol and waterpipe use among medical students have increased, in the curriculums educational courses not only aiming to provide knowledge, but also towards attitude and behaviour should be included.

19.8% of the students in the study group used alcohol at least once. This rate increased in both genders and in the last class and the increase in males was significant (Table

1,3). According to the studies conducted in our country, Turkey, the rate of students using alcohol at least once are between 19.4%-67.5% (Nacar et al., 2014, Simsek et al., 2007, Camur et al., 2007). Differently in the current study, the rate of students alcohol use at least once was lower. Although the medical education they obtain, the high rates of alcohol and tobacco use provoking thought that the knowledge did not reflect to behaviour.

In text cited as Maziak (2010) waterpipe use is a global health risk increasing worldwide, especially among young people. In the current study, 35.4% of the entire group reported waterpipe use at least once (Table 1,3). The waterpipe use among medical students was high, the risk was higher for males and last class students, and similar studies supported our results (Poyrazoglu et al., 2010, Primack BA et al., 2013, Sahin and Cinar, 2015).

Medical students experience a heavy psychological stress and possess a higher risk for the use of illegal substances. Besides; family structure, peer pressure, the fight of academic success, easy access to illegal substances are the main causes for young people to use illegal substances (Roncero et al., 2015, Kabir et al., 2013). 3.8% of the students in the current study, used pleasure-inducing illegal substances at least once (Table 1). The rate of medical students reporting illegal substance use differs from 2.5%-to-7.6% in Turkey (Simsek et al., 2007, Camur et al., 2007, Yalcin et al., 2009, Gorgun aet al., 2010), while it was 17.0% in Saudi Arabia (Al-Sayed et al., 2014).

The most efficient way of preventing head injuries and deaths due to bicycle and motorcycle accidents is to use crash helmets. However WHO, pointed out a lower rate of using crash helmet among young people riding motorcycle. The reason of not using crash helmet, young people reports peer pressure and the ravel of their hair styles (Youth and Road Safety, 2007). 1/3 of the study group reported no use of crash helmet while riding bicycle or motorcycle, and the rates for the ones who were not using crash helmets were significantly higher among males compared to females and in the first class compared to the last class.

Less than half of the students reported to have been in a fight in the last 12 months. Although being in a fight rates were higher among males, the rates were also prominently high among females. In the studies conducted with high school students in Turkey, the rates of being in a fight were between 41.0%-50.0%, males had higher rates, females reached 1/3 of the rates (Kara et al., 2003,). For the serenity of the public, it should be our priority to determine the students prone to violence, providing psychological guidance and counselling services to them through the active agencies of health services in universities.

Globally, the number of sexually-active adolescents are increasing, however due to their contraceptive requirements which are not met, they are exposed to sexual and reproductive health risks (24). Although all the students participated in the current study were single, the number of males reported not to use condoms by himself/his partner (8.6%) was 4.56 times higher compared to females. In Turkey, university students have sexual intercourses without protection in high rates (19.7%-50%) (Simsek et al., 2007, Camur et al., 2007). Hence, in the

first year medical students should be provided an education on sexual health and reproductive health, sexual health and reproductive health topics should take more place in curriculums.

Sedentary young people are at risk of obesity, hypertension, diabetes, coronary heart diseases and some types of cancer (Nacar et al., 2014, Amin et al., 2014). In the current study, 64.0% of the students did not perform physical activity lasting at least 30 minutes for five times a week. According to the studies performed in Turkey (Yilmazel G 2013, Bayrak et al., 2010), university students have high rates of irregular physical activity (33.5%-75.4%). This situation is also prevalent among university students from other countries of the world. In text cited as Irvin (2004), insufficient physical activity is a serious problem among university students, half of the university students did not perform physical activity according to a study from totally 27 countries including USA, Australia, Canada, China, Germany, Nigeria and 21 European countries. "Healthy Life and Active Life Programme" initiated by Turkish Ministry of Health in the year 2010, should be implemented in university campuses and student clubs should be constructed in the context of life-long learning aims.

Sleep quality is crucial for a healthy and successful life (Von Ruesten et al., 2012). In the current study, 13.0% of the medical students did not sleep for mean 7-8 hours daily, males have 2.9 times higher risk. It is known that university students have a different sleep rhythm. These rhythms lead to common student habits (consumption of alcohol and caffeine, environmental noise, go into sleep in a sad mode) associated with poor sleep hygiene and quality (Brown et al., 2002).

University youth mainly did not follow the healthy nutrition recommendations, and consume a diet poor in vegetables, fruits and whole cereals, high in processed, ready-to-eat, fast-food type foods which lead to obesity and many chronic diseases in adulthood (Chourdakis et al., 2010, Roldan et al., 2005). For medical students, to acquire appropriate nutritional habits is very important for not only themselves but also due to their role of sample model for the community. Yet, in the current study, more than half of the students consume daily/mainly fast-foods and the consumption rate of these kind of foods were higher in the last class for both genders. More than 1/3 of the students did not consume cooked vegetable dishes and 1/4 did not consume fresh fruits and salads, the rates were higher among males (Table 2). In text cites as Yilmazel (2013) and Ozdinc (2004), similar results were obtained from other studies, and the fast-food consumption rates were between 42.0%-87.0%.

Another incorrect behaviour related to nutrition in youth is skipping meals. Impaired nutritional habits including skipping meals or irregular meal intervals effect the school performance of medical students and nutritional habits are reported to be associated with the prevalence of fatigue (Tanaka et al., 2008). The rate of students skipping meals was low in the current study (Table 2).

In the current study, approximately 3/4 of the students were at their ideal weights according to BMI. The prevalence of overweight or obesity were higher in males

compared to females. The risk of having a BMI higher than 25 kg/m² was three times higher among males. Females were thinner than males (Tables 2,4). Our results are in accordance with the other studies (Soriano et al., 2000; Simsek et al., 2007; Nacar et al., 2014). The lower BMIs among females compared to males may be due to loom large body image in youth. A sensitivity to body image may lead to limited dietary content and a decrement in protein and energy intakes. Alternatively, it may be a positive condition for the students to have lower rates of obesity in a general health perspective.

In conclusion, in the current study, the hazardous health behaviours were increased among medical students, with higher risks among males and last class students. According to these results, medical curriculum may be focused on decreasing especially the hazardous health behaviours of the students. Besides, in order to prevent these unhealthy behaviours, the number of youth-friendly health facilities should be increased.

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