Health-Risk Behaviors among High-School Students in Southern Thailand

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Objective: Determine the prevalence of health-risk behaviors among high-school students in southern Thailand.

Material and Method: A sample of 11,135 students from grade seven, nine, and eleven, and the second year students at vocational schools in southern Thailand were surveyed in 2005 using a self-completed questionnaire.

Results: There was a high prevalence (more than 70%) of traffic problems. The authors found that 7.6% of the students carried a weapon and 14.0% used physical violence. Diet pills were taken without doctor’s advice by 2.3% of respondents. Relating to sexual practices, 7.0% of all students admitted to having had sexual intercourse. Among these students, 13.7% reported that neither party had used birth control during this encounter and 13.9% had been pregnant or made someone pregnant. Thirteen point four percent had felt depressed and 4.6% had attempted suicide during the last year. The prevalence of lifetime compared with past 30 day use, respectively, was 16.1% and 8.2% for smoking, 27.7% and 15.5% for drinking alcohol, and 6.9% and 3.8% for using at least one illicit substance. A higher prevalence of risk behaviors were found among the second year students at vocational schools.

Conclusion: The present findings suggest that High School Administrators should pay greater attention to health-risk behavior, especially for vocational school students, when considering health promotion programs in their schools.

Keywords: Health-risk behaviors, Student, Prevalence

A study in 1999 of the Thailand Health Profile (THP) revealed that the major health-risk behaviors among Thai people were unsafe sex, smoking, drinking alcohol, hypertension, lack of helmet use among motorcyclists, overweight/obesity, malnutrition, elevated blood cholesterol levels, minimal consumption of vegetables and fruit, and physical inactivity(1). Previous studies on health behaviors mentioned in the report also indicated that the trend of helmet or seat belt non-use, having sexual intercourse without a condom, smoking, drinking alcohol, and substance abuse had increased among teenagers(1).

A study on driving behaviors among young drivers found a declining trend in consistent seat belt use from 35.8% to 23.5% and helmet use from 29.0% to 16.0% in 1996 and 2003, respectively(1). Furthermore, the proportion of drunk drivers had risen from 40.5% in 2001 to 53.5% in 2003(1). There was also a growing trend of teenagers having sexual relations and refusing to wear a condom(1). Among those engaging in sexual intercourse, 12% had never worn a condom when having sex with a stranger (not a steady girlfriend)(1).

In addition, alcohol consumption among boys aged 11-19 years had risen to 21.2% in 2003(2). Among girls aged 15-19 years, there was a six-fold increase in alcohol consumption from 1.0% in 1996 to 5.6% in 2003(1,3). Among the 5.6% cohort of girls, 14.1% were frequent drinkers (1-2 times or more per week)(2,3). The smoking rate during 1999-2001 and 2001-2003 also showed an increase among young people aged 15-24 years(1).

A national survey on illicit drug use found that 6.2% of all students displayed behavior that strongly implicated drug use, rising to 7.0% in 2002(1,4). In addition, mortality rates from diet pills, suicide, and violent behavior among teenagers had become hot..
news in Thailand. According to a 2002 Suan Dusit Poll surveying girls and young women aged 12-22 years and living in Bangkok and the greater Bangkok area, 7.5% had taken diet pills and 14.2% would choose to take diet pills to lose weight(5). Concerning suicide rate during the 1996-2003 period, the average rate was 0.64 and 7.43 per 100,000 people aged 10-14 years and 15-19 years, respectively(6).

Even though previous Thai studies have paid scant attention to health-risk behaviors, apart from a cursory study of health-risk behaviors of high school and vocational school students, those studies were also not intended to be long-term studies of school age children. Nowadays, however, behavior among Thai teenagers is changing and a surveillance system to detect and record the magnitude of the health risk behaviors is needed.

The current project, conducted by the Drug and Alcohol Research Group at Prince of Songkhla University in Southern Thailand, aimed to provide information at a regional level on the magnitude of health risk behaviors, substance abuse, and attitudes towards substance use in school age children. Annual surveys of regionally representative students in public and private secondary schools in Southern Thailand have been carried out since 2002. In the present paper, the authors report health-risk behaviors based on data collected in 2005.

Material and Method

Subjects

Eight southern provinces of Thailand: Songkhla, Pattani, Phuket, Suratthani, Phatthalung, Trang, Nakhon Si Thammarat, and Yala were selected as being representative of the demographic and geographic characteristics of Southern Thailand. The selection of schools was based on a list of schools in the province, which was obtained from the Provincial Education Office. Six schools were randomly selected in each province. Key issues that influenced the school selection included the following criteria: whether the school was in a rural or urban area, was a private or public, and was an ordinary or vocational school. Vocational schools in Thailand have two certificate levels. The first level is for students who have finished ninth grade in high school and study for a three-year Certificate in Vocational Education. Thus, the students who are in the second year at a vocational college in the certificate course are about the same age as those in grade eleven of the ordinary school. Those who finish year-three of the primary level can continue their study for a further two years to obtain a Diploma in Vocational Education.

Instruments

The questionnaire used in the present study was derived from questions found in the following publications; “U.S. Monitoring the Future Project”(7), “U.S. Youth Risk Behavior Surveillance System”(8). The wording and format of the questionnaire was modified to ensure that it could be easily understood by high school students. The questionnaire was piloted with the help of 30 school children in various school levels prior to the start of the study. Subsequently, the 96-item self-reported questionnaire was developed.

The questions asked in the questionnaire were: demographic characteristics, students’ academic performance, behaviors that contribute to unintentional injuries i.e. the use of crash helmets or seat belts and driving after drinking alcohol, and behavior that contributes to violence in the form of carrying a weapon, threatening, physical fighting, and non-consensual sex. The areas of depression and attempted suicide, sexual behaviors, and body weight were also included in the questionnaire.

The authors asked for information covering the preceding 30 days with regard to the consumption of alcohol and smoking. With regard to alcohol, the authors asked about their drinking habits, including lifetime drinking, the frequency of drinking, binge drinking (defined as drinking more than five glasses of beer/wine/whiskey within a couple of hours) and drinking until intoxicated (drunk); just a sip for tasting was not included. Similar questions were asked about smoking with the exception that lifetime smoking was not measured in frequency but the authors did ask about the quantity of smoking in the last 30 days. The questionnaire asked for information on lifetime substance use, use within a year of the interview, and use during the preceding 30 days.

Procedure

In each school, students in grade seven, nine and eleven for ordinary schools and the second year for vocational schools were selected for the survey. All classes in an educational level were recruited if there were three classes or less in that level. If there were more than three classrooms, three with students of mixed academic performances were randomly selected by the school teachers. The present study was undertaken between June and September 2005. A self-completed questionnaire was distributed to all...
the students during regular class time by a research assistant. Students were informed about the objectives of the present study and of their right to decline to participate without that having any effect on their student status. The authors stressed that participation was totally voluntary and that all questionnaires would be anonymous. The questionnaire took between 40-50 minutes to complete. The students were asked to answer all the questions on the questionnaire as completely as possible.

Data analysis
The weighted prevalence for a one-stage stratified sampling survey was calculated for each behavior. The primary sampling unit was the school. The number of selected schools sampled in each category (private/public, ordinary/vocational, urban/rural) divided by the total number of schools of that category within the selected provinces was used as the sampling probability. For example, there were 12 public, ordinary schools in the urban area in Nakhon Si Thammarat Province, and one school was randomly selected to participate in the present study, therefore the sampling probability was 1/12. The sampling probability was taken into account when calculating all percentages using software STATA version 7(9). Data were expressed as mean ± standard deviation for continuous data and percentage for categorical data.

Results
Demographic data
The questionnaire was completed by 11,135 students from 48 high schools across eight provinces in Southern Thailand. There were 3,255, 3,188, 2,570, and 2,122 students from grade seven, nine, and eleven in the ordinary schools, and year-two for vocational schools, respectively. For the demographic characteristics, 57.6% were female. The mean age was 12.7 ± 0.6 for grade seven, 14.5 ± 0.6 for grade nine, 16.7 ± 0.6 for grade eleven, and 16.9 ± 0.8 for the second year at vocational colleges. The mean height was 159.0 ± 9.4 centimeters and the average weight was 49.0 ± 10.7 kilograms. Most students were Buddhists (80.2%). Overall, 70% of students rated their school performance as fair or good.

Health-risk Behaviors
In the present study, the authors have focused on the following risk behaviors: traffic safety, violence, depression and suicidal ideas, body weight, sexual behavior, smoking, drinking alcohol, and illicit drug use.

Traffic Safety
During the 12 months preceding the survey, more than 90% of all students had ridden a motorcycle, driven, or been a passenger in a car. The majority of students had rarely or never worn a crash helmet while riding a motorcycle (72.7%) or a seat belt as a driver or passenger in a car (78.8%). Among those who had driven or ridden in the previous 30 days before the survey (76.5%), 13.1% had done so after drinking alcohol. The prevalence categorized by gender and level is shown in Fig. 1.

Violence
About 7.6% of students carried a weapon and 3.4% admitted to having been threatened or injured
with a weapon during the 30 days preceding the survey. In this time frame, fighting that involved physical harm was reported for by 14.0% of students and 2.9% of these had been injured and needed hospitalization, while 2.1% had fought four or more times without injury. Moreover, the authors found that the prevalence of sexual assaults was 2.2% and for non-consensual sex 1.9%. The prevalence categorized by gender and level is shown in Fig. 2.

**Depression, suicidal ideas and attempted suicide**

During the year preceding the survey, 13.4% of students said they had felt depressed or hopeless almost every day for two consecutive weeks, leading to resulting in them being unable to do their usual activities. The authors found that 5.2% of the students have seriously considered suicide; 5.3% had made a suicide plan, and 4.6% had unsuccessfully attempted suicide. Almost one fifth of students (18.1%) who did attempt suicide needed medical attention because of physical injury, poisoning, or drug overdose. The prevalence categorized by gender and level is shown in Fig. 3.

**Weight**

Using the BMI to screen for being overweight, the presented data indicated that 4.5% of students were overweight and 9.1% at risk of becoming overweight. Of all students, 24% thought they were overweight and 77.7% of them were trying to lose weight. During the 30 days preceding the survey, 2.3% and 6.3% of all students had taken diet pills without medical advice and had gone without eating for more than 24 hours either to lose weight or to avoid gaining

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**Fig. 2  Violence**

**Fig. 3  Sadness and suicidal thoughts**
weight. More than half (55.1%) had exercised, 36.8% had eaten less food, consumed fewer calories, or eaten foods low in fat, and 3.6% had vomited or taken laxatives to lose weight or to avoid gaining weight during the 30 days preceding the survey. The prevalence categorized by gender and level is shown in Fig. 4.

Sexual behavior

Overall, 7.0% of the students admitted to having had sexual intercourse. Categorized by gender, 11.6% of boys and 3.9% of girls reported that they had had sexual intercourse. Of those who had sexual intercourse, 32.5% and 13.8% of them had had more than two partners in their lifetime or during the three months preceding the survey, respectively. Before their last sexual encounter, 17.6% of students had used alcohol or drugs, 13.7% reported that neither they nor their partner had used any birth control during this encounter and 13.9% had been pregnant or had made someone else pregnant. Of those students who had sexual intercourse, condom was the most used method for birth control at their last sexual encounter (34.9%), followed by withdrawal (coitus interuptus) (20.9%) and birth control pills (11.8%). The authors noticed that half of grade seven students (50.1%) reported that they had had their first sexual intercourse at an age younger than 11 years while 18.6% of grade nine, 7.1% of grade 11, and 3.1% of the second year students at vocational school reporting the same. The prevalence categorized by gender and level is shown in Fig. 5.

Smoking

Overall, 16.1% of the students had smoked cigarettes. Categorized by gender, 27.7% of boys and 8.1% of girls reported smoking a cigarette at some time during their lives. Of those who had ever smoked, the
most of the boys (62.3%) and a quarter of the girls (24.1%) had been smoking within the previous 30 days prior to the survey. Among the current group of smokers, 45.8% of boys and 14.8% of girls had smoked on more than 10 of the previous 30 days; 14.9% of boys and 6.1% of girls had smoked six or more cigarettes per day. Moreover, the authors found that 20.2% of grade seven students who had smoked reported that their age when they first smoked was below 11 years with 9.7% of grade nine, 5.9% of grade 11, and 6.8% of the second year students at vocational school indicating that they had done so. The prevalence categorized by gender and level is shown in Fig. 6.

**Alcohol consumption**

Overall, 27.7% of students had drunk alcoholic beverages. Of those who had ever drunk alcohol, 37.5% of boys and 20.1% of girls admitted having drunk more than a few sips of alcohol sometime during their lifetime. Within this 30 days period, the majority of the boys (63.3%) and nearly half the girls (44.6%) had drunk. Moreover, 5.3% of students claimed they had drunk alcohol on more than 10 of the previous 30 days. The prevalence of binge drinking in boys and girls was 14.7% and 3.6% respectively, while the prevalence of drinking until intoxicated (drunk) was 16.3% for the boys and 4.3% for the girls. In addition, 34.9% of grade seven who had drunk reported that their age when they had their first drink was less than 11 years of age while 20.2% of grade nine, 8.2% of grade eleven, and 7.5% of the second year students at vocational school reported that they had also done so. The prevalence categorized by gender and level is shown in Fig. 6.

**Illicit drug use**

The prevalence of students who stated that they had used at least one illicit substance (i.e. methamphetamine, cannabis, the leaves of kratom (a local name of Mytragyna Speciosa Korth, a tree native to Southeast Asia), inhalants, ecstasy, cocaine, hallucinogens, ketamine, opium and heroin) in their lifetime was 13.8% for the boys and 2.2% for the girls. Among these students, 61.6% of boys and 30.7% of girls had used at least one illegal drug within the previous 30 days. The four most commonly used substances reported were kratom leaf (10.3% for boys and 1.2% for girls), cannabis (6.3% for boys and 0.6% for girls), methamphetamine (2.3% for boys and 0.2% for girls), and inhalants (1.4% for boys and 0.6% for girls). Among each of the listed substances used, 12.3%, 7.2%, 4.3%, and 18.3% of respondents had started at an age younger than 11 years for kratom leaf, cannabis, methamphetamine, and inhalants, respectively. The majority of students who reported the use of these substances at some stage of their lives (kratom leaf, cannabis, methamphetamine, and inhalants) also reported their use during the preceding 12 months and about half had used them in the preceding 30 days before the survey. The prevalence categorized by gender and level is shown in Fig. 6.

**Multiple health-risk behaviors**

Regarding all the health-risk behaviors that the authors have mentioned above, the authors selected 11 major questions for risk behaviors to examine the prevalence of engaging in multiple risk behaviors: 1) rarely or never wearing a helmet or seat
belt, 2) driving after drinking alcohol, 3) carrying a weapon, 4) physical fights, 5) depression, 6) attempted suicide, 7) sexual intercourse, 8) taking diet pills/vomiting or taking laxatives to lose weight, 9) smoking, 10) drinking alcohol, and 11) illicit drug use.

The authors found that 71.6% of all engaged in 1-2 health-risk behaviors, 12.6% of boys and 2.6% of girls had five or more of the 11 health-risk behavior categories the authors had focused on. Only 8.7% had no risk behaviors while there was a group of 34 boys and seven girls who had almost all (> 9) of the 11 behaviors.

Discussion

The present results showed a high prevalence of unsafe practices among high-school students in Southern Thailand. The prevalence of rarely or never wearing a helmet or seat belt was dramatically higher than the 2001 Youth Risk Behavior Survey (YRBS) taken in Bangkok, Thailand and the 2005 national YRBS in the United States.(10,11). While the prevalence of attempted suicide, depression, sexual intercourse, and having drunk were considerably lower than the earlier surveys.

Discussion

The present results showed a high prevalence of unsafe practices among high-school students in Southern Thailand. The prevalence of rarely or never wearing a helmet or seat belt was dramatically higher than the 2001 Youth Risk Behavior Survey (YRBS) taken in Bangkok, Thailand and the 2005 national YRBS in the United States.(10,11). While the prevalence of attempted suicide, depression, sexual intercourse, and having drunk were considerably lower than the earlier surveys.

Regarding the high prevalence of unsafe traffic practices, this result was supported by the 2001-2004 The Thailand Health Profile (THP). The study indicated that road traffic accidents among teenagers and adults were the fourth leading cause of death, most of which were associated with motorcycles.(13). Another study on road traffic injuries in Thailand revealed that 70% of the people injured or killed in crashes were aged 10-39 years(12) indicating that Thai youths should be more cautious. Although attempts to improve road safety using a combination of education and law enforcement have been organized in the south(12), a programme to raise school children’s awareness is needed and should be done continuously.

Looking at a study level difference, the present results showed that the prevalence of driving after drinking was highest among the second year students at vocational schools (Fig. 1). Most of the behaviors that contributed towards violence were also found in the same group-the second year vocational school students. With regard to depression and suicide behavior, the prevalence of depression and having suicidal thoughts in the present study was much lower than the national survey among Thai high school student aged 13-18 in 2005(13). Moreover, the authors found that girls had a higher prevalence than boys (Fig. 3). The authors noticed that the prevalence of having suicidal thoughts in the second year students at vocational schools was higher than in grade eleven of ordinary school students, which is consistent with a survey of suicide among students in Bangkok(14), and the number of depressed students substantially increased with the year of study (Fig. 3).

Concern over weight is another risk behavior that was found among the presented subjects. A significant number of teenagers were dissatisfied with their bodies. Although the tendency to be overweight was quite low, however, about a quarter of students thought they were overweight and many of them were trying to lose weight. Although the prevalence of overweight belief among the second year students at vocational schools was lower than grade eleven, the prevalence of trying to lose weight using any method was highest in this group (Fig. 4). Girls had a higher prevalence of overweight belief than boys, however the prevalence of trying to lose weight was higher among boys than girls (Fig. 4).

With regard to sexual behavior, it can be seen that the proportion of vocational school students in the second year who have had sexual intercourse was much higher than among their counterparts in ordinary schools. Other sexual practices, such as the occurrence of having had sexual intercourse with more than two different partners within the three months preceding the survey, drinking alcohol or using drugs before having sexual intercourse, lack of use of contraception, and being involved in pregnancy were also higher than among the second year students in vocational schools (Fig. 5).

Risky behavior related to cigarette smoking, drinking alcohol, and the use of illicit drugs is not diminishing. The prevalence of smoking, drinking, and using at least one illicit substance among boys was higher than girls. The authors found that the prevalence of lifetime smoking among southern high school students was higher than Bangkok students (16.1% vs. 15.4%) but the prevalence of lifetime drinking was lower (27.7% vs. 37.3%)(10). Compared with students in the United States, the prevalence of lifetime smoking and drinking among southern Thai high school students in the present survey was much lower (smoking 16.1% vs. 54.3%, drinking 27.7% vs. 74.3%)(10), which might be due to cultural differences between the two countries.

More than half the boys who admitted to smoking, drinking, and using at least one illicit substance during their lifetime had also used them in the previous 30 days. The authors found that krathom
leaf, cannabis, methamphetamine, and inhalants were the most commonly used drugs among high-school students. Additionally the authors found that the rates of smoking, drinking, and using at least one illicit substance were highest among the vocational school students (Fig. 6).

Conclusion
According to the present results, it is suggested that the High School Administrators in the south of Thailand pay greater attention to health-risk behavior, especially for vocational school students, when considering a health promotion program in their schools.

Limitation
The present findings are only derived from children who attended high school and vocational school in Southern Thailand. Therefore, the results are not representative of all Thai youth. Although the answers were anonymous, some risk behaviors might be underestimated due to questions that are considered as a social stigma (i.e. sexual intercourse, smoking, drinking, and substance use).

Acknowledgements
This research was supported by a grant from the Institute of Research and Development for Health of Southern Thailand.

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พฤติกรรมเสี่ยงต่อสุขภาพในนักเรียนชั้นมัธยมศึกษาภาคใต้

นิศานติ์ สวัสดี, สาวิตรี อัษณางค์กรชัย, อุไรวรรณ พัฒนสัตยวงศ์, อโนชา หมึกทอง

วัตถุประสงค์: สำรวจความชุกของพฤติกรรมเสี่ยงต่อสุขภาพในนักเรียนมัธยมศึกษาภาคใต้

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วัสดุและวิธีการ: กลุ่มตัวอย่างนักเรียนสายสามัญชั้นมัธยมศึกษาปีที่ 1, 3, 5 และ สายอาชีวศึกษาปวช.ปีที่ 2 ใน 8 จังหวัด โดยสุ่มจังหวัดละ 6 โรงเรียนในปีการศึกษา 2548 มีนักเรียนรวม 11,135 คน

ผลการศึกษา: นักเรียนมากกว่าร้อยละ 70 มีพฤติกรรมไม่ปลอดภัยในการขับขี่หรือโดยสารยานพาหนะ (ไม่สวมหมวกกันน็อก หรือไม่คาดเข็มขัดนิรภัย) ร้อยละ 14 มีพฤติกรรมรุมแรง ทะเลาะวิวาทจนได้รับบาดเจ็บ ร้อยละ 2.3 เคยดื่มสบู่หรือยาเสพติดในขณะที่ขับขี่ นักเรียนร้อยละ 7 เคยใช้ยาเสพติดและในจำนวนนี้ร้อยละ 32.5 เคยใช้ยาเสพติดมาแล้วกับคู่มากกว่า 2 คน ร้อยละ 13.7 ไม่เคยมีสัมพันธ์ทางเพศ เลขการศึกษา 1 ปีที่ผ่านมา นักเรียนร้อยละ 15.5 ร้อยละ 8.2 และร้อยละ 3.8 เคยเลิกเครื่องดื่มแอลกอฮอล์ เคยดื่มเครื่องดื่มบรรเทาหิว และเคยสูบยาเสพติดใน 30 วันที่ผ่านมาตามลำดับ โดยสารเสพติดที่นักเรียนรายงานว่าเคยใช้สูงสุด 4 อันดับแรก ได้แก่ ใบกระท่อม กัญชา, ยาบ้า, และสารระเหย เมื่อแยกตามชั้นปีที่ศึกษาพบว่า นักเรียนชั้นปวช.ปีที่ 2 ในสายอาชีวศึกษา มีความชุกของพฤติกรรมเสี่ยงต่อสุขภาพสูงกว่านักเรียนสายสามัญ

สรุป: การศึกษานี้ชี้ให้เห็นถึงความจำเป็นของการเฝ้าระวังพฤติกรรมเสี่ยงต่อสุขภาพ และพฤติกรรมใช้สารเสพติดในนักเรียน เพื่อให้ได้ความรู้ความเข้าใจที่ชัดเจนสำหรับการวางแผนมาตรการป้องกันและดูแลแก้ไข