Association of Adolescent Substance Use: Behavioral Problems and Family Background among School Students in Tsunami Affected Area in Southern Thailand

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Objective: *To study the prevalence of substance use and associated factors in school students in Tsunami affected areas in southern Thailand.*
Material and Method: *The study was a school-based, cross-sectional, anonymous survey that used a translated questionnaire, ESPAD-03, in 5 schools. Chi-square tests and odds ratios were used to evaluate factors associated with substance use.*
Results: *Two thousand seven hundred and sixteen students (87.8%) were enrolled in the study. Lifetime, last 12 months, and last 30 days prevalence rates of any substance use were 50.3, 33.9, and 24.8%, respectively. Lifetime, last 12 months, and last 30 days prevalence rates of alcohol use were 43.2, 30.1, and 17.5%, respectively. Lifetime and last 30 days prevalence rates of smoking were 21.7 and 12.0%. Fighting, stealing, truancy, running away, unsafe sex, and thought of self-harming were associated with alcohol and substance use. Siblings and friends with alcohol and substance use were risk factors. Close support from parents and friends were protective factors.*
Conclusion: *There was a high prevalence of smoking, alcohol, and substance use among school students in Tsunami affected areas. Behavioral problems and psychosocial risk factors were associated with history of smoking, alcohol and substance use. School-based intervention in students with behavioral problems seems to be a worthwhile investment. However, longitudinal studies should be done to confirm the correlation of PTSD and substance use.*

Keywords: *Substance use, Adolescent, Tsunami, Behavioral problem, Risk, Protective factor*

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There are limitations and challenges in studying prevalence of drugs and alcohol use for epidemiological surveys in a young population. Drug use surveys in school are the most efficient and frequently used since it is easy to conduct and cost-effectiveness[1]. School surveys only target the young population, who were present in the school system at the time of survey. Validity and reliability of school surveys are a result of multiple factors, including confidentiality, anonymity, anticipation of consequences of the survey enrollment and result, quality and understandability of the questionnaires, setting where the survey took place, means of assessing drug use, for example, face-to-face interview, telephone interview, self-reported, internet survey, computer-based survey, urinalysis and hair analysis, students' attitude toward admitting drug use, and peer group effects[1,2]. The American Academy of Pediatrics and Royal College of General Practice Substance Misuse Unit (UK) disagree on random drug testing of children and adolescents because of its lack of scientific support on its safety and efficacy[3,4].

Some countries conduct drug school surveys

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on a regular basis. For example, annual drug school surveys, Monitoring the Future in North America, by the Institute for Social Research at the University of Michigan[5]; every fourth-year survey by European Schools Project on Alcohol and other Drugs (ESPAD)[6]; and biennial surveys by the Inter-American Drug Use Data System Study in Central America and the Dominican Republic. In Thailand, drug and alcohol surveys of children and young adult are limited in term of both number and methodology of survey[7,8]. The population in the present study was composed of students in schools in the 2004 Tsunami affected area in Southern part of Thailand. From the previous reports, the prevalence of PTSD and partial PTSD two years after the incident in one of the schools in the area was 15.1 and 23.7%, and at four year was 18.5 by DSM-IV and 30.1% by ICD-10 criteria[9-11]. Previous studies showed that lifetime trauma and PTSD were associated with increasing substance use[12-14]. Thirty-four point four percent of adult with PTSD had a substance use disorder, most common being alcohol use disorder (24.1%)[12]. Drug alcohol surveys in children and young adult with PTSD were even further restrained. The study was part of the 5-years school follow-up for mental health problem after the 2004 Tsunami incident[11].

Material and Method

This survey was a school-based, voluntary, anonymous, cross-sectional, study-using questionnaire. The authors contacted school principles and informed the schools regarding plan and detail of the present study. Parental consent and student assent were obtained. The authors requested the school psychologists to collect data from students during school hours. The survey was done in July 2009. All participants were students from grade 7 to 12, who attended the five schools, which were located in the 2004 Tsunami affected area, in Takuapa District, Pang Nga province, in the southern part of Thailand.

The questionnaire used in the present study was translated and adapted from the Student Questionnaire by permission from the European School Survey Projects on Alcohol and Other Drugs (ESPAD)[6]. This questionnaire has been used in the survey on alcohol and drugs use in 35 countries in Europe. The questionnaire asked information on experience and consequences of substance uses, including risk and protective factors, for example, parental monitoring, parental support, parental control (with the proxy-question like if their parents knew where they spent Saturday nights), quality of relationship with parents and attitude toward self and family status. The authors translated and back-translated the questionnaire. Some wordings were readjusted by a consensus review panel to make it appropriate with Thai language and culture. The authors also added some questions to cover drugs that are more commonly used in Thailand. The questionnaire was approved by the Ethics Committee Siriraj Hospital, Mahidol University, EC number 612/2551 (EC1). The questionnaires, which were sealed in envelops, were handed to the participants during a regular classroom period. All the students were informed regarding the objectives of the study by a school psychologist. This survey was done in an anonymous manner to ensure subject's confidentiality. The students were informed not to write down their names anywhere on the questionnaire and informed consent was obtained verbally in classrooms. Students answered the questionnaire on a voluntary basis. After the study samples finished the self-reported questionnaire, they sealed the questionnaires in envelops and handed them back to the school psychologists.

Statistical analysis

SPSS version 17.0 was used in analyzing data. Missing data were removed from calculations. Frequencies were used for prevalence and demographic data. A Chi-square test was used to compare ratios. Odds ratio (OR) with 95% confidence interval was used to evaluate risk factors associated with each drug use. Statistical significance was defined as $p<0.05$.

Results

Editor's note: the total of the male and female enrollees is 2,662 (87.8% of 3.032 students), not: two hundred and sixteen, 7^{th}-12^{th} grade students, from a total of 3,032 students (87.8%), were enrolled in the present study. One student rescinded enrollment in the study after reading the questionnaire; 1,054 (40.2%) students were male, and 1,568 (59.8%) students were female. 1,681 (63.2%) were junior high school students and 980 (36.8%) were senior high school students. The mean student age was 14.8 (+1.9) years with a minimum age of 12 years and maximum of 21 years (Table 1).

Prevalence of substance use

Any substance

Lifetime, last 12 months, and last 30 days prevalence rates of any substance (including alcohol and smoking) use in students were 50.3, 33.9, and 24.8%, respectively. The prevalence was significantly

Table 1. Demographic data

	n	%
Total students	3,092	100
Participated students	2,716	87.8
Sex		
Male	1,054	40.2
Female	1,568	59.8
Grade level		
Grade 7th	515	19.4
Grade 8th	593	22.3
Grade 9th	573	21.5
Grade 10th	368	13.8
Grade 11th	295	11.1
Grade 12th	317	11.9
Junior high school	1,681	63.2
Senior high school	980	36.8
Age (years)		
Mean ± SD	14.8±1.9	
Minimum	12	
Maximum	21	

higher in boys than in girls with lifetime prevalence of 63.6 % in boys and 41.5 % in girls, as shown in Table 2.

Alcohol and smoking

Alcohol was the most common substance use in students with lifetime, last 12 months, and last 30 days prevalence of 43.2, 30.1, and 17.5%, respectively. The second most common substance use was smoking with lifetime and last 30 days prevalence of 21.7 and 12.0%. The prevalence of alcohol and smoking use was higher in boys, with last 30 days prevalence of alcohol consumption of 26.5 in boys and 11.5% in girls. The last 30 days prevalence of smoking was 25.7 in boys and 2.8% in girls. Lifetime, last 12 months, and last 30 days of prevalence of being drunk was 30, 21.9, and 13.3%, respectively.

Illicit drugs uses

Lifetime, last 12 months, and last 30 days prevalence rates of any illicit drugs use were 22.1, 13.7, and 8.9%, respectively. The most common illicit drugs use were krathom (Mitragyna peciosa Korth), cannabis, and 4x100 (mixed drugs). The lifetime prevalence rates of other illicit drugs were 5.5% for hypnotic-sedative drug, 3.4% for inhalants, 2.9% for amphetamine, 1.8% for ice (methamphetamine), 1.5% for ecstasy, 1.3% for heroine, mushroom, and any intravenous drugs use, 1.2% for opium, 1% for cocaine, 0.9% for ketamine and morphine, and 0.7% for methadone.

Association between substance uses and behavioral problems

The association between substance use (in last 12 month) and behavioral problems, possible risk and protective factors are shown in Table 3. Of consequence, we found argument/fight with someone, stealing, had something stolen, damaging property, damage to objects, running away from home, thought of harming oneself or attempted suicide, unsafe sexual activity or sex that you regretted the next day were all significantly associated with increasing risk of alcohol, smoking, substance uses.

Truancy (history of skipping school in last 30 days), siblings with alcohol use, siblings smoking cigarettes, siblings using drugs, friends using alcohol, drunk friends, friends who smoked cigarettes, friends using drugs were all significantly associated with increasing risks for alcohol, smoking, substance uses and being drunk in last 12 months.

The protective factors analysis is shown in Table 3. The authors found easy access to support from parents and friends were significant protective factors against history of alcohol, smoking, substance uses and getting drunk in last 12 months. Parental control was significantly protective against getting drunk, smoking, and substance use, but not alcohol use.

Discussion

The authors found a substantial prevalence of drug use in school students in Tsunami affected area. Although alcohol is illegal for high school students, the lifetime prevalence of alcohol use from the present study was 43.2%. However, the prevalence of alcohol use in European students was higher. The ESPAD study (2003) showed that 82% of European students had tried alcohol consumption[6]. The rate of lifetime alcohol consumption in the ESPAD study was similar to students' study in USA[5]. In the present study, the authors found substantially higher rate of alcohol consumption in school students with lifetime rate of 52.5% in boys, 37.2% in girls, and drinking in last 12 months was 39.9% in boys and 23.7% in girls. However, the data from 2007-2008 cross-sectional national school survey in Thailand showed the rate of alcohol consumption to be much lower with only 30.5% of male students and 18.2% of female students having consumed alcohol, with only 19.1% having taken alcohol in last 12 months, 25.5 in boys and 14.5% in girls[8]. The prevalence rates of getting drunk in the last 30 days in our study were 21.2% in boys, and 7.6%

Table 2. Prevalence of substance uses

	Prevalence										
	Lifetime				Last 12 months				Last 30 days			
	Total (%)	Male (%)	Female (%)	*p*-value	Total (%)	Male (%)	Female (%)	*p*-value	Total (%)	Male (%)	Female (%)	*p*-value
Any substances (including alcohol and smoking)	50.3	63.6	41.5	<0.01	33.9	45.4	26.2	<0.01	24.8	40.3	14.3	<0.01
Alcohol	43.2	52.5	37.2	<0.01	30.1	39.9	23.7	<0.01	17.5	26.5	11.5	<0.01
Drunk	30.0	40.9	22.4	<0.01	21.9	31.7	15.0	<0.01	13.3	21.2	7.6	<0.01
Smoking	21.7	40.9	8.8	<0.01				<0.01	12.0	25.7	2.8	<0.01
Any illicit drugs (not including alcohol and smoking)	22.1	34.2	13.9	<0.01	13.7	22.6	7.8	<0.01	8.9	15.5	4.5	<0.01
Tranquillizers or sedatives (without prescription)	5.5	5.8	5.3	0.62	2.3	2.6	2.1	0.45	1.3	1.5	1.0	0.26
Marijuana	9.4	18.1	3.6	<0.01	4.8	9.8	1.3	<0.01	3.0	6.3	0.7	<0.01
4x100 (mixed drug)	7.1	14.0	2.1	<0.01	4.3	8.9	1.2	<0.01	2.5	5.2	0.6	<0.01
Krathom (Mitragyna speciosa Korth)	13.9	24.6	6.7	<0.01	7.7	14.2	3.3	<0.01	4.3	8.2	1.7	<0.01
Inhalants (glue, lacquer, thinner)	3.4	4.6	2.4	<0.01	1.4	1.8	1.0	0.06	0.9	1.4	0.4	<0.01
Amphetamine	2.9	5.6	0.9	<0.01	1.3	2.9	0.1	<0.01	0.9	2.1	0.0	<0.01
Heroin	1.3	1.9	0.8	0.01	0.5	0.8	0.2	0.03	0.3	0.5	0.1	0.03
Ecstasy	1.5	2.2	0.8	<0.01	0.5	1.0	0.1	<0.01	0.3	0.7	0.1	0.01
Ice (methamphetamine)	1.8	2.9	0.8	<0.01	0.8	1.3	0.2	<0.01	0.5	0.7	0.2	0.05
Ketamine	0.9	1.3	0.5	0.02	0.3	0.7	0.0	<0.01	0.2	0.4	0.0	0.02
Cocaine	1.0	1.3	0.6	0.04	0.4	0.7	0.1	0.01	0.3	0.6	0.1	0.01
Opium	1.2	1.6	0.6	0.01	0.5	0.8	0.1	<0.01	0.3	0.6	0.1	0.01
Morphine	0.9	1.1	0.6	0.17	0.3	0.6	0.0	<0.01	0.3	0.5	0.0	0.01
Methadone	0.7	0.7	0.5	0.61	0.2	0.3	0.0	0.03	0.2	0.3	0.0	0.03
Magic mushroom	1.3	1.3	1.0	0.37	0.5	0.7	0.3	0.11	0.3	0.6	0.1	0.04
Intravenous drugs use (heroin, cocaine, amphetamine)	1.3	1.6	0.8	0.04	0.6	0.9	0.2	0.01	0.4	0.7	0.1	0.02
Alcohol together with other drugs	7.8	12.1	4.8	<0.01	4.5	7.6	2.4	<0.01	2.5	4.1	1.4	<0.01
Alcohol and marijuana at the same time	3.9	7.2	1.7	<0.01	2.0	4.2	0.5	<0.01	1.3	2.7	0.4	<0.01
Anabolic steroids	1.3	1.9	0.7	0.01	0.6	1.1	0.2	<0.01	0.3	0.5	0.1	0.09

Table 3. Association between substance uses (last 12 months) and behavioral problems, risk and protective factors

	Alcohol use		Drunk		Smoking		Illicit drug use	
	OR (95%CI)	*p*-value	OR (95%CI)	*p*-value	OR (95%CI)	*p*-value	OR (95%CI)	*p*-value
Problematic behaviors								
Argument/fight	3.29 (2.75, 3.94)	<0.01	3.42 (2.88, 4.06)	<0.01	2.23 (1.85, 2.70)	<0.01	2.78 (2.18, 3.53)	<0.01
Stealing	3.32 (2.60, 4.24)	<0.01	3.95 (3.09, 5.05)	<0.01	4.22 (3.30, 5.40)	<0.01	3.70 (2.81, 4.87)	<0.01
Damage property	5.00 (3.72, 6.72)	<0.01	5.37 (3.97, 7.25)	<0.01	5.96 (4.47, 7.96)	<0.01	5.47 (4.04, 7.40)	<0.01
Had someone start a fight with or being attacked	3.29 (2.68, 4.03)	<0.01	3.49 (2.85, 4.26)	<0.01	3.13 (2.53, 3.86)	<0.01	3.02 (2.36, 3.84)	<0.01
Had something stolen	2.37 (1.91, 2.95)	<0.01	2.91 (2.34, 3.61)	<0.01	2.22 (1.77, 2.80)	<0.01	2.30 (1.77, 3.00)	<0.01
Damage to objects or clothing you owned	3.05 (2.31, 4.02)	<0.01	3.58 (2.72, 4.73)	<0.01	3.22 (2.44, 4.25)	<0.01	3.13 (2.30, 4.27)	<0.01
Run away from home	6.52 (4.78, 8.90)	<0.01	6.43 (4.70, 8.80)	<0.01	5.62 (4.20, 7.54)	<0.01	5.09 (3.74, 6.91)	<0.01
Thought of harming yourself or attempted suicide	2.90 (2.36, 3.56)	<0.01	3.36 (2.74, 4.12)	<0.01	2.04 (1.64, 2.54)	<0.01	2.08 (1.61, 2.69)	<0.01
Unsafe sex, sexual activity regretted the next day	6.07 (4.26, 8.64)	<0.01	5.87 (4.10, 8.40)	<0.01	5.3 (3.81, 7.37)	<0.01	4.59 (3.24, 6.48)	<0.01
Skipped school/truancy	3.90 (3.12, 4.87)	<0.01	3.89 (3.12, 4.85)	<0.01	5.02 (4.00, 6.31)	<0.01	3.27 (2.53, 4.22)	<0.01
Risks								
Siblings using alcohol use or drunk	2.92 (2.43, 3.52)	<0.01	3.15 (2.63, 3.77)	<0.01	1.68 (1.39, 2.05)	<0.01	1.90 (1.50, 2.41)	<0.01
Siblings smoking cigarettes	2.09 (1.75, 2.50)	<0.01	2.20 (1.85, 2.61)	<0.01	2.21 (1.82, 2.69)	<0.01	2.02 (1.60, 2.56)	<0.01
Siblings using drugs	2.25 (1.87, 2.70)	<0.01	2.78 (2.32, 3.32)	<0.01	2.40 (1.97, 2.92)	<0.01	2.76 (2.20, 3.48)	<0.01
Friends using alcohol	3.68 (3.03, 4.46)	<0.01	3.97 (3.29, 4.77)	<0.01	2.59 (2.11, 3.18)	<0.01	2.63 (2.04, 3.40)	<0.01
Friends got drunk	3.17 (2.66, 3.77)	<0.01	3.56 (3.01, 4.22)	<0.01	2.66 (2.20, 3.21)	<0.01	2.53 (2.02, 3.17)	<0.01
Friends smoked cigarettes	2.71 (2.25, 3.28)	<0.01	3.05 (2.54, 3.66)	<0.01	3.80 (3.03, 4.78)	<0.01	2.52 (1.94, 3.27)	<0.01
Friends using drugs	2.45 (2.06, 2.90)	<0.01	3.05 (2.58, 3.60)	<0.01	2.73 (2.26, 3.30)	<0.01	3.55 (2.81, 4.48)	<0.01
Parent control	0.69 (0.48, 0.99)	0.06	0.53 (0.38, 0.75)	<0.01	0.49 (0.34, 0.71)	<0.01	0.43 (0.29, 0.65)	<0.01
Protective factors								
Feel family is well off than other	0.83 (0.63, 1.11)	0.23	0.68 (0.52, 0.90)	0.01	0.79 (0.58, 1.07)	0.14	0.97 (0.66, 1.42)	0.94
Satisfied relationship with mother	0.73 (0.43, 1.24)	0.30	0.72 (0.43, 1.20)	0.26	0.52 (0.30, 0.88)	0.02	0.62 (0.32, 1.18)	0.19
Satisfied relationship with father	0.86 (0.53, 1.42)	0.66	0.67 (0.43, 1.07)	0.12	0.82 (0.48, 1.39)	0.54	1.00 (0.51, 1.96)	1.00
Satisfied relationship with friends	1.05 (0.55, 2.00)	1.00	0.94 (0.51, 1.73)	0.97	0.53 (0.29, 0.97)	0.06	1.00 (0.42, 2.38)	1.00
Easily get warmth/emotional support from parents	0.56 (0.46, 0.68)	<0.01	0.54 (0.45, 0.66)	<0.01	0.39 (0.32, 0.48)	<0.01	0.52 (0.41, 0.66)	<0.01
Easily get warmth/emotional support from friends	0.77 (0.65, 0.93)	0.01	0.81 (0.68, 0.96)	0.02	0.58 (0.48, 0.71)	<0.01	0.77 (0.61, 0.98)	0.04
Positive attitude toward self	0.91 (0.69, 1.21)	0.58	0.78 (0.60, 1.02)	0.08	0.51 (0.39, 0.67)	<0.01	0.70 (0.50, 0.98)	0.05

in girls, closed to 17.3 and 7.2% in 2007-2008 national school study[8]. The differences in alcohol consumption prevalence might indirectly reflect the psychological effect from the Tsunami, or from using a different questionnaire.

The prevalence of smoking in last 30 days in our study was 12.0%, compared to 12-57% from 35 countries which participated in the 2003 ESPAD study[6], 12.6% from the 2008 Monitoring the Future Study in the US[5], and 10.8% in 2004 study in students of southern Thailand[7]. However, the rate of smoking in boys in the last 30 days was also higher in the present study when compared to the 2004 study of students from southern Thailand, 25.7 vs. 19.84%[7].

The substantially high rate of any illicit drug use in the present study with lifetime, last 12 months, and last 30 days use rates were 22.1, 13.7, and 8.9%. Kratom, cannabis, 4x100 (mixed drug) were the most common substances used with lifetime prevalence of 13.9, 9.4, and 7.1%. From the ESPAD 2007 study, which was done in 35 countries in Europe, the lifetime experience of any illicit drug use in boy/girl varied from 48/40% in the Czech Republic to 5/2% in Romania[15]. From the US Monitoring the Future Study, the lifetime prevalence of any illicit drug use in 2008 was 32.6%[5]. However when compared to the study of substance use among high-school students in southern Thailand, 2004, which had the lifetime prevalence of any illicit drug use of 5-7%, the lifetime prevalence of any illicit drug use in our study was substantially higher[7]. The prevalence of lifetime kratom, marijuana, amphetamine, inhalant, and ecstasy in boys was also higher in the present study when compared to the 2004 study among high-school students in southern Thailand[7]; 24.6, 18.1, 5.6, 4.6, 2.2 vs. 9.43, 6.75, 2.32, 2.40, and 1.06%. This, again, might indirectly reflect the psychological effect from the Tsunami, or from using a different questionnaire.

Overall, history of substance use seemed to be more common in our study compared to other studies from Thailand[7,8]. From the present study, there was a high prevalence of PTSD in the school students, 18.5% by DSM-IV and 30.1% by ICD-10 criteria at 48 months after the Tsunami[11]. The present study seemed to be congruent with other studies that substance use was more common in subjects with PTSD[12-14]. This might be the effect of co-morbid PTSD. However, our study was an anonymous study, so the present could not further estimate the additive risk of substance use in PTSD cases compare to non-PTSD cases.

In general, the present study demonstrated that among Thai school children, history of smoking, getting drunk, alcohol, and substance use were significantly associated with behavioral problems and their consequences, as shown in Table 3. History of truancy, running away from home, unsafe sex, damaging property were strongly associated with history of smoking, getting drunk, alcohol, and substance uses, consistent with studies in the US and Zambia. Those studies revealed that current cannabis, alcohol, and substance use were associated with being sexually active[16,17]. In the present study, thought of harming oneself or attempted suicide was associated with history of smoking, alcohol, and substance uses, and highest associated with history of getting drunk. A similar correlation, between attempted suicide and cannabis and illicit drugs use, was found in adolescents with substance use in the Swiss National Study[18]. In the present study, siblings and friends with history of alcohol, smoking, and substances use were the significant risk factors, similar to the study in the US which reported that friends' use of drug was risk factor for adolescent drug use behavior[19]. In the present study, easy access to support from parents and friends were significant protective factors for all substances. Communicating well with a parent was associated with not having progressed to use of illicit drug in a Swiss National Study in adolescent with substance use[18]. In the present study, parental control was a significantly protective factor for getting drunk, smoking, and substance use but not alcohol use, which similar to the US study that family supervision and family discipline were found to be protective factor against substance use in adolescence[19].

Drug school survey is a very efficient, cost-effective, and practical. However, the drug survey in school was mainly a study of only children who were in school during the survey, excluding children who skipped school on the survey day and children outside in the educational system. The sample might represent local pattern and rate of drug use in the particular southern part of Thailand. The authors could not discern the interaction of other psychiatric diagnoses with drug uses behavior, since the survey was anonymous in nature.

Conclusion

There was high prevalence of smoking, alcohol, and substance use among school students in the Tsunami affected area. Behavioral problems and psychosocial risk factors were associated with history of smoking, alcohol, and substance use. School-based

intervention among high-risk students seems to be a worthwhile investment. Anonymity and the cross-sectional nature of the survey were the major limitation. Further longitudinal studies will be necessary to confirm the correlation of PTSD and substance use, as well as risk and protective factor of both PTSD and substance use in adolescence.

What is already known on this topic?

Drug and alcohol uses in adolescents are not uncommon. PTSD is co-morbid with substance use.

What this study adds?

There was a high prevalence of drug and alcohol use by students in schools in the area affected by 2004 Tsunami. Drug and alcohol use were associated with various behavioral problems. Friends and family had significant roles as risk and protective factors against substance use by adolescents.

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Potential conflicts of interest

None.

References

1. United Nations Office on Drugs and Crime. Conducting school surveys on drug abuse. Global assessment programme on drug abuse. Toolkit module 3. New York: United Nations; 2003.
2. Harrison L, Hughes A, editor. The validity of self-reported drug use: improving the accuracy of survey estimates. Rockville, MD: National Institute on Drug Abuse; 1997
3. Knight JR, Mears CJ. Testing for drugs of abuse in children and adolescents: addendum—testing in schools and at home. Pediatrics 2007; 119: 627-30.
4. Gerada C, Gilvarry E. Random drug testing in schools. Br J Gen Pract 2005; 55: 499-501.
5. Johnston L, O'Malley P, Bachman J, Schulenberg J. Monitoring the future national results on adolescent drug use. Overview of key finding 2008. Bethesda, MD: National Institute on Drug Abuse; 2009.
6. Hibell B, Andersson B, Bjarnason T, Ahlstrom S, Balakireva O, Kokkevi A, et al. ESPAD report 2003: Alcohol and other drug use among students in 35 European countries. Stockholm: The Swedish Council for Information on Alcohol and Other Drugs, CAN, Council of Europe, Co-operation Group to Combat Drug Abuse and Illicit Trafficking in Drugs, 2004.
7. Assanangkornchai S, Pattanasattayawong U, Samangsri N, Mukthong A. Substance use among high-school students in Southern Thailand: trends over 3 years (2002-2004). Drug Alcohol Depend 2007; 86: 167-74.
8. Assanangkornchai S, Mukthong A, Intanont T. Prevalence and patterns of alcohol consumption and health-risk behaviors among high school students in Thailand. Alcohol Clin Exp Res 2009; 33: 2037-46.
9. Piyasil V, Ketumarn P, Prubrukarn R, Pacharakaew S, Dumrongphol H, Rungsri S, et al. Psychiatric disorders in children at one year after the tsunami disaster in Thailand. J Med Assoc Thai 2008; 91 (Suppl 3): S15-20.
10. Ularntinon S, Piyasil V, Ketumarn P, Sitdhiraksa N, Pityaratstian N, Lerthattasilp T, et al. Assessment of psychopathological consequences in children at 3 years after tsunami disaster. J Med Assoc Thai 2008; 91 (Suppl 3): S69-75.
11. Ketumarn P, Piyasilpa V. Posttraumatic stress disorder in children and adolescents: lesson learned from 5-year psychosocial intervention program for schools in Takuapa after Tsunami. J Psychiatr Assoc Thai 2009; 54 (Suppl 1): 81S-106S.
12. Mills KL, Teesson M, Ross J, Peters L. Trauma, PTSD, and substance use disorders: findings from the Australian National Survey of Mental Health and Well-Being. Am J Psychiatry 2006; 163: 652-8.
13. Jacobsen LK, Southwick SM, Kosten TR. Substance use disorders in patients with posttraumatic stress disorder: a review of the literature. Am J Psychiatry 2001; 158: 1184-90.
14. Kilpatrick DG, Ruggiero KJ, Acierno R, Saunders BE, Resnick HS, Best CL. Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: results from the National Survey of Adolescents. J Consult Clin Psychol 2003; 71: 692-700.
15. Hibell B, Guttormsson U, Ahlstrom S, Balakireva O, Bjarnason T, Kokkevi A, et al. The 2007 ESPAD report. Substance use among students in 35 countries. Stockholm: The Swedish Council for

Information on Alcohol and Other Drugs (CAN), EMCDDA, Council of Europe; 2009.
16. Siziya S, Muula AS, Kazembe LN, Rudatsikira E. Harmful lifestyles' clustering among sexually active in-school adolescents in Zambia. BMC Pediatr 2008; 8: 6.
17. Fisher HH, Eke AN, Cance JD, Hawkins SR, Lam WK. Correlates of HIV-related risk behaviors in African American adolescents from substance-using families: patterns of adolescent-level factors associated with sexual experience and substance use. J Adolesc Health 2008; 42: 161-9.
18. Stronski SM, Ireland M, Michaud P, Narring F, Resnick MD. Protective correlates of stages in adolescent substance use: a Swiss National Study. J Adolesc Health 2000; 26: 420-7.
19. Cleveland MJ, Feinberg ME, Bontempo DE, Greenberg MT. The role of risk and protective factors in substance use across adolescence. J Adolesc Health 2008; 43: 157-64.

ความสัมพันธ์ของการใช้สารเสพติดในวัยรุ่นกับปัญหาพฤติกรรมและลักษณะครอบครัวในนักเรียนในเขตธรณีพิบัติในเขตภาคใต้ของประเทศไทย

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วัตถุประสงค์: *เพื่อศึกษาความชุกของการใช้สารเสพติดและปัจจัยที่เกี่ยวข้องในนักเรียนในเขตธรณีพิบัติในประเทศไทย*

วิธีการศึกษา: *การศึกษาเป็นการสำรวจแบบตัดขวางในโรงเรียนโดยไม่ทราบชื่อผู้เข้าร่วมการศึกษา โดยใช้แบบสอบถาม ESPAD 03 ฉบับแปลใน 5 โรงเรียน ค่าสถิติ Chi-square และ odds ratios สำหรับการหาค่าความสัมพันธ์ระหว่างปัจจัยต่างๆ กับการใช้สารเสพติด*

ผลการศึกษา: *นักเรียนจำนวน 2,716 คน เข้าร่วมในการศึกษาคิดเป็นร้อยละ 87.8 พบความชุกของการใช้สารเสพติดใดๆ ในช่วงตลอดชีวิต ช่วง 12 เดือนและ 30 วันที่ผ่านมาที่ร้อยละ 50.3, 33.9 และ 24.8 ตามลำดับ ความชุกของการใช้แอลกอฮอล์ในช่วงตลอดชีวิตช่วง 12 เดือน และ 30 วันที่ผ่านมาที่ร้อยละ 43.2, 30.1 และ 17.5 ตามลำดับ ความชุกของการสูบบุหรี่ในช่วงตลอดชีวิตและ 30 วันที่ผ่านมาที่ร้อยละ 21.7 และ 12.0 ประวัติมีการทะเลาะวิวาท การขโมยของ การหนีเรียน การหนีออกจากบ้าน การมีเพศสัมพันธ์ที่ไม่ปลอดภัย และการมีความคิดทำร้ายตัวเอง มีความสัมพันธ์กับประวัติการใช้แอลกอฮอล์และการใช้สารเสพติด การมีพี่น้องหรือเพื่อนใช้แอลกอฮอล์หรือใช้สารเสพติดเป็นปัจจัยเสี่ยงต่อการใช้แอลกอฮอล์และการใช้สารเสพติด ในขณะที่การได้รับความอบอุ่น เอาใจใส่และกำลังใจจากพ่อแม่และเพื่อนเป็นปัจจัยป้องกัน*

สรุป: *พบความชุกสูงของการสูบบุหรี่ การดื่มแอลกอฮอล์ และการใช้สารเสพติดในนักเรียน ปัญหาพฤติกรรมและปัจจัยทางจิตสังคมสัมพันธ์และมีผลต่อความเสี่ยงต่อการสูบบุหรี่การดื่มแอลกอฮอล์และการใช้สารเสพติด การให้ความช่วยเหลือผ่านทางโรงเรียนในนักเรียนที่มีปัญหาพฤติกรรมอาจจะเป็นการลงทุนมีความคุ้มค่า การศึกษาติดตามต่อเนื่องระยะยาวคงจำเป็น ในการชี้ชัดถึงความสัมพันธ์ระหว่างโรคความผิดปกติทางจิตใจภายหลังภัยพิบัติ (PTSD) กับการใช้สารเสพติด*