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Risk Factors Associated with Club Drugs Users among Adolescents in Nong Khai and Udon Thani Provinces, Thailand

Kittima Momen and Manop Kanato
Department of Community Medicine, Khon Kaen University, Thailand

Abstract: The objective of this case-control study has 2 folds: to test the relationship of family income and adolescence drug use behavior in particular club drugs in northeastern Thailand and to explore the potential risk factors that may contribute to their drug use behavior. Participants in this project were 335 adolescents who use club drugs in 2008 in the database while neighbouring control of the same sex as the cases were chosen by the ratio of 1:4. Of the 335 subjects, there were 67 cases and 268 controls. All interviews with samples took place in an academic institution in down town area to minimize the social sanction to the cases. Interviewed questionnaire was employed and analyzed by descriptive statistics, odd ratio, Chi-square and multiple logistic regression. It is emerged that entertainment visiting behavior significantly effects to the use of club drugs.

Key words: Risk factors, club drugs, drug abuse, adolescents, academic institution, Thailand

INTRODUCTION

Opium, the first illegal drug has been recognized since, the ancient period for over 6,000 years. Opium contains up to 12% morphine, an alkaloid which is used to relief pain and later frequently processed chemically to produce heroin for the illegal drug trade. Various illegal drugs both natural plants and synthetic chemical have been globally used with different purposes. UNODC estimated that 4-5.8% of the world population at aged 12-65 experienced of using illegal drugs once in lifetime (UNODC, 2009). Pharmarcological studies reported the effect of drugs on brain resulting in mood adjustment to meet users expectation (National Institute on Drug Abuse, 2010).

Not surprisingly, over 80% used Amphetamine Type Stimulants (ATS) and the rest used other drugs, mostly for recreational purpose (UNODC, 2009). In Thailand, the first law to punish drug users was introduced since, 1066 (Kanato *et al*., 2010a). However, the number of illegal drug users has been increasing and the variety of the drugs has also been expanding even though the policies have been developed from time to time according to the dynamics of illegal drugs situation.

National household survey in 2007 was done independently by a group of academic institution reported 2.5 million population of aged 12-65 experienced lifetime illegal drugs use. Of these, half a million used drugs within past year and 300,000 populations used it in past month (ACSAN and Office of Narcotics Control Board, 2008). The survey in the following year reported the slightly increase of drug users in particular, methamphetamine, cocaine and ketamine. The highly populace of the northeast is the area of highest proportion of drug users, accounts for 58 lifetime users in 1,000 populations (ACSAN and Office of Narcotics Control Board, 2008).

Government statistics reported the similar figure, supporting the statement that illegal drugs situation is getting worse. Total 2 years after war on drugs in 2003, the number of traffickers was increasing as same as users who need medical treatments. The number of treated users in 2007 was 60,000 and increasing by 1.5 times in the following 2 years (Assanangkornchai *et al*., 2010). Recently, statistics reported that users in the northeast were predominantly increased.

Over 80% of treated users used club drugs including methamphetamine. Of these, incidence rate of adolescent has been increasing 2 times for the past 3 years (Assanangkornchai *et al*., 2010). Epidemiological data on drug users reported that border areas and big cities in the northeast were high prevalence. Among these, the border area of Nong Khai and the city of Udon Thani were reported the high proportion of club drug users treated continuously (ISAN Substance Abuse Network and Khon Kaen University, 2009).

Research elsewhere reported that the number of adolescents in the northeast experienced of using drugs is higher than the country average. Entertainment places, a significantly potential risk factor have been increasing the risk of using drugs for 1.6 times (Kanato, 2007). Although, the price of club drugs seems to be high, particularly ICE (methamphetamine HCL), it is popularly

Corresponding Author: Kittima Momen, Department of Community Medicine, Khon Kaen University, Thailand

used (Kanato *et al*., 2010b). Moreover, research on drug dependents indicates that most of them work permanently with the income above poverty line (Kanato and Anusornpanichkul, 2009). This indicated that purchasing power is perhaps another enabling factor for the use of club drugs. Hence, good study design is needed to test the hypothesized factor on income and to explore potential associated factors to the use of club drugs in northeastern Thailand.

MATERIALS AND METHODS

Case control study was designed to test the hypothesized factor on income to the use of club drugs. Total two provinces in northeastern Thailand were selected: Nong khai representing the border area and Udon Thani representing the big cities. Adolescents aged 18-25 years old from these selected areas are targeted, accounting for 295,122 target populations in 2008. The cases have had registered as club drugs users (with confirmed urine laborabory tested) with the total of 187 cases and listed in the 2008 ISAN database.

Control group identified as neighboring cohort of each case with same sex. Samples were cases who agreed to participate with the 1:4 ratio to the control group. Calculated using ISAN database, sample size proportion of higher income in case group was 0.85 comparing to 0.64 of the control group with multiple correlation coefficient of 0.4, significance level of 0.05, power of 0.80 and expected nonresponse of 20%. Thus, the minimum sample size was 325: 65 cases and 260 controls. However, among all 187 cases, only 67 cases agreed to participate in the study. Thus, sampling procedure for cases was ignored. Sysetematic sampling was done only for neighbouring control.

As a result, the total of 335 samples (67 cases and 268 controls) was recruited in the study. Scope of the study is primarily emphasized on club drugs and hypothesized factors. For club drugs, methamphetamine (both crystal and tablet), ecstacy, ketamine and cocaine were included. The hypothesized factors were composed of income, demographic factors, enabling factors such as entertainment visiting behavior and enforcing factors including social context of using drugs. Self administered questionnaire was developed under the approval of ISAN expert team, pretested and optimized with club drugs users and their neighbors in Khon Kaen province. Interviewers were trained on interviewing procedure to meet the project standard.

To minimize community skepticism which could produce response bias, samples were scheduled and invited to an academic institution down town of Udon Thani or other locations those are convenient for the samples. Face to face interview was done in private setting during September-November 2010. Data double entry was performed. Descriptive statistics such as odd ratios, Chi-square and multiple logistic regression were utilized. The research project was approved by the Khon Kaen University Ethics committee for Human Research (ref. no. HE531281 on 2/9/2010).

RESULTS

Of the 335 studied samples, 69% were male. The median age was 22 years old in both case and control groups. Although, 60% of the samples were in 20-24 aged groups, there was a statistically insignificant difference between case and control groups. Around one third of both groups were married. Two third had basic education, primarily elementary education, reflecting the spreading of club drugs did not limit to those who received higher education. In contrast, only 30% of them live in urban area where various types of entertainment exist. Regarding their occupation, 82.1% were employed as unskilled labors, farmers, private entrepreneur or employees and only 11.3% were unemployed.

The statement is slightly different between the cases and the controls. The rest of 6.6% were students. Among employed subjects, average monthly income of cases group seems to be a little higher than controls group (median of US$200 for the cases and $180 for the controls) (Table 1). In Thailand, extended family is well recognized. The economic status belongs to the whole family not an individual. Research elsewhere demonstrated that students afforded to buy drugs even though there were no income (Kanato, 2007). In this study, monthly family income in both groups was quite similar (median US$500). Although, the proportion of high income (US$300 per month) was slightly different, there was no significant effect on the use of club drugs.

However, the frequency of entertainment visits influences drug use behavior. Adolescent who visit entertainment once a week or more has a chance to use club drug 3.45 times (95% CI:1.897, 6.686) more than those visit less. Illegal drugs use situation in Thailand has been complicated. The government has implemented various strategies to control the drugs spreading. However, the effectiveness of these prevention measures and treatments are controversial.

While the government treated a large number of drug users each year (both voluntary and compulsory systems), relapse rate and treatment failure seem to be unacceptable for all stakeholders. Only a few users quit successfully while the large portion returned to drug use.

Table 1: Risk factors on the use of club drugs

Factors	Cases n (%)	Contols n (%)	COR	AOR	95% CI for AOR Lower	95% CI for AOR Upper	p-vlue
Material status (334)			0.93	2.65	0.970	7.287	0.057
Married	29 (43.3)	115 (43.1)					
Single	38 (56.7)	152 (56.9)					
Level of education (335)			0.95	1.05	0.433	2.548	0.914
Basic educaion	45 (670.2)	183 (68.3)					
Higher educaion	22 (32.8)	85 (31.7)					
Occupation (335)			1.00	1.39	0.231	8.472	0.716
Unemployed	12 (17.9)	48 (17.9)					
Employed	55 (82.1)	220 (82.1)					
Frequency of entertainment visit (255)			3.45	3.56	1.897	6.686	0.000
Less than once a week	27 (47.7)	41 (20.7)					
Once a week or more	30 (52.6)	157 (79.3)					
Household income (335)			1.05	1.87	0.851	4.106	0.119
<$300 a month	13 (19.4)	50 (18.7)					
$300 a month or more	54 (80.6)	218 (81.3)					
Individual income (335)			0.74	0.49	0.127	1.890	0.301
<$300 a month	64 (95.5)	259 (96.6)					
$3300 a month or more	3 (4.5)	9 (3.4)					

Table 2: Factors potentailly associated with club drug users

Factors	Recent users n (%)	Non-users n (%)	COR	AOR	95% CI for AOR Lower	95% CI for AOR Upper	p-vlue
Material status (334)			2.925	16.110	1.583	164.165	0.019
Married	31 (77.5)	159 (54.1)					
Single	9 (22.5)	135 (45.9)					
Level of education (335)			2.020	3.660	1.028	13.046	0.045
Basic educaion	8 (20.0)	99 (33.6)					
Higher educaion	32 (80.0)	196 (66.4)					
Occupation (335)			0.588	1.026	0.216	4.875	0.974
Unemployed	3 (7.9)	35 (12.7)					
Employed	35 (92.1)	240 (87.3)					
Frequency of entertainment visit (255)			3.660	3.110	0.756	12.846	0.116
Less than once a week	3 (11.5)	74 (32.3)					
Once a week or more	23 (88.5)	155 (67.7)					
Household income (335)			1.713	-	0.00	-	0.997
<$300 a month	35 (87.5)	237 (80.3)					
$300 a month or more	5 (12.5)	58 (19.7)					
Individual income (335)			0.662	13.370	0.662	270.129	0.091
<$300 a month	1 (2.5)	11 (3.7)					
$3300 a month or more	39 (97.5)	284 (96.3)					

In this study, cases were identified in 2008 and data gathering was performed in 2010. During the past 2 years, adolescents change their drug use behavior. Among the controls group who were non users in 2008, 91.4% experienced in using drugs in the duration. Among cases group, 7.5% had been continually using club drugs for the past 3 months comparing with 13.1% of the controls group. In sum, 11.9% of the study samples has been using club drugs recently. Among recent users, 60% were male. Median age of users was a slightly higher that of than non-users (22 and 21.5). For the marital status, 77.5% of users were single compared with 54.1% among non-users. For the educational level of users, 80% had basic education while non-users were 66.4%. It was slightly different between users and non-users in terms of occupation, house setting, occupation and income (Table 2). It seemed that marital status influenced adolescent on the use of club drugs. The chance of using club drugs for single adolescent is significantly higher (16.1 times) than those are married (Adjusted odds ratio 16.1, 95% CI:1.58, 164.17). For the educational level, adolescent with lower education tended to use club drugs more than who has higher education even though the odds ratio was only 2 times. After controlling for others factors, the association was statistically significant. Thus, adolescent with lower education has a chance to use club drugs 3.7 times more than those with higher education (Adjusted odds ratio 3.7, 95% CI:1.03, 13.05). As mentioned earlier, the frequency of entertainment visits influenced to the use of club drugs. Adolescent who

frequently visited entertainment place tended to use club drugs significantly more than the occational visits (Odds ratio 3.6, p = 0.029). However, after controlling for other factors, this association was not statistically significant. Family income was another factor that involved with the alteration of the drug use behavior after controlling other variables. With higher family income, there is a statistically insignificant larger chance to use club drugs than those with the lower income (Adjusted odds ratio 13.4, 95% CI:0.66, 270.13).

DISCUSSION

Although, frequency of entertainment visits influenced the use of clubdrugs, two potential factors, i.e., marital status and educational level were recognized. The wide confidence interval in analysis indicated that the sample size in this study is small. The explanation is that during the past few years drug users in Thailand have been tracked by government agencies. As a result, drug users have gone under ground and many drug users refused to participate in the study because of suspicion. The study design of case-control is found to be appropriate since the cases identified from reliable academic database with the confirmation from laboratory test. However, the duration of 2 years, the 2008 database and the approval by ethical committee in 2010 was long enough to the change of adolescence drug use behavior in Thailand.

Thus, reanalysis of recent users is practical. The result showed that the frequency of the entertainment visit enhanced the drug use to 3.65 times higher that the non-user. Particularly, the weekly visit is a key stimulus to use the club drugs. The location of residence was also considered as the stimulus as those who lived within the radius of 500 m away from an entertainment place are at risk of using the drugs 1.6 times more than those who lived further away. The finding agrees with the drug abuse behavior survey conducted by Kanato (2007). The survey showed that students whose family earned >5000 Thai Baht monthly had used drugs (including all kinds of them) the most. Moreover, they found that entertainment places were the most frequent place (66.7%) where the drug use had taken place.

From the Referred to the effective drug abuse prevention concept proposed by Chula Unisearch 2550. National Institute on Drug Abuse (2003), the constructive and destructive factors may effect on every one, the magnitudes however depend on age, gender, ethnic group, culture and surroundings (Beauvais *et al*., 1996). For example, the risk factor for the children is family but their friends become more influential to adolescents. (Gerstein *et al*., 1993; Kumpfer *et al*., 1998). The early intervention to reduce the effect of the risk factors (such as aggressive expressions and lack of self-control) was found to more significant than healing. The involvement can be done by encouraging the adolescents life style away from the problem to more positive expressions (Lalongo *et al*., 2001). Consequently, the drug use protection should be the reduction of negative factors and the multiplication of positive factors (Hawkins *et al*., 2002).

CONCLUSION

Adolescent who visits entertainment place once a week or more will potentially use club drugs 3.56 times of the non users. For family income, the proportion of family monthly income over US$250 is higher in the users group than the non users with no statistically significance at 0.05. The study results inform policy makers on the need of the law enforcement on adolescent visiting entertainment places to decrease. The use among adolescents.

RECOMMENDATIONS

Since, the entertainment visit motivates the use of club drugs, the protection of adolescent from the drugs should be proceeded by the order of the entertainment places to have no permission for those are under 18 of age in order to reduce the risk of using drugs. Adolscents those frequently visit the entertainment places at risk of the drug abuse thus need further psychologically in depth research focusing on the chacteristics of the threatened aldoscents. Such information gives a better understating on the true causes for the problem, leading to the improvement of policies and procedures for correction and prevention of the drug abuse. Referred to NIDA's effective drug abuse prevention concept (2003), the prevention procedures should be determined by the risk factors of the targeted populations in order to enhance the effectiveness of the procedures.

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