Factors Influencing Substance Use among Adolescents in a Higher Secondary School in Thimphu, Bhutan

ปัจจัยที่มีอิทธิพลต่อการใช้สารเสพติดของวัยรุ่น ในโรงเรียนมัธยมศึกษาตอนปลายในเมืองทิมพู ประเทศภูฏาน

Pema Choden, M.S.N.[1] Pornpat Hengudomsub, Ph.D.[2]* Wannee Deoisres, Ph.D.[3]

Pema Choden, M.S.N.[1], ภรภัทร เฮงอุดมทรัพย์, Ph.D.[2]*, วรรณี เดียวอิศเรศ, Ph.D.[3]

Abstract

This predictive correlation study aimed to examine adolescent substance use and its influencing factors including peer drug use, family drug use and misbehaviors, perceived substance refusal self-efficacy, peer connectedness, school commitment and impulsivity. Data were collected from 420 students studying in grade 9-12, in one of the higher secondary schools in Thimphu, Bhutan. The sample was selected through a multi-stage random sampling. Demographic questionnaire, Community That Care Youth Survey, Drug Taking Confidence Questionnaire, Positive Peer Influence Questionnaire and Barratt Impulsive scale were used to collect data. Descriptive statistics and multiple regression analysis were used for data analyses.

The study results found a moderate level of substance use (*M* = 24.40; SD = 8.40). Common drug use included tobacco, cigarette and alcohol. Peer drug use, family drug use and misbehaviors, perceived substance refusal self-efficacy, school commitment, peer connectedness and impulsivity accounted for 66 % of the variance in substance use (R^2 = .66, $F_{6, 413}$ = 131.74, p < .001). Peer drug use was the strongest predictor (β = 0.48), followed by substance use refusal self-efficacy (β = -0.22), family drug use and misbehaviors (β = 0.14), school commitment (β = -0.13) and peer connectedness (β = -0.10). Impulsivity did not significantly predict substance use. The study findings shed additional light on adolescent substance use and its influencing factors. In preventing and reducing substance use, peer drug use, perceived substance use refusal self-efficacy, family drug use and misbehaviors, peer connectedness and school commitment should be considered.

Keywords: Adolescent substance use, family drug use, peer drug use, peer connectedness, substance use refusal self-efficacy, school commitment

บทคัดย่อ

การวิจัยแบบความสัมพันธ์และทำนายนี้ มีวัตถุประสงค์เพื่อศึกษาการใช้สารเสพติดและปัจจัยทำนายการใช้สารเสพติดได้แก่ การใช้สารเสพติดในเพื่อน การใช้สารเสพติดและการมีพฤติกรรมที่ไม่เหมาะสมในครอบครัว การรับรู้ความสามารถในการปฏิเสธการใช้สารเสพติด ความสัมพันธ์กับเพื่อน ความมุ่งมั่นในการเรียน และ

[1] Student of Master of Nursing Science (International Program), Faculty of Nursing, Burapha University, Chon Buri

[2] Assistant Professor and [3] Associate Professor, Faculty of Nursing, Burapha University, Chon Buri

* Corresponding author e-mail: pornpat12@yahoo.com

พฤติกรรมหุนหันพลันแล่น กลุ่มตัวอย่างเป็นนักเรียนเกรด 9 ถึง 12 ของโรงเรียนมัธยมศึกษาตอนปลายแห่งหนึ่งของเมืองทิมพู ประเทศภูฏานจำนวน 420 คน ได้มาโดยการสุ่มแบบหลายขั้นตอน เก็บข้อมูลโดยใช้แบบสอบถามข้อมูลส่วนบุคคล แบบสำรวจการใช้สารเสพติดของเยาวชนในชุมชน แบบวัดการใช้สารเสพติดในเพื่อน แบบวัดความมั่นใจเกี่ยวกับการไม่ใช้สารเสพติด แบบวัดการใช้สารเสพติดและการมีพฤติกรรมที่ไม่เหมาะสมในครอบครัว แบบวัดความสัมพันธ์กับเพื่อน และแบบวัดพฤติกรรมหุนหันพลันแล่นของ Barratt วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนาและการถดถอยพหุคูณ

ผลการศึกษาพบว่าการใช้สารเสพติดของนักเรียนอยู่ในระดับปานกลาง (M = 24.40, SD = 8.40) พบการใช้ยาสูบ บุหรี่ และแอลกอฮอล์ มากที่สุด ผลการวิเคราะห์ถดถอยพหุคูณพบว่าปัจจัยที่ศึกษาสามารถร่วมกันทำนายความแปรปรวนของการใช้สารเสพติดได้ 66% (R^2 = .66, $F_{6, 413}$ = 131.74, p < .001) อิทธิพลของตัวแปรเรียงจากสูงไปต่ำคือ การใช้สารเสพติดในเพื่อน (β = 0.48) การรับรู้ความสามารถในการปฏิเสธการใช้สารเสพติด (β = -0.22) การใช้สารเสพติดและการมีพฤติกรรมที่ไม่เหมาะสมในครอบครัว (β = 0.14) ความมุ่งมั่นในการเรียน (β = -0.13) และความสัมพันธ์กับเพื่อน (β = -0.10) พฤติกรรมหุนหันพลันแล่นไม่พบมีอิทธิพล ผลการวิจัยทำให้ทราบถึงการใช้สารเสพติดและปัจจัยที่มีอิทธิพลต่อการใช้สารเสพติดในวัยรุ่นที่ศึกษา ในการป้องกันและลดการใช้สารเสพติดควรให้ความสำคัญกับปัจจัยที่มีอิทธิต่อการใช้สารเสพติด ได้แก่ การใช้สารเสพติดในเพื่อน การรับรู้ความสามารถในการปฏิเสธการใช้สารเสพติด การใช้สารเสพติดและการมีพฤติกรรมที่ไม่เหมาะสมในครอบครัว ความมุ่งมั่นในการเรียน และความสัมพันธ์กับเพื่อน

คำสำคัญ: การใช้สารเสพติดในวัยรุ่น, การใช้สารเสพติดในครอบครัว, การใช้สารเสพติดในเพื่อน, ความสัมพันธ์กับเพื่อน, การรับรู้ความสามารถในการปฏิเสธการใช้สารเสพติด, ความมุ่งมั่นในการเรียน,

Significance of the problem

Substance use in adolescence is a social and health problem worldwide. According to the latest World Drug Report released by the United Nations Office on Drugs and Crime [UNODC] (2017) in 2015, about one fourth of the billion populations used drugs in which 0.6 percent developed substance use problems like dependence. Substance use is also one of the major causes of mortality and morbidity around the world. Currently, 1.6 million people who inject drugs are living with HIV and 6.1 million are living with hepatitis C (UNODC, 2017). In 2015 alone, approximately 190, 000 drug related deaths were reported worldwide. Bhutan is no exception to this problem.

According to a report by United Nations International Children's Emergency Fund (UNICEF), 84 % of drug users in Bhutan are adolescents between the ages of 13-24 years. This is a cause of concern because more than half of Bhutan's population is below 25 years old and nearly 42 % of the population is below the age of 18 years, making adolescents an important age group (UNICEF, 2015).

Statistics show that the majority of drug users in Bhutan are adolescents. In 2009, a nationwide survey was conducted by Bhutan Narcotics Control Authority [BNCA] in order to establish a baseline data for drugs and controlled substance use in Bhutan. The study revealed that majority of the substance users were students who were in grade 7-12 and studying in the capital city (Panda, Wangdi, Mukherjee, Chowdhury, Wangdi, & Pahari, 2009). The risk and protective factors determine adolescent substance use and they exist in five major domains i.e. individual, peer, family, school and community domains (Razali & Kliewer, 2015). Since adolescence is a period of transition and emotional turmoil, many factors can have

different effects on adolescents. Some are able to cope with the transition and grow up to be healthy and productive adults, while others choose substance use as a way of coping with the stress of being an adolescent. It depends on the individual's personality traits, skills, environment etc.

A number of substance users especially among adolescents have increased by ten folds in the last 10 years (UNICEF, 2015) and yet there has been no study done on factors influencing substance use among adolescents in Bhutan in the past. Attempts to reduce substance use among adolescents may not have been as effective, perhaps because these interventions and prevention program were not evidence based. A systematic assessment into the nature and the extent of substance use in Bhutan has therefore become the prime concern. Knowing the incidence of drug use and its influencing factors would lead to more effective management of substance use among these adolescents.

Purpose of the study

The purpose of the study is to describe adolescent substance use in one of the higher secondary school in Western, Bhutan and to examine influencing factors of adolescent substance use including perceived substance use refusal self-efficacy, impulsivity, family engagement in drug use and misbehaviors, peer connectedness, peer drug use and school commitment.

The Conceptual Framework

The conceptual framework of this study is based on empirical findings where by, factors in the individual, peer, family and school domains have shown strong association with substance use in adolescents (Cleaveland, Fenberg, Bontempo, & Greenberg, 2008). These factors include perceived substance use refusal self-efficacy and impulsivity under individual domain; peer connectedness and peer drug use under peer domain; family engagement in drug use and misbehaviors and lastly, school commitment under school domain. The conceptual framework of this study is summarized in Figure 1.

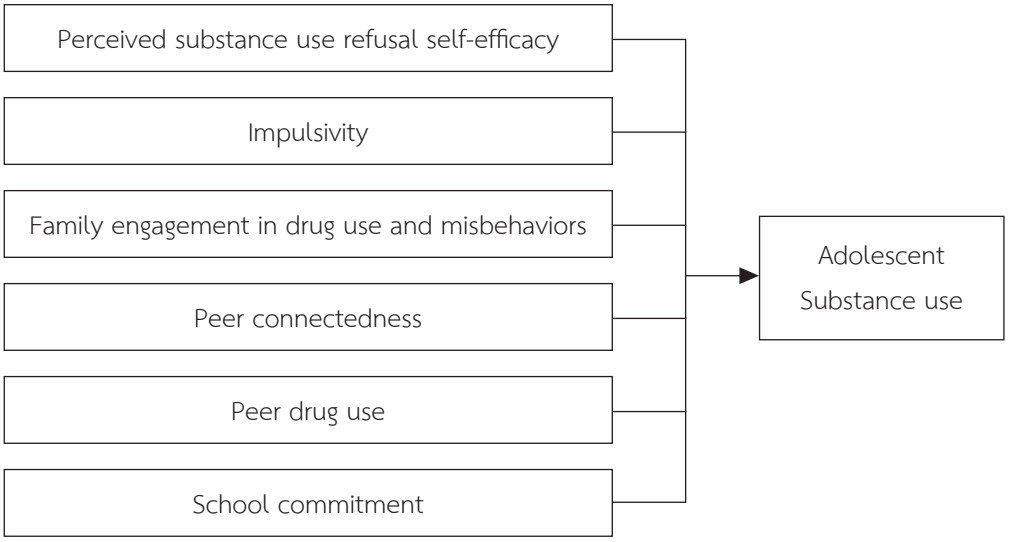

Figure 1 The conceptual framework of the study

Methods

This study is a predictive correlational study design.

Target population was adolescents studying in grade 9-12 in one of the higher secondary schools in Thimphu Bhutan.

Sample was recruited using a multi-stage random sampling method. There are two government higher secondary schools in Thimphu and the total numbers of students studying in these two schools were 2,231 students. So, according to the standardized table developed by Krejcie and Morgan (1970), the sample size for this study was at least 327students. For this study, 420 students were taken as the sample to cover for incomplete data and decrease bias (stigma) since data was collected from the entire class.

Research instruments

A demographic questionnaire was used to measure demographic data. It was developed by the researcher and had 10 items to gather data for participants' age, gender, place of residence, parent's occupation, parents' monthly income, parents' marital status, number of siblings in the family.

The Alcohol, Tobacco and Other Drug use (ATOD) questionnaire from the Community That Care Youth Survey (CTC-YS) was used to measure substance use in adolescents. It was developed by Arthur, Hawkins, Pollard, Catalano and Baglioni (2002) and was supported by the Center for Substance Abuse Prevention of the U.S. Department of Health and Human Services. For this study, part of Alcohol Tobacco and Other Drug (ATOD) use was used to measure drug use behavior in adolescents. The name of the substance used was modified to fit the population of Bhutan. There are 14 items in total that measured life time and 30 day use of smokeless tobacco, cigarette, alcohol, marijuana, N10 and Spasmoproxyvon tablets by the Bhutanese adolescents. Points were scored on a 4 point Likert scale response and the score ranged from 0-56, higher scores indicate higher frequency of substance use and lower scores indicate minimal frequency of substance use. Its reliability was .88.

The Drug-Taking Confidence Questionnaire (DTCQ-8) was used to measure perceived substance use refusal self-efficacy developed by Arthur et al. (2002). It has 8 items in total and the possible score range from 0 to 100 %, 0 meaning not at all confident in resisting the urge to take substance and 100 means very confident in resisting the urge to take substance. Higher percentage indicated higher perceived substance refusal self-efficacy. Its reliability was .94.

The Barratt Impulsiveness Scale (BIS-11) was used to measure impulsivity. It was a 30-item self-report questionnaire developed by Patton and Stanford (1995). It is widely used to measure the personality/behavioral construct of impulsiveness. Items were scored on a 4-point Likert type response with item score ranging from 1 (rarely/never) to 4 (almost always /always). Due to wordings, 11 items (items 1, 7, 8, 9, 10, 12, 13, 15, 20, 29, 30) are reversed scored. The total score ranged from 30-120. Higher scores indicate higher levels of impulsivity and lower scores indicate lower impulsivity. Its reliability was .79.

The Positive Peer Influence Questionnaire (PPQ) was used to measure peer connectedness. It was developed by Coyle, Bramham, Dundon, Moynihar and Carr (2016) and used to measure peer connectedness in adolescents. Higher peer connectedness meant students shared strong supportive bonds with peers and were less likely

to engage in substance use and vice versa. It had a total of 20 items It had three subscales-media youth influence, close friend influence, and community youth influence. Each item was scored on a 5 point Likert scale ranging from 1 (very true) to 5 (not true). Due to the wording of the questionnaires, items was reverse scored such that higher score indicated high rates of peer connectedness and lower score indicated lower peer connectedness. Its reliability was .75.

The Peer Drug Use Questionnaire from the Community That Care Youth Survey (CTC-YS) was used to measure peer drug use developed by Arthur et al. (2002). It was used to assess for negative peer influence. This instrument measured 2 subscales under peer domain i.e. peer drug use and interaction with antisocial peers. Altogether the instrument had 10 items and each of these items was scored on a Likert scale ranging from 0 (None of my friends) to 4 (4 of my friends). Lower score meant low peer drug use and higher score meant high peer drug use. Its reliability was .85.

The family history of antisocial behavior from the Community That Care Youth Survey (CTC-YS) was used to measure family engagement in drug use and misbehaviors developed by Arthur et al. (2002). There were 10 items and it was scored on a 5 point Likert scale. Higher scores indicated higher family engagement in drug use and misbehavior and lower scores indicated lower family engagement in drug use and misbehavior. Its reliability was .76.

The school commitment questionnaire from The Community That Care Youth Survey (CTC-YS) was used to measure school commitment developed by Arthur et al. (2002). It had a total of 8 items and was scored on a 5 point-Likert type response and the total scores ranged from 1 to 25. A high score indicated high school commitment and a low score indicated lower school commitment. Its reliability was .75.

Ethical considerations

After the approval (IRB 07-01-2561) from the Institutional Review Board (IRB) for graduate studies, Faculty of Nursing, Burapha University, Thailand), a proposal was put up with the Research Ethics Board of Health (REBH), Ministry of Health of Bhutan. Next, permission to access selected high school in Western part of Bhutan was obtained from the Ministry of Education (MOE) and also from the Thromdoe education officer. Finally, a letter seeking permission for data collection along with the purpose of the study was presented to the school principal. All participants were asked to give a verbal consent. The anonymity of the participants was ensured by not asking the students to write their names. Instead a code was assigned to each questionnaire.

Data collection procedures

Once the approval letter was obtained from the relevant authorities, the researcher met the school principal and announced the purpose of the study. Next, Consent from both parents/ guardians and participants was obtained. Thereafter, researcher met with the participants and explained the purpose of the study. The participants were allowed to ask for clarification to any questions during the administration. The time frame for completing the questionnaire was 50 minutes, after which they were asked to drop the completed questionnaire in the box.

Data analysis

A statistical software program was used with a significance level of .05. Descriptive statistics was used to describe the demographic information and other variables. Multiple regression analysis

was performed to determine the predictors of substance use in adolescents.

Results

Majority of the respondents were aged from 16-18 years (n = 260) with the mean age of 15.96 (*SD* = 1.38). There were more female (53.30%) than male respondents. Majority of the students lived with their parents (82.90%). Most respondent's father worked as a government service employee (49.50 %) and their mothers were mostly housewife (54.00%). Parents' total income per month was Nu 10,000-20,000 (1 USD = Nu. 67). Most of respondents' parents were living together 77.40%.

The mean score of adolescent substance use is 24.40 on a range of 0-42. Among the users, the most common substance used by the adolescents was tobacco (45%), followed by alcohol (43.10%) and cigarette (39.60%). 71 students (16.90%) used Marijuana at least once in their lifetime. Solvents like glue and aerosol were used by 58 students (14%). The least common substance used by the Bhutanese adolescents was Spasmoproxyvon and Nitrozepam tablets (4.10% and 3.50% respectively). Details of the mean scores of all predictors were presented in Table 1.

Table 1 Description of factors associated with adolescent substance use (*n* = 420)

Variables	Possible Score	Actual Score	*M*	*SD*
Self-efficacy	0-40	8-40	32.63	9.89
Impulsivity	30-120	45-96	70.47	9.29
Peer drug use	0-40	0-34	4.23	5.72
Peer connectedness	20-100	36-100	72.18	13.02
Family drug use and misbehaviors	5-50	5-47	16.04	7.05
School commitment	8-40	8-28	15.89	4.22

Pearson's correlation coefficients were used to explain the relationships between the study variables. Peer drug use (r = .73, p < 01), family drug use and misbehaviors (r = .52, p < 01) and impulsivity (r = .26, p < 01) were positively correlated to adolescent substance use, while substance use refusal self-efficacy (r = -.57, p < 01), peer connectedness (r = -.34, p < 01), and school commitment (r =- .42, p < 01) were negatively correlated to adolescent substance use. (Table 2)

Table 2 Pearson's correlation coefficients between influencing factors and substance use (*n* = 420)

Variables	1	2	3	4	5	6
1. Substance use	1.00					
2. Family drug use and misbehaviors	.52***	1.000				
3. Peer drug use	.73***	.46***	1.00			
4. School commitment	-.42***	-.26***	-.32***	1.00		
5. Substance use refusal self-efficacy	-.57***	-.39***	-.47***	.25***	1.00	
6. Peer connectedness	-.34***	-.26***	-.24***	.26***	.22***	1.00
7. Impulsivity	.26***	.13**	.23***	-.35***	-.22***	-.13**

*** $p < .001$, ** $p < .01$

Standard multiple regression analysis showed that family drug use and misbehaviors, peer drug use, school commitment, substance use refusal self-efficacy, peer connectedness and impulsivity accounted for 66% of the variance in substance use (Adjust $R^2 = .65$, $F_{6, 413} = 131.74$, $p < .001$). Factors which significantly predicted substance use are ordered from strongest to lowest: peer drug use ($\beta = 0.48$), substance use refusal self-efficacy ($\beta = -0.22$), family drug use and misbehavior ($\beta = 0.14$), school commitment ($\beta = -0.13$), and peer connectedness ($\beta = -0.10$). However, impulsivity did not have a significant effect (Table 3)

Table 3 Predicting factors of adolescent substance use (*n* = 420)

Independent variables	B	SE	β	t
Peer drug use	0.50	0.03	0.48	13.61***
Substance use refusal self-efficacy	-0.07	0.00	-0.22	-6.66***
Family drug use and misbehaviors	0.11	0.28	0.14	4.19***
School commitment	-0.18	0.04	-0.13	4.13***
Peer connectedness	-0.04	0.01	-0.10	-3.24***
Impulsivity	0.10	0.02	0.01	0.52
Constant	4.12	2.05		2.01
$R^2 = 0.66$, Adjust $R^2 = 0.65$, $F_{6,413} = 131.74$***				

*** $p < 001$

Discussion

A moderate level of substance use was reported among adolescents with a mean score of 24.40 (*SD* = 8.40). Tobacco mixed with areca nuts and alcohol is widely available throughout the country and use of these substances are not frowned upon because it's somehow a part of Bhutan's culture and is socially accepted which explains the reason for it being the choice of drugs for most adolescents.

Also, adolescence is a stage where the likelihood for the onset of drug consumption increases mainly due to the changes that adolescents experience at psychological, physical and social levels (Cox, 2014).

Peer drug use was the strongest predictor of adolescent substance use (β = .48). The explanation could be due to a significant portion of the adolescents having peers who engaged in substance use such as cigarette smoking, alcohol and other drug use (48%, 46.7% and 25% respectively). Theoretically, peers affect substance use behavior through a variety of mechanisms like providing opportunities, role modeling and skewing normative beliefs and attitudes towards substance use. The findings is also consistent with many other theories like The Social learning theory, which states that people learn a behavior through observing and modeling someone (Bandura, 2001).

Family drug use and misbehavior was the second strongest predictor of adolescent substance use (β =.14). Family instability such as misbehaviors or drug use by the family members may diminish opportunities for learning appropriated self-regulatory skills, therefore leaving children are vulnerable to the development of substance use (Ohannessian, 2012). The adolescents may also have been influenced by their own family members' substance use behavior.

Perceived substance use refusal self-efficacy was also one of the significant predictors of adolescent substance (β = -0.22). This finding is in line with many other studies that indicate that an adolescent having a higher perceived self-efficacy to refuse substance under various situations had lower rates of substance use as compared to those with lower self-efficacy (Kadden, 2011; Tabtimthong, Junprasert & Homsin, 2012). Additionally, this finding is also consistent with social cognitive and learning theory. According to the theory, self-efficacy is identified as one of the variables that determine behavior (Bandura, 1984).

Several studies have indicated that higher school commitment is associated with lesser rates of substance use. When adolescents view school as important, they invest their time in academic activities, which acts as a positive distraction and keeps the adolescents from engaging in maladaptive behavior such as substance use (Wang & Fredricks, 2014). School commitment was negatively correlated to and predicted substance use (β =.18). These findings are also in line with empirical evidences that demonstrate a higher rate of substance use among adolescents with lower school commitment (Myers, 2013; Razali & Kliewer, 2015).

Numerous studies in the past have shown that when adolescents share a supportive bond with peers, they are less likely to engage in delinquent behaviors such as substance use (Coyle et al., 2016; Karakos, 2014). Peer connectedness has shown to be one of the predictors of substance use in this study (β = -.10). As mentioned earlier, adolescents spend a majority of their time with peers. They are bound to be influenced by their relationship with their peers, through role modeling.

Adolescence is a period of stress and storm, and characterized by marked physical and psychological changes (Casey et al., 2010). However, impulsivity was a not a significant predictor of substance use (p > 05). It could be due to the fact that most Bhutanese adolescents

exhibited a very high level of impulsivity with low variation, which may not have been able to predict substance use. Additionally, the questionnaire used did not measure impulsivity specific to substance use, but measured impulsivity in general.

Limitations

Since the data was collected from just one high school in the western part of Bhutan, the findings may have its limitations in generalizability. Caution should be exercised in interpreting the results since all instruments used to capture data were developed in the West, more instruments that are specific and pertinent to Bhutanese context should be developed later.

Conclusion and Implications for Nursing

In providing care to the adolescents with substance use, nurses need to look beyond a single domain and incorporate factors from other domains such as family, peers and school. In the individual domain, nurses may focus on enhancing self-efficacy through education to influence normative beliefs regarding substance use by using appropriate role models, who have had successfully overcome substance use in the past. One of the ways to enhance self-efficacy is motivational interviewing which is within the scope of a mental health nurse. Finding ways to reduce negative peer influence by providing adolescents the opportunity to recognize a high risk situation in which they would likely experience substance use offer, and teaching communication skills to effectively refuse the use of substance use under any situation seem like a logical solution.

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