

## Explain of Ecstasy Use among Kermanshah Adolescents, the West of Iran: an Application of the Theory of Planned Behavior

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**Abstract:** Ecstasy use was known as new epidemic condition at the worldwide. The aim of this study was determine the prevalence and factors influencing ecstasy use based on theory of planned behavior (TPB) among Iranian boy adolescents. A cross-sectional study, was conducted among the 163 adolescents in Kermanshah County, were randomly selected to participate voluntarily in the study. Participants filled out a self-administered questionnaire. Data were analyzed by SPSS-16 using bivariate correlations and logistic regression statistical tests. Almost 6.8% of the participants had used ecstasy. The TPB variables accounted for 21% of the variation in the outcome measure of the intention to ecstasy use. The best predictor for ecstasy use was subjective norms with odds ratio estimate of 1.679 [95% CI: 1.203, 2.342]. Based on our result, it seems that designing and implementation of educational programs to reduce subjective norm toward ecstasy use could be usefulness of the results in order to prevent of ecstasy use.

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### 1. Introduction

Psychotropic drugs are chemical substances that act primarily upon the central nervous system where these substances affect on brain function, resulting in changes in perception, mood, consciousness, cognition, and consequently effect on behavior (1). Stimulant drugs use and abuse among adolescents are of increasing phenomenon, and a number of indicators that reflect increased availability and negative consequences which associated with progressive illicit stimulant use, including medical admissions, and stimulant drug-used related seizures (2-5). In addition, adverse effects of illicit use include psychological and physical dependency, depression and other mental health problems, criminal justice involvement, cardiovascular problems, hyperthermia and convulsions and increased risk of mortality and morbidity (6, 7). Evidences show that stimulant drugs are typically used by teenagers and young adults at the bars, clubs, and parties, and the use of these drugs is reported to help maintain energy levels as well as to enhance an altered state of consciousness; In

addition, of these drugs, illicit use of methamphetamine and MDMA were known as new epidemic condition at the worldwide (8).

In this regard, commonwealth department of health and family services reported the rate of ecstasy use was 1–3% among general population (9), also Boyd and et al reported Approximately 10% used ecstasy in their lifetime; 7% had used within the past year and 3% within the past month (10). Iran is one of many countries in which the prevalence of the psychoactive use has been increasing, especially among the adolescents. Recent studies of the Iranian adolescents and youth reported high prevalence of the ecstasy use, for example 11.5% (Fatemi, 2009), 18.5% (Barooni, 2008); additionally, Allahverdipour (2007) reported that 18% of the Iranian adolescents had at least used the ecstasy one time in their life (11-13).

In drug abuse prevention research, it would be useful to know how cognitive related factors, such as knowledge, social norms or beliefs are responsible to predict intention and consequently behavior (14).

Additionally, certain psychosocial factors, such as attitude, subjective norm, and perceived behavioral control seem to be significant factors in determining the probability of adopting or rejecting a healthy or unhealthy behavior. As a result, it would be important to identify the psychosocial factors that may be antecedent for using ecstasy among adolescents.

The Theory of Planned Behavior (TPB) is designed to predict and explain human behavior in specific contexts (15). In relation to the use of the psychoactive, the TPB postulates that cognitions such as attitude and social norm may predict the intention to begin using the drug. There are published studies to support the predictive validity of the TPB with respect to the psychoactive use (16-19). Regarding the wide incongruities among the results of the studies and also absence of studies in developing countries, our TPB based study focused on exploring cognitive factors related to the ecstasy use in a sample of boy adolescents in the Kermanshah city, the west of Iran.

## 2. Methods

### 2.1. *Participants and Procedure*

This cross-sectional study was conducted on 163 boy adolescent aged 15 to 19 years old with mean of 16.92 (SD = 1.22) years in Kermanshah city in the west of Iran, during 2011. This study was a part of a project conducted with aim of providing knowledge for prevention of psychoactive drugs use and abuse among young male population in Kermanshah, Iran. The sample size was calculated at 95% significant level according to the results of Fatemi (11) study and a sample of 163 was estimated. Being literate for completing written questionnaire were eligibility criteria to participate in this study. To enroll the participants and collect first, different areas of the city were classified based on the municipal divided region, next for each region one crowded area were randomly selected (a total of six area were selected) and finally, participants were enrolled in study voluntarily.

Of the population of 163, 148 (90%) signed the consent form and voluntarily agreed to participate in this study, which has been approved by the institutional applied research bureau of the police of Kermanshah. Prior to conducting the main project, a pilot study was conducted to obtain feedback about the clarity, length, comprehensiveness, and completion time of the questionnaire, as well as estimating the internal consistency of the questionnaires.

### 2.2. *Demographics*

Background data include age, level of education (Elementary, Secondary, High School, and

University), marital status (single or married), having friends who had history of the smoke use (Never, Sometimes, Always), having friends who had history of the drug use (Never, Sometimes, Always), history of Parents' divorce (Yes or No).

### 2.3. *History of Risky Behavior Related Substances Use*

Risky behaviors data collected in this research included: History of smoking (yes/no), Alcohol use (yes /no), marijuana use (yes /no), opium use (yes /no), and history of unsafe sexual behavior (yes /no).

### 2.4. *Ecstasy Use*

To assess whether or not the adolescents had experimented with ecstasy use, we used their responses to one questions; have you ever used ecstasy? For which the response category was yes or no.

## 3. TPB Theoretical Variables

The items which assessed components of the TPB were derived from the scales of psychoactive drug related attitudes and intention to use Mc Millan (16) and Orbell (17) including 18 items for four major constructs of TPB 1) attitude, 2) subjective norms, 3) perceived behavioral control, and 4) behavioral intention. Seven items measured attitudes towards ecstasy use (e.g., If I ecstasy use, it would help me to be relax). There were four items which measured the subjective norms towards ecstasy use (e.g., If I ecstasy use, my best friends will confirm it). Four items measured the perceived behavioral control to not use the ecstasy (e.g., I believe that I can manage myself against pressure of my friends to ecstasy use). The behavioral intention to ecstasy use was measured by three items (e.g., I intend to ecstasy use in the next months). A 5-point Likert type scaling, ranging from 1 (strongly disagree) to 5 (strongly agree), was used to measure reliability coefficients for the TPB constructs which results showed internal consistency of attitude ( $\alpha=0.84$ ); subjective norms ( $\alpha=0.85$ ), perceived behavior control ( $\alpha=0.77$ ), and behavioral intention ( $\alpha=0.83$ ). These results demonstrated that questionnaires were internally consistent.

## 4. Statistical Analysis

The Statistical Package for the Social Sciences (SPSS) was used for the purpose of data entry, manipulation, and analysis. Descriptive statistics analyses were used to summarize and organize the data. Bivariate correlations were computed to ascertain the magnitude and direction of the associations between the TPB variables. Stepwise multiple logistic regression analysis was performed to explain the variation in the ecstasy use on the basis of TPB variables of 1) attitude, 2) subjective norms,

3) perceived behavioral control, and 4) behavioral intention. Cronbach's Coefficient Alpha was used to estimate the internal consistency of the various measures.

## 5. Result

Of the 148 respondents, 6.8% (10/148) were reported ecstasy use. The initiation age for drug use was 12. Regarding the educational status: 0.7 percent (n=1) had in elementary, 8.1% (n=12) middle, 84.5 % (n=125) were high school student or diploma and 6.8 % (n=10) were college student. 3.4 % (5/148) participants were married and 96.6 % (143/148) were single.

Nearly 50% (74/148) and 30.4% (45/148) of the respondents reported that their friends were smoke and drug users, respectively. Nearly 30.4%(45/148) had history of cigarette smoking and 27% (40/148) reported drinking alcohol in lifelong as well as 5.4%

(8/148) for opium, and 3.4% (5/148) history of cannabis use.

19.6% (29/148) people stated that they had received suggestions from others to use drugs and 12.8% (19/148) of them reported that their friends insisted and encouraged them to use drugs.

In addition, 25% (37/148) reported having unsafe sexual behavior (without using condoms or having multiple sexual partners) in his life.

Our result showed 6.8% (10/148) of adolescent had experienced ecstasy in his life.

Table 1 shows bivariate correlations between the TPB constructs, which were statistically significant at either .05 or .01 level. The results showed that intention to ecstasy use was correlated with the positive attitude ( $r=0.222$ ) and subjective norms ( $r=0.442$ ) towards ecstasy use, but non-significant with perceived behavioral control ( $r=-0.079$ ).

**Table 1: Predictor Variables Correlation Matrix**

Variables	Mean (SD)	X1	X2	X3
X1. Attitude	16.91 (6.57)	1		
X2. Subjective Norms	11.68 (4.19)	0.155	1	
X3. Perceived Behavioral Control	12.46 (3.50)	0.188*	-.102	1
X4. Intention to Ecstasy use	7.87 (3.00)	0.222**	0.442**	-0.079

\*  $p < .05$ , \*\*  $p < .01$

A hierarchical multiple regression analysis was performed to explain the variation in intention to ecstasy use, using the TPB variables. As can be seen in Table 2, TPB variables were statistically

significant for predicting ecstasy use which, they were accounted for 21% of the variation in intention to use the psychoactive drug, ( $F=20.374$ ,  $p < 0.001$ ).

**Table 2: Predictors of the Intention to Ecstasy Use**

Variable	B	SE B	B	t	P-value
Step 1					
Attitude	0.071	0.035	0.156	2.057	< 0.041
Subjective Norms	0.299	0.054	0.417	5.581	< 0.001
Perceived Behavioral Control	-0.006	0.064	-0.007	-0.092	< 0.926
Step 2					
Attitude	0.072	0.034	0.157	2.113	< 0.036
Subjective Norms	0.299	0.053	.0418	5.623	< 0.001

Adjusted R squared = 0.21,  $F = 20.374$ ,  $p < 0.001$

Finally, a step-wise model building procedure was conducted and finally on 2<sup>nd</sup> step the procedure stopped and the best model was selected, among the TPB constructs: subjective norms were the more influential predictor on ecstasy use.

## 6. Discussion

The crossover from teenage years to adulthood is one of the most dangerous stages in which these individuals tend towards drugs, because of their specific mental and physical characteristics. In Iran

studies show that most psychotropic drug addicts are teenagers (22). In this regard, studies performed in Iran have reported an 11-18% of ecstasy use among teenagers and young adults. It seems that this difference results from the difference in the studied population, because some studies have only focused on one gender, although students were selected as the research population, and therefore, the difference was significance.

Our result showed, the three predictor variables of (a) attitude, (b) subjective norms, and (c)

perceived behavioral control accounted for 21% of the variation in the outcome measure of the intention to ecstasy use. In addition, regression logistic analyze indicated the best predictor for ecstasy use was subjective norms with odds ratio estimate of 1.679. Many studies have addressed the predictive value of subjective norm to ecstasy, alcohol consumption, anabolic steroid, or illicit substances by adolescents (16-21). Consequently, the results confirm

suggestions that the TPB is a suitable theoretical basis for the implementation of the psychoactive drug use preventative programs for users. It appears encouraging drug abuse by peer could be underlies for ecstasy among adolescents. These findings could be applied in designing psychotropic drug abuse preventive intervention, and our result would suggest that interventions for teenager population should be focus on peer groups.

**Table 4: Multiple Logistic Regression Analysis for TPB Variables Related to Ecstasy Use**

Variables	B	S.E.	Odds Ratio	95% Confidence Intervals		P value
				Lower	Upper	
<b>Step 1</b>						
Attitude	0.051	0.062	1.053	0.933	1.188	0.406
Subjective Norms	0.513	0.170	1.670	1.197	2.331	0.003*
Perceived Behavioral Control	-0.172	0.101	0.842	0.690	1.026	0.088
Behavioral Intention	0.264	0.168	1.302	0.936	1.811	0.117
<b>Step 2</b>						
Subjective Norms	0.518	0.170	1.679	1.203	2.342	0.002*
Perceived Behavioral Control	-0.182	0.100	0.833	0.685	1.014	0.068
Behavioral Intention	0.294	0.169	1.341	0.964	1.866	0.082

In this regard, Gilbert (23) showed the relationship between subjective norms and alcohol, marijuana and cigarette use. Also, McAlister (24) state that reducing the amount of social pressures leading to drug use among students is the predictive factor for the reduction of drug use in this group.

The study findings also indicated the high prevalence of unprotected sex experience among participant. Previous research showed relationship between using psychoactive drug use and having a history of high risk sexual behavior (25-27). People addicted to stimulating drugs usually have little control over their sexual behavior and they are pay less attention to health issues and are at a higher risk of being infected with HIV, hepatitis B and C; these results can be warning to health policy makers in Iran; and should be the focus of special attention.

The findings reported in this study have certain limitations. First, data collection was based on self-reporting, which is usually prone to recall bias Second, data collection only among boy adolescent.

## 7. Conclusion

Drug abuse predicting factor understanding would be facilitate for prevention program implementing, our findings suggested that ecstasy use prevention program among adolescents should be focus on reduce subjective norm toward ecstasy use.

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