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Application of Planned Behavior Theory to Predict Drug Abuse Related Behaviors

Sayed Saeid Mazloomy Mahmood Abad [1], Khair Mohammad Jadgal [2], Ehsan Movahed [3]

1. Social Determinants of Health Research Center and Department of Health Services, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.
2. Department of Health Education and Health Promotion, Shahid Sadoughi University of Medical Sciences,Yazd, Iran.

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Corresponding Author:
Khair Mohammad Jadgal
kh_jadgal@yahoo.com

ABSTRACT

Introduction: Drug abuse among adolescents potentially holds several negative consequences for the health and well-being of the youth. This theoretically based study explained predictability of the Theory of Planned Behavior (TPB) on drug abuse related behaviors among adolescents.

Methods: This descriptive study was conducted in Yazd City, Iran, in 2015 among 125 male adolescents in the age range of 11 - 29 years, recruited randomly. All data gathered by using self-report written questionnaires included attitudes, subjective norms, perceived behavioral control, intention not to use drugs as theoretical constructs of TPB, and drug abuse related behaviors.

Results: The results showed that 18 % of participants were smoker, 97 % of them did not have history of synthetic drug abuse by parents, and 6 % of participants reported synthetic drug abuse by friends. Results of Chi-square test showed that there was a significant relationship between smoking and father's education, family size, history of synthetic drugs in parents, history of synthetic drugs in friends, and participants' job ($P > 0.000$). However, maternal education ($P = 682$) and living with parents ($P = 729$) did not have any significant relationship.

Conclusions: The low prevalence of Drug abuse in this study in comparison with the existing statistics can attribute to lack of participants' reports.

Keywords: Theory of Planned Behavior, Drug Abuse, Adolescents.

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Introduction

Substance abuse by people in all parts of the world has long been of scientific, political, and public concern [1, 2]. This concern is due to the potential short- and long-term adverse effects associated with use of substances such as cigarettes, drugs, cannabis (dagga) etc., on individuals' well-being [1, 3].

Drug abuse among adolescents potentially holds several negative consequences for the health and well-being of the youth, including increased risk of casualties due to interpersonal violence, road accidents, increased probability of involving in high risk sexual behaviors, and increased risk for suicidal ideation and behaviors. Also, drug abuse has been associated with problem for academic performance, truancy, and school drop-out [4].

Substance abuse is a non-adaptive model of substance use, which leads to many problems and adverse outcomes. It has a series of cognitive, behavioral, and psychological symptoms. It is also one of the important social pathologies, which not only endangers individuals and society's health, but also leads to mental and ethical decline [5].

As opium production in neighboring Afghanistan has dramatically escalated over the past decade, Iranian society has been influenced more than any other society [6, 7].

In the United States, at least 1400 students die from alcohol-related unintentional accidents every year [8].

In South Africa, substance abuse is extremely serious, while the reported drug usage is two times more than the world's norm. Over 15 % of the population suffers from a drug problem [9, 10]. The figures published by the South African Police Service show that drug abuse accounts for 60 % of all crimes conducted in this country [9].

The results of a study on medical students at the University of Tehran in 2009-2010 showed that the highest rate of addiction belonged to hookah (25.7 %), followed by cigarettes (18 %), alcohol (11.8 %), and opium (2.3 %) [11].

Furthermore, some other studies indicated that there is a link between adolescents' drug abuse and low self-control, which leads to engaging in crimes and deviant behaviors [12, 13].

There are a large number of studies which have shown that various mental health disorders can be concordant with drug abuse problems. Zanganeh [14] stated that social isolation and lower socio-economic status can be associated with psychiatric disorders, including drug abuse. Emami et al. [15], indicated that 19.5 % of 4599 high school students in Tehran have had mental health problems. The frequency of such problems was higher in girls than boys. Alcohol and drug use can be associated with high risk sexual behavior [16] and other risk-taking behaviors in Iranian adolescents [17] and can be a risk factor for HIV transmission.

The studies showed that the rate of drug addiction nearly doubles every 12 years in Iran and an 8 % is added to the addicts' population annually [18].

Adolescent drug use in Iran shows co-morbidity with mental disorders, especially depression and anxiety disorders [19, 20].

There is evidence that substance -using adolescents have greater psychological dysfunction [21]. Childhood and family adverse events are also associated with more drug abuse problems [22, 23].

Theory of Planned Behavior (TPB) provides a systematic framework to determine factors which influence a person's decisions to accomplish behaviors such as intentional use of illicit drugs as well as alcohol consumption and smoking [24]. In relation to the use of illicit drugs, the TPB presumes that cognitions such as attitude and social norms may predict the intention to begin using these drugs.

There are many studies supporting the predictive validity of the TPB regarding drug abuse [25, 26].

These studies confirm the association of TPB constructs with drug abuse and show that more positive attitudes, more positive perceived norms, and lower efficacy to refuse drug abuse (marijuana) predict greater intentions to use marijuana, and that intentions in turn predict marijuana use [27, 28].

Based on the above mentioned background, the current study examined application of Theory of Planned Behavior (TPB) to explain drug abuse

related behaviors and to investigate which reasoned pathway could enhance the prediction of intention to drug abuse.

Methods

The current research is a descriptive study which aimed to examine the TPB structures in synthetic drug abuse among adolescents of Yazd City. Considering both the 3.35 Standard deviation [29] and 0.06 % error rate, and 5 % alpha level, the sample size was considered to be 119 individuals. However, in order to increase the accuracy of the study, 5 % was added to the sample size and a final number of 125 individuals were registered.

In this study, stratified random sampling was applied in which Yazd city was divided into 3 zones and the parks located in each zone were selected as the sampling area. Then, a total of 42 participants were explained about the purpose of study and with their consent, completed the questionnaires by interviewers direct referral researcher's monitor.

Inclusion criteria included young men in the age range of 11-29 years in Yazd City with consent to participate in the study; exclusion criteria included non-Iranian individuals aged under 11 and above 29 years.

After preparing the questionnaire, it was sent to 10 proficient professors for validity and reliability check and rectified after applying their comments; professors' comments are available in this regard. Afterwards, the questionnaires were given to 30 participants who were very similar to both mentioned groups to express their opinions about the questions and their comprehensibility to check questionnaire's reliability. After removing ambiguities, the individuals completed the questionnaires; Cronbach's alpha was applied to assess the correlation and then the questionnaire was prepared after obtaining sufficient test score. The questionnaire consisted of 49 items; 13 questions on demographic information of participants, 6 questions on behavior, 6 questions to measure knowledge, 10 questions to measure attitude, 4 questions to measure subjective norms, 6 questions to measure perceived behavioral control, and 4 questions to measure behavioral intentions. Furthermore, the questionnaires were scored as follow: in knowledge questions, the option "yes" was given a score of 2, the option " do not know" was given a score of 1, and the option "no" was given a score of 0. In this part the maximum and minimum scores were respectively 12 and zero. In questions on attitude, questions 1 and 2 got score of 5 for the option "strongly disagree" on the 5-point Likert scale continuum , " disagree" option got a score of 4, " do not know" a score of 3, " agree" score of 2, and " strongly agree" a score of 1. For questions 3 to 10, the option " strongly agree " was given a score of 5, " agree" a score of 4, " do not know" a score of 3, " disagree" a score of 2, and "strongly disagree" a score of 1, whereby the maximum and minimum scores were 50 and 10, respectively. In questions of behavior, for question 1, the option " yes" was given a score of 2 and option " no" was given a score of 1. For questions 2-6, the option "always" got a score of 3, the option " sometimes" a score of 2, and the option "never" a score of 1, whereby the maximum and minimum scores were 17 and 6, respectively. For questions on subjective norms, shown in percentage, the score was determined based on the influence of subjective norms on avoiding synthetic drug abuse. In perceived behavioral control questions, the option " strongly agree" was given a score of 5, " agree" a score of 4, 'neutral" a score of 3, "disagree" a score of 2, and " strongly disagree" a score of 1, whereby the maximum and minimum scores were 20 and 4, respectively. After completing the questionnaire, the results were collected and fed into SPSS. Central tendency (mean) / dispersion (standard deviation), tables, and charts were used to describe data. Independent t- test and Pearson's correlation tests were applied to analyze the results.

Ethical Considerations is IR.SSU.SPH.REC.1395.104

Result

The study was conducted on 125 young men aged 11-29 years in City of Yazd. Paternal education levels of the individuals under study included: 6 % with an academic degree, 38 % high school, 32 % secondary school, 21 % elementary

school, and 3 % illiterate. Most families had less than 5 members (83 %). Most participants lived with their parents (94 %), 18 % of them reported smoking, 97 % had no history of synthetic drug abuse by parents, 6 % reported synthetic drug abuse by friends, and 89 % of participants were single (Table 1).

Table 1. Frequency and relative distribution of participants based on demographic characteristics

		Number	Percent
Age (year)	11-14	25	20
	15-18	19	15
	19-22	31	25
	23-26	32	26
	27-29	18	14
Education level	Illiterate	4	3
	Elementary	26	21
	Secondary	40	32
	High school	47	38
	Academic	8	6
Family member	Less than 5	104	83
	More than 5	21	17
Life status (living with)	Both parents	118	94
	One parent	6	5
	Other people	1	1
Smoking experience	Yes	22	18
	No	103	82
Drug use by parents	Yes	4	3
	No	121	97
Drug use by friends	Yes	8	6
	No	117	94
Marital status	Single	111	89
	Married	11	9
	Divorced	3	2

The relationship of smoking history with demographic and contextual variables was analyzed with Chi- square statistical test, showing a significant relationship between smoking and father's education, family size, parental history of synthetic drug abuse, as well as history of synthetic drug abuse among friends and occupation ($p < 0.001$). But there was no significant relationship between mother's education ($p = 682$) and living with parents.

Table 2. shows the mean and standard deviation of behavior, knowledge, and the theory of planned behavior variables. As it can be seen, mean score of attitude toward behavior is more than other variables, while behavioral intention's score is the least.

Table 2. Mean and standard deviation of behavior, knowledge, and the theory of planned behavior variables.

Knowledge	Mean	Standard deviation	Maximum	Minimum
	10.38	1.77	14.5	6.6
Behavior	11.41	1.37	15.4	8.8
Attitude	24.25	3.8	30.8	16.5
Subjective Norms	9.98	1.59	12.16	6.6
Perceived Behavioral Control	13.37	1.87	17.6	8.8
Behavioral Intention	9.63	1.39	13.20	5.5

Table3. represents the mean and standard deviation of behavior, knowledge, and the theory of planned behavior variables based on demographic variables. one way ANOVA test showed that there was a significant difference between knowledge, attitude, and subjective norm scores with demographic variables of paternal education level ($P < 0.05$). However, there was no significant difference between behavior and other structures of the theory of planned behavior (perceived behavioral control and behavioral intention) with paternal education level and marital status ($P > 0.05$).

Table 3. Mean and standard deviation of behavior, knowledge, and the theory of planned behavior (TPB) variables based on demographic variable.

Demographic variables		Behavior		Knowledge		Attitude		Subjective Norms		Perceived Behavioral Control		Behavioral Intention	
		Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Marital status	Single	11.24	1.37	10.69	1.84	23.59	4.20	10.03	1.63	13.36	2.04	9.35	1.43
	Married	11.44	1.37	10.33	1.76	24.36	3.73	9.97	1.59	13.37	1.85	9.68	1.38
Independent T test		P = 0.411		P = 0.232		P = 0.236		P = 0.821		P = 0.968		P = 0.158	
Father's education	Illiterate	11.31	1.23	10.52	1.82	25.32	3.18	10.18	1.66	13.58	1.82	9.53	1.31
	Primary	11.39	1.42	10.26	1.75	23.47	3.96	9.77	1.54	13.15	1.87	9368	1.4
	Secondary	11.85	1.57	10.48	1.74	24.26	4.19	10.27	1.49	13.71	1.95	9.79	1.61
One Way ANOVA		P = 0.938		P = 0.020		P = 0.000		P = 0.019		P = 0.230		P = 0.452	

Table4. Frequency distribution of subjective norms (the most influential factors on not using synthetic drugs: to answer the question "Who can best help and advise people not to use drugs?"

Subjective Norms	Participants	
	Number	Percent
Parent	29	23.2
Friends	18	14.4
Clergymen	20	16
State officials	15	12
Teachers and Professors	8	6.4
Sound and Vision	9	7.2
Press	2	1.6
Satellite	4	3.2
Celebrities (such as athletes, actors, etc)	11	8.8
Others	9	7.2

According to data in Table 5, Pearson's correlation test between behaviors, knowledge, the theory of planned behavior, and age variables showed that correlation between the studied variables (knowledge, behavior, attitude toward behavior, subjective norms, and perceived behavioral control) in 0.01 level is significant and ranges from medium to high.

Table 5. Correlation between behavior, knowledge, TPB structures, and age variables (Pearson's correlation test)

Variable	Pearson correlation	Behavior	Knowledge	Attitude	Subjective Norms	Perceived Behavioral Control	Behavioral Intention	Age
Behavior	correlation coefficient		r =0.462	r = 0.314	r = 0.370	r = 0.262	r = 0.435	r = 0.024
	p-value		P = 0.001	P = 0.002	P = 0.001	P =0.008	P = 0.001	P = 0.684
Knowledge	correlation coefficient			r = 0.419	r = 0.311	r =0.168	r = 0.345	r = 0.455
	p-value			P = 0.001	P = 0.007	P =0.048	P = 0.008	P = 0.002
Attitude	correlation coefficient				r = 0.416	r = 0.389	r = 0.275	r =-0.132
	p-value				P = 0.000	P = 0.005	P = 0.019	P = 0.022
Subjective Norms	correlation coefficient					r = 0.262	r = 0.354	r = -0.015
	p-value					P = 0.029	P = 0.005	P = 0.797
Perceived Behavioral Control	correlation coefficient						r = 0.097	r = 0.020
	p-value						P = 0.095	P = 0.732
Behavioral Intention	correlation coefficient							r = 0.022
	p-value							P = 0.701
Age	correlation coefficient							
	p-value							

Discussion

The study results show that behavior mean score is 11.44 out of 17 indicating prevalence of high – risk behavior for drug abuse. Research findings of the study conducted by Talaei et al. [30], showed that behavior mean score of participants is low in case of drug abuse indicating prevalence of predisposing behavior towards drug abuse.

Based on our findings, most adolescents' knowledge of risks and effects of drug abuse was high, that is, the mean score of knowledge of the dangers of synthetic drug abuse was 10.38 out of 12. This indicates that participants' knowledge about drug is high which is probably due to the fact that Yazd is one of the developed cities in terms of educational facilities [31]. The result of the present study is consistent with Bashirian et al. [4], study outcomes.

The findings of the current study showed that mean score of attitude is 24.25 out of 50, so almost half of the studied individuals have negative attitude toward synthetic drug abuse which can make people commit high- risk behaviors (drug abuse). The result of the present study is consistent with the findings of Mooan et al. [32].

The achieved results confirm that the most important subjective norm (influential person in preventing drugs abuse) for the studied participants was their parents, while in Nakhaei et al. [20], study, the most influential people to encourage the target group to avoid drugs were their friends.

Regarding the variables related to perceived behavioral control, the mean score was 13.37 out of 30 indicating poor behavioral control to perform drug abuse prevention behaviors among the studied individuals. Therefore, there is a need to intervene to improve this vital variable. Similar studies such as those conducted by Bashirian et al. [4], and Todd et al. [26], also confirm findings of the current research.

Given the analysis on behavioral intention variable as an important facilitator and factor to conduct drug abuse preventive behaviors in the studied samples, the mean score was 9.36 out of 20. This score indicates poor behavioral intention for drug abuse preventive behaviors and necessity to promote intentional behavior to perform drug abuse preventive behavior. The results of the present study are consistent with those reported by Todd et al. [26].

Conclusion

According to Pearson's correlation test, there is a strong and positive relationship between knowledge and attitude of the studied individuals. This means that with increasing age, participants' knowledge and attitude also increased. The findings of Pasharavesh et al. [33], and jabari Bayrami and colleagues [34] confirmed our findings. Therefore, developing and conducting educational programs based on the TPB should be considered by planners. Since preventive actions have less cost than treatments, youth empowerment is important in family and society health promotion, and also due to low level of positive attitude among the participants.

One of the constraints of this study was that access to the samples under study was time consuming and difficult.

For future studies, youth education based on the theory of planned behavior to prevent synthetic drug abuse should be taken into account.

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Conflict of Interest

No conflict of interest reported by authors.

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