

ORIGINAL ARTICLE

Perceived therapeutic effects of street drugs affect knowledge, attitude and practice of medical and health students

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Abstract

Objective: Cultural factors may influence health. Street drugs (SDs) and traditional medicines are commonly used in Iran. Opium has been recommended for pain relief and diarrhea in Iranian traditional medicine. This study seeks to explain the potential knowledge, attitude and practice of students towards the therapeutic effects of SDs. It further seeks to hypothesize cultural and ethnic related SDs use.

Methods: A construct validated questionnaire was piloted and used. Over 800 students of Mashhad University of Medical Sciences, Iran were invited to participate in this study ranging in age from 16 to 52 years and included 520 females and 289 males, respectively.

Results: Knowledge of potential therapeutic use of SDs, declared by 73%, was significantly associated with attitude (odds ratio (CI 95%) 1.62 (1.11, 2.37) and the recommendation of use to others (1.79 (1.08, 2.97)).

Conclusion: Growing use of SDs is, at least in part, influenced by being marketed as medications. Drug abuse could be culturally or ethnically oriented.

Keywords

Attitude, ethnic groups, knowledge, practice, street drugs, traditional medicine

History

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Introduction

Cultural factors may influence health (Madan et al., 2008; McGee, 2000) although difference within sub-populations including other identities or locations in structures of class, gender and generation could affect overall between group differences (Adamson & Atkin, 2008; Culley, 2006).

Race/ethnic differences in use of pre-scripted therapeutic classes have been reported in Black, Hispanic and white subjects (Hall et al., 2010). Similarly, lifetime substance use has been observed to be higher among youth of color and multiracial adolescents (Jackson & LeCroy, 2009). It is known that biologic variation exists in pharmacology of opioids among different ethnic groups (Cepeda et al., 2001). Although genetic differences may impact drug use, it has shown that even pattern of prevalence and mode of heroin use have differently changed among Blacks and Hispanics arrestees in comparison to White subjects (Golub & Johnson, 2005). This raises additional dynamic ethnical contribution in drug use. Race mainly implies to limited genetic differences between “racial” groups, which is misleading. On the contrary, “ethnicity” may help to determine an etiology, assess need, make public health plans and direct resource allocation (Afshari & Bhopal,

2010; Bhopal, 2004). This study aimed at determining potential ethnic and cultural impact on (SDs), and seeks potential further culture related explanation for reported racial differences of SDs use. Accordingly, this study tries to ascertain knowledge, attitude and practice (KAP) towards the therapeutic effects of SDs, and to explore the impact of KAP. As far as we know, therapeutic effects of SDs have never been explored before.

Despite heavy regulation, (SDs) are common in Iran (Afshari et al., 2004; Vazirian & Bolhari, 2006) and, consistent with existing literature, act as a gateway to more dangerous drugs (Afshari & Shafaeeyan, 2006). Possibly driven in part by the widely accepted use of traditional or herbal medicines (Ahmadi et al., 2004), illegally touted as a remedy for a variety of conditions including pain, diarrhea and cough in Iranian traditional medicine (Norn et al., 2005), SDs are increasingly and successfully being marketed under the guise of herbal medicines (Dennehy et al., 2005). Efforts to elucidate the underlying factors contributing to this dilemma are few.

Unlike other courtiers in the Middle East, over 70 million Iranians are dominantly Shia-Muslims, speak Persian (Farsi) and via a historical point of view are under the cultural influence of old Persian Empire. Theriac has been used as the Persian word for opium in the past. It is extensively used as universal antidote in old literature. The epic poet of Persia, Ferdowsi (935–1020), wrote in Key-Ghobad story from the agony of enemies of an endless war “people did not wiped

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out, poisons did not turn theriac. Kill one, another grows. Kill a king, another stands. People did not wiped out, toxins were not turned theriac (antidote)’’ (Ferdowsi, 1990). Avicenna (980–1030 AD), the most celebrated Persian Scientists, wrote enthusiastically about opium induced therapeutic affects (Avicenna, 1999; Aziz et al., 2000; Norn et al., 2005). On this traditional scientific culture, opium is continued to be illicitly marketed for its therapeutic effects including pain relief and anti-cough and diarrhea among people. As a plant derivative, it has also gained popularity for having limited side effects.

Although raw opium and its physical extract, locally called Shireh, are traditionally perceived to have some therapeutic effects, traditional medicine is silent in regard to marijuana as well as newly developed SDs including diamorphine (heroin).

Students were studied to represent the views of rather young healthy people, as older and in particular diseased subjects were expected to be exposed to a body of related information from lay medicine, and therefore biased from the general healthy population. Although subjects were mainly young a wide age range of students was included. The study was approved by an Investigational Review Board (Human Studies Committee of Mashhad University of Medical Sciences).

Methods

Design and sample

Ethical approval for this study was obtained from Mashhad University of Medical Sciences (MUMS). A construct questionnaire composed of open and closed-ended questions was developed and validated by members of the teaching board (toxicology and psychiatry), nurses and students. Reliability was checked by repeating the questionnaire in 12 students. The study was then piloted in 20 students, and the findings (percentage of main variable) used to determine the sample size. In a field study, over 800 students in year 1 to 3 (around 10%) were then invited to participate in November 2009. Target population mainly consisted of young and healthy students of medical sciences with a female dominance (62%). A team of 4 students (co-authors; M.J., S.H., E.M., S.N.) gathered data. Questionnaires were self-completed by the participants, while observed by one of the members of the research team. They were also meant to provide any clarification if needed.

No inclusion criteria, but studying in this University, were fixed. Two none Iranian students according to their place of birth, however, were excluded. Data was recorded anonymously. Total student population (around 7500) was categorized according to their faculties and the year elapsed from their enrolment. A sample of each cluster selected and forms were completed by all cluster members.

Search strategy

PubMed was searched with selected key words. Softwares including Old Persian literature were also searched. Local influential individuals were interviewed. Authors’ personal experiences were taken into account to develop the idea. The overall search was not systematic.

Measures

Variables related to their KAP in relation to therapeutic effects of SDs were studied. Validated questioner composed of 29 questions including knowledge ($n = 8$), attitude ($n = 7$) and practice ($n = 14$). Each part contained an open-ended question for not mentioned issues.

Analytic strategy

Data were reported descriptively. Statistical analysis including Student’s *t*-test and chi-Square were also performed using SPSS version 11.5 (Chicago, IL). Throughout the analysis, $p < 0.05$ was considered to be significant.

Results

Demographic

Overall, 766 students returned the completed questionnaire. Mean age (SD) was 20.8 (3.4) year with a minimum of 16 and a maximum of 52 years. A female predominance 66% was found, which was not significantly different from the overall gender distribution of students. They were mainly single (91%).

Knowledge

Students reported that they had previously heard of SDs’ potential adverse (91%) and therapeutic (73%) effects ($n = 766$). Among them, 147 subjects answered the open-ended questions. The majority (85%) had heard of SDs’ therapeutic effect for curing pain (general, arthritis, bone, head, migraine and cancer pain), and to a lesser extent common cold (8%) and psychological disturbances (7%).

Some reported being aware of potential adverse effects of SDs including psychological problems (26%), cancers (15%), drug dependency (14%), gastrointestinal disorders (9%), cardiovascular disorders (8%), respiratory disease (7%), physical weakness (7%) and adverse effects on the unborn fetus (6%).

Attitudes

The majority of students (77%) reported their belief of some level of therapeutic effects of SDs. Understanding of related adverse effects was reported by more than half (53%). Attitudes of students were positive toward beneficial effects of SDs for controlling pain (83%), common cold (27%), and diarrhea (25%; Table 1). They, however, believed that SDs is harmful for cancer (52%), constipation (44%), psychological disorders (48%) and cardiovascular diseases (48%; Table 1).

Main contributing reasons for drug dependency via an open question were believed to be social (51%), psychological (35%) and familial (14%; Table 1). Among social factors unemployment (31%), cohorting with the ‘‘wrong’’ crowd (22%), limited social entertainment (17%) were perceived to be the most dominant reasons. In regard to psychological contributors, lack of knowledge (20%), general psychological problems (19%), unmet psychological needs (19%), and curiosity (14%) were the most dominant determinants. Familial factors primarily included with families prolonged

Table 1. Attitudes of students towards the use of street drugs.

Attitude (<i>n</i> = 766)	(<i>n</i> = 766)	Beneficial%	No effect%	Harmful%	Score ^a	No comment%
Therapeutic effects	77% Pain	83	1	7	76	10
	Common cold	27	22	11	16	40
	Diarrhea	25	16	12	13	47
Adverse effects	53% Cardiovascular disease	30	3	48	18	20
	Psychological disorders	30	3	48	18	20
	Constipation	5	8	44	39	43
	Cancer	10	7	52	-42	31
Reasons for dependency	51% Social	Unemployment (31%), Bad friendship (22%), Lack of social funs (17%), Financial problems (10%), Social problems in general (10%), Cultural problems (5%), Easy accessibility (2%), Government (1%), Propaganda (1%)				
	35% Psychological	Lack of knowledge (20%), Psychological problems in general (19%), Unmet psychological needs (19%), Curiosity (14%), Lack of self steam (7%), Escaping from reality (6%), Lack of identity (4%), Lack of religious believes (4%), Hopelessness (3%), lack of determination (3%), loneliness (1%)				
	14% Familial	Familial problems in general (38%), lack of familial control (28%), Familial involvement (17%), Being too affluent (10%), Marriage problem (7%)				

^aProposed score is equal to beneficial% minus harmful%.

disagreement (38%), lack of familial support (28%) and familial history of involvement (17%).

Practice

THIS WAY MIGHT BECOME MISLEADING. Fourteen percent of students reported to have used SDs (among them 59% were male). While only 9% had used SDs for medical purposes (50% male), 16% previously recommended SDs as medication (57% male). Majority of cases did not answer the open-ended question related to the type of diseases they recommended SDs for.

Among 109 subjects who reported using SDs, alcohol (62%), which is illegal in this country and opium (43%) were the most popular ones, which were used for at least one time. Two third of opium users, and one third of alcohol users have never tried them again. Diamorphine (heroin), marijuana and amphetamines were used once by approximately 20% of students. Almost none of the subjects repeated their use Cocaine, methadone and buprenorphine have been hardly used by these students ($\leq 4\%$).

For comparison smoking, including cigarette and tobacco (locally called Ghelyan), were also checked. Majority of students smoked at least one time (98%) and almost a quarter of them smoked in the past 2 weeks.

Male versus females

Knowledge (76% M, 71% F) and attitude (78% M, 77% F) of therapeutic effects were similar among both genders. Practice of therapeutic use, however, was significantly different (13% M, 7% F, $p = 0.004$) ($n = 766$).

Transition from knowledge to attitude and practice

Knowledge of therapeutic effects was significantly associated with attitude (odds ratio (CI 95%) 1.62 (1.11, 2.37)) and recommending use to others (1.79 (1.08, 2.97)). It was not, however, related to the students who have actually used SDs. Positive attitude of therapeutic effects was significantly associated with practice of recommending (2.14 (1.20, 3.80)), but not with therapeutic practice. Knowledge of

SDs' adverse effects was significantly and negatively associated with the attitude of their use (2.38 (1.37, 4.12)) but not associated with practice of recommending and personal use.

Discussion

This study showed that some information is available to students in regard to therapeutic use of SDs mainly for pain, common cold and psychological disturbances. Psychological problems were also known to be the main side effects of SDs'. Perception of these students was similar to their knowledge. Practice of recommending SDs to others and their personal use, however, were far less frequent.

One previous study has shown that the pattern of use of SDs is affected by cultural attitude (Ahmadi et al., 2004). SDs are being marketed as herbal medicines such as theriaca, Indian herbal medicine, elixir Paregorico in Brazil contain opium (Basu et al., 2010; de Moraes et al., 2008; Norn et al., 2005). In this study, previous findings are extended to show that general positive knowledge, attitude and to a lesser extend practice exist for medical use of SDs. Potential medical uses should therefore be focused in developing preventive measures. Personal practice should be covered separately.

In regard to SDs' therapeutic use, knowledge, attitude and recommending to others, but not personal use were correlated. This gap might be related to the lack of accessibility or it may show students' concern about SDs potential side effects on their own health. Although similar findings have been reported before (Malara et al., 2005), these findings are not consistent with some other studies on drinking in which beliefs about the dangers of excessive consumption was shown to be negatively related to heavy drinking (Dantzer et al., 2006).

While knowledge and attitude towards SDs' induced adverse effects were associated, no relation found with personal use or recommending SDs for medical purposes. As a result, practice as well as attitude and knowledge of SDs potential side effects should be targeted in developing effective preventive measures.

We found alcohol, opium, marijuana, heroin, ecstasy, cocaine, buprenorphine and methadone were the most common SDs among students, which were male dominant. A similar pattern has previously reported among high school student in this country (Ahmadi & Hasani, 2003; Ahmadi et al., 2004).

Alcohol use was far below the western countries as it is religiously and legally banned in this country. Also unlike the West, we found that opium abuse is more common than marijuana among students. This is consistent with our previous findings among volunteers who referred for abstinence therapy in this country and overdose cases (Afshari et al., 2004; Afshari & Shafaeyan, 2006). Students' attitudes toward main contributing factors to drug dependency including social, psychological and to a lesser extend familial categories were relatively different from previous studies (Ahmadi et al., 2004).

This study shows that medical use of SDs is rooted in KAP of young Iranians to different extends. As a result, the use of SDs is culturally and perhaps ethnically diverted in this society. This study implies that current belief in regard to racial differences in drug abuse (Hall et al., 2010) could be in part related to cultural and ethnic behaviors. The concept of culture and ethnic contribution in drug abuse could also explain the different changing prevalence and mode of heroin use among Blacks and Hispanics arrestees in comparison to White subjects which were found by Golub & Johnson (2005).

Students in this country are mainly Shia–Muslims. According to the current religious as well as governmental rules and regulations, all illicit drugs are banned. This also extends to alcoholic drinks. Cigarette smoking is, however, allowed. Religious and legal condemnation of opium use – the most common SDs in this setting – has been popularized in the past 40 years. Therapeutic effects of SDs are, therefore, not rooted in religious belief or lack of regulation. Epidemiologic determinants for SD dependencies should be considered as separate targets in developing preventive measures from epidemiologic variables related to first-time use.

Conclusion

Growing use of SDs is in part influenced by being marketed as medications. Worldwide increased rate of substance abuse needs to be addressed according to cultural differences.

Providing appropriate knowledge, challenging beliefs and positive role modeling concerning the effectiveness of therapeutic use of SDs are crucial in developing preventive programs in this population. Keep focusing on SDs induced adverse effect might be less effective than what it is currently perceived. In addition, ethnic minorities might need separate set of preventive package.

Limitation

Findings could be under presented, as we were studying a sensitive issue. The students who answered the close-ended questions were by far more than who answered open-ended questions.

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Declaration of interest

The authors report no conflict of interest. The authors alone are responsible for the content and writing of this article.

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