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Effects of Methamphetamine Withdrawal on the Psychological and Physiological Condition of Addicts

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Abstract: *The current study aims to analyze the withdrawal effects (i.e. psychological and physiological) of methamphetamine on addicts in the Khyber Pakhtunkhwa province of Pakistan. A sample of 180 methamphetamine users was interviewed through an interview schedule by snowball sampling technique. For testing the association between an independent variable (i.e. methamphetamine withdrawal) and dependent variables (i.e. psychological and physiological effects) a Chi-square test was administered. The result illustrates that most of them were youngsters up to 30 years of age, and males and single populations were more exposed to the drug. A significant association were found between methamphetamine/ice withdrawal and psychological effects and physiological effects i.e. fatigue, craving, aggression, depression, irritability, lethargy, poor concentration, sleepiness disorder, psychosis/ hallucinations, loss of pleasure, physical weakness, headaches body pain, watery eyes, runny nose, fatigue, lethargy, dry mouth, diarrhoea and body temperature. The study establishes that methamphetamine/ice is a toxic stimulant drug when a person uses it regularly he/she will face multiple psychological and physical effects when they want to withdraw. The study recommends that government should aware the mass about the toxicity of the drug through mass media and social media and arrange seminars in academic institutions and communities.*

Introduction

The drug methamphetamine is an extremely powerful toxic stimulant drug which is used very commonly across the globe. The use of this drug has many serious long-standing physical and psychological repercussions on the users (Jan, Ali, Niqab & Iqbal, 2022). It is a high-class drug which stimulates the Central Nervous System (CNS) and a social drug which is fit for those persons who want to keep him/her self-awake and may better be labeled as a "club drug" (Jan, Ali, Alam, Niqab, Shakoor, Begum & Khan, 2020; NIDA, 2009; Saul, 2005). It triggers neurotransmitters in the brain such as; serotonin, dopamine and noradrenaline. These are the chemicals that the use of this stimulating drug causes an individual to experience a feeling of euphoria, excitement and alertness (Jan, Alam & Khan, 2021). Methamphetamine is commonly known by a variety of different names depending on locality which includes; Hitler's drug, crystal meth, Shabu, Tik-Tik, Speed, Lolly, globes and Ice (Maxwell, 2006). However, it is popularly known as 'ice' in Pakistan.

Methamphetamine or ice can be swallowed, drunk, snorted, smoked and even injected in liquid form (Jan, Khan, Asad, & Khan, 2021; Maxwell, 2006). Nonetheless, the most common route of ice intake is smoking in Pakistan (Jan et

al., 2021). In order to smoke the ice, the users place the ice-white powder inside the bulb, from which the wires have been removed, heat it with a lighter, and draws out the smoke. After smoking, the initial urge lasts only a few minutes but is very pleasurable (Klasser & Epstein, 2005). As with other psychotropic drugs, repeated use of ice can lead to a state of tolerance, which needs to increase the doses of the drug to achieve the same level of gratification (Jan, et al., 2021).

The intensity of methamphetamine or ice can be gauged, if a user takes it more than once or twice, he/she is likely to become addicted, and once an individual becomes dependent on it, his body will stuck if he/she tries to quit using ice, they will face various physical and psychological problems (Jan, Alam & Khan, 2021; Khazaie et al., 2016; Klasser & Epstein, 2005). The administration of methamphetamine results in the release of neurotransmitters in the brain such as; norepinephrine, serotonin and dopamine which control the feelings of pleasure (Gabrovec, 2015). When addicts of ice stop taking drugs, they experience adverse withdrawal effects, where dopamine drops below natural levels and therefore lose feelings of pleasure and stress. The long-lasting use of methamphetamine reduces the amount of the receptors (i.e. dopamine level) in the brain, making it hard for addicts to enjoy the happy moments in routine life (Khazaie et al., 2016). Research has found that it becomes very difficult for methamphetamine addicts to control their violent behavior and anger, and accordingly, the frequency of weapons charges and assault is high (Khazaie et al., 2016; Sadock & Sadock, 2009). The main precursor substances which are most usually used in the manufacturing of methamphetamine are ephedrine and pseudoephedrine. Ephedrine which is the main precursor of methamphetamine is a derivative of the ephedra plant that mostly grows in Mongolia, China, Pakistan and India (Jan et al., 2020; Hussong, 2002). However, Boeri, Gibson & Harbry, (2009) reported that it is now also cultivated in Afghanistan in a big amounts. The Czech Republic, Germany, India and China are the major producer's countries of pseudoephedrine (U.S. Census Bureau, 2004). The potent drug methamphetamine can be produced and manufactured easily in a domestic kitchen from a number of household components, for instance, paint thinner, drain cleaner, and Freon and Lithium strips which are extracted from batteries (Jan et al., 2020; UNODC, 2011; Klasser & Epstein, 2005). However, what gives strength to methamphetamine is ephedrine or pseudoephedrine, which is commonly found in many over-the-counter (OTC) flu and cold medicines (Jan et al., 2020; Maxwell, 2006). The distinctiveness of the methamphetamine/ice drug is that all of its ingredients are legal and without any difficulty, it can be bought from hardware and pharmacy stores.

To make methamphetamine, various chemicals are required to produce it. Generally, a portion of these is unreservedly accessible on the business market, including items, for example, ammonia and lithium strips which are extracted from batteries (Parks & Jack, 2006). In the meantime, different parts, like the super dynamic fixing pseudoephedrine, accessible in over-the-counter influenza and cold prescriptions to be specific nasal congestion drug Sudafed. As a matter of fact, both of pseudoephedrine and ephedrine go through a manufactured interaction and prepare the unlawful stimulant drug i.e. methamphetamine (McKetin, McLaren and Kelly, 2005).

This drug has been added to the drug culture of Pakistan in the last decade. In its early days, it was not the drug of choice for the poor due to the high prices, as a gram of the new drug cost between 8,000-10,000 rupees ($50-70) in Pakistan. Later, due to local manufacturing and adulteration, the prices of the drug fell. Addiction to methamphetamine is a threat to the addicts themselves, their families and the country's development. Therefore, the present study aims to highlight the effects of methamphetamine withdrawal on the psychological and physiological problems faced by addicts.

Methodology

This is a cross-sectional research design which in two selected districts (i.e. Mardan and Peshawar) of Khyber Pakhtunkhwa province of Pakistan. Due to the social stigma associated with drug addiction and fear of law enforcement agencies, the population of ice users was not known; therefore, a pilot survey was started for ice addicts and found a total of 327 methamphetamine users through a snowball sampling technique and traced the unknown respondents through known respondents. By applying Yamane's (1967) formula by taking a 95% confidence level a total of 180 respondents were selected from 327 known populations. Additionally, the data was collected through a self-designed interview schedule. The reliability of the tool was checked by a Cronbach alpha test which stood at 0.78. Furthermore, for testing the association between independent (methamphetamine withdrawal) and dependent variables (psychological and physiological effects) a Chi-square test was applied (Kothari, 2004).

Results

Demographic characteristics of the respondents

Table 1 explains the demographic information of the respondents. The result indicates that (163/90.6%) were male and (17/09.4%) were female respondents. Additionally, most of the respondents were unmarried (i.e.98/54.4%). Moreover, most of the respondents (i.e. 93/51.7%) were belonging to the age range between 21 to 30 years.

Table 1: Demographic Profile of the Respondents

	N	%
Gender		
Male	163	90.6
Female	17	9.4
Marital status		
Single	98	54.4
Married	78	43.3
Divorced	04	2.2
Age (in years)		
<20	52	28.9
21-30	93	51.7
31-40	19	10.6
41-50	13	7.2
51-60	03	1.7

Association between Psychological Effects and Methamphetamine/ice Withdrawal

Table 2 demonstrates the association between psychological effects associated and methamphetamine/ice withdrawal. The result demonstrates that, a highly significant (p=0.000) association were found between craving towards drugs and aggression with the methamphetamine/ice withdrawal. Likewise, a significant association were found between depression (p=0.012), irritability (p=0.024), lethargy (p=0.023), poor concentration (0.001), sleepiness disorder (0.036), psychosis/ hallucinations (p=0.000) and loss of pleasure/ dysphoria (p=0.020) with methamphetamine/ice withdrawal.

Table 2: Association between Psychological Effects and Methamphetamine/ice Withdrawal

Psychological effects (Dependent variables)	Independent variable	Chi-square and P value
Craving	Ice withdrawal	32.167 (0.000)
Aggression	Ice withdrawal	45.046 (0.000)
Depression	Ice withdrawal	22.670 (0.012)
Irritability	Ice withdrawal	17.668 (0.024)
Lethargy	Ice withdrawal	20.750 (0.023)
Poor concentration	Ice withdrawal	29.534 (0.001)
Sleepiness disorder/ hypersomnia	Ice withdrawal	16.477 (0.036)
Psychosis/hallucinations	Ice withdrawal	39.842 (0.000)
Loss of pleasure/dysphoria	Ice withdrawal	21.178 (0.020)

Note: values in each cell specify Chi Square and parenthesis values indicate the significance (p=0.05) level of confidence.

Physiological Effects and Methamphetamine/Ice Withdrawal

Table 3 shows the association of physiological effects with methamphetamine/ice withdrawal. The result finds out that, there is a significant association between physical weakness (p=0.022), headaches (p=0.000), body pain (p=0.006), runny nose (p=0.000) and watery eyes (p=0.000) with methamphetamine/ice withdrawal. Conversely, a non-significant relationship was found between vomiting (p=0.541) with methamphetamine/ ice withdrawal. Likewise, a significant association was found between methamphetamine/ice withdrawal and fatigue (p=0.004), lethargy (p=0.049), (p=0.003), dry mouth (p=0.031), diarrhea (p=0.000) and body temperature (p=0.049).

Table 3: Physiological Effects and Methamphetamine/ice Withdrawal

Physiological effects (Dependent variables)	Independent variable	Chi-square and P value
Physical weakness	Ice withdrawal	20.929 (0.022)
Headaches	Ice withdrawal	31.872 (0.000)
Body pain	Ice withdrawal	21.433 (0.006)
Watery eyes	Ice withdrawal	34.005 (0.000)
Runny nose	Ice withdrawal	28.214 (0.002)
Vomiting	Ice withdrawal	8.902 (0.541)
Fatigue	Ice withdrawal	25.596 (0.004)
Lethargy	Ice withdrawal	18.376 (0.049)
Dry mouth	Ice withdrawal	19.842 (0.031)
Diarrhea	Ice withdrawal	40.093 (0.000)
Body temperature	Ice withdrawal	15.590 (0.049)

Note: values in each cell specify Chi Square and parenthesis values indicate the significance (p=0.05) level of confidence.

Discussion

Many studies have established that the regular use of ice has many adverse effects on the psychological and physiological condition of addicts (Jan et al., 2020; Courtney & Ray, 2014). The outcomes of the present study showed that males, young people (i.e. between 21 to 30 years) and single populations were more involved in ice drugs.

Psychological Effects and Methamphetamine Withdrawal

The current study examines the relationship between methamphetamine withdrawal and psychological effects. Respondents to the study described a variety of psychological problems they faced as a result of methamphetamine withdrawal. Analysis of the current research shows that once a person starts using methamphetamine; he/she may hover between "the blue deep and the devil". If it persists, he/she will have psychological effects, if he/she withdraws, he/she will have psychological problems.

The present research found a significant association between various psychological effects i.e. craving towards drugs, aggression, depression, irritability, lethargy, and poor concentration with withdrawal from methamphetamine or ice. These results are similar to other empirical studies conducted by Darke, Kaye, McKetin & Duflou, (2008) that withdrawal from methamphetamine leads to multiple psychological effects include; fatigue, craving towards drugs, aggression, depression, violent behavior, irritability, lethargy and poor concentration The harshness of these effects seem to be related to withdrawal from ice use and intensity (Jan et al., 2020; McKetin, Kelly & McLaren, 2006). Moreover, a significant association was also found between ice withdrawal and other psychological; effects include; sleepiness disorder, psychosis/ hallucinations, and loss of pleasure/ dysphoria. Some studies found that withdrawal from methamphetamine results in hallucinations, sleepiness disorder, and loss of pleasure/dysphoria (Brecht & Herbeck, 2014).

Physiological Effects and Methamphetamine Withdrawal

Many studies have found that the prolonged use of any powerful drugs takes more dependency on the drug. A study on methamphetamine found that regular and twice-daily users of methamphetamine were highly addicted to methamphetamine compared with infrequent users (Shetty, Mooney, Zigler, Belin, Murphy and Rawson, 2010). Most methamphetamine users mainly complain about physical side effects after high doses or long-term use (Jan et al., 2020).

As far as the physiological effects of ice withdrawal were concerned, the result shows that there is a strong association between the physiological effects and methamphetamine/ice withdrawal. The current study recorded multiple physiological effects like physical weakness, headaches and body pain, due to the withdrawal from methamphetamine/ice. Other studies also found that there are numerous adverse physical health outcomes linked with long-term use of methamphetamine and withdrawal, including weight loss, headaches, body pain, physical weakness and seizures (Jan et al., 2022; Darke et al., (2008). Additionally, a significant association was also found between methamphetamine/ice withdrawal and physical effects (i.e. dry mouth, runny nose, watery eyes, fatigue, lethargy, and diarrhoea. These results are also supported by McKetin, et al., (2005) that prolonged use and then withdrawal from methamphetamine/ice causes various physical problems including; sexual dysfunction, diarrhoea, runny nose, watery eyes, dry mouth, fatigue and lethargy. Other studies conducted on methamphetamine also claimed that those addicts who tried to withdraw have faced many physical problems such as; fatigue, lethargy, body pain, physical weakness and seizures, diarrhoea, runny nose,

watery eyes and dry mouth (Jan et al., 2021; Brecht & Herbeck, 2014).

Conclusions

This study was conducted to analyze the methamphetamine withdrawal effects (i.e. psychological and physiological) on the addicts. The present study found that methamphetamine or ice is a powerful drug and has the potential to capture the life of addicts and make them dependent on it. The current study concluded that once a person starts the constant use of ice, then he/she is stuck between "The blue deep sea and the devil". If continuous, he/she has psychological and physiological problems, or if withdraws, he/she has psychological and physiological problems. Methamphetamine or ice users face multiple psychological and physical problems with prolonged use and then withdrawal from it. The study recommends that national law enforcement agencies pay attention to combating drugs (both demand-side and supply-side), and spread awareness through religious scholars, mass media and social media. Families may play a role in drug use prevention and recovery of drug users.

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