



Abstract: *The present study aims to analyze the causative factors which are responsible for the use of a stimulant drug methamphetamine which is commonly known as 'ice'. For this purpose, data were collected from the two districts, i.e. Peshawar and Mardan, Khyber Pakhtunkhwa, Pakistan. A conceptual framework consists of Independent variable (ice use frequency) and dependent variables (risk factors). Data was collected through a structured questionnaire from a sample of 180 ice users by a snowball sampling technique. A Chi-square test was applied to examine the association between independent and dependent variables. The results reveal that a significant ($p=0.05$) association was found between various risk factors, i.e. easy availability, friends insistence, try out new experiences/curiosity, and use of ice for exam preparation with frequent use of ice. The study recommends that awareness may be created through educational, religious institution and media for the prevention and rehabilitation of ice addiction*

Key Words: Risk Factors, Methamphetamine/Ice, Frequent Use, Peshawar, Mardan

Introduction

Methamphetamine is a synthetic and powerful stimulant drug that triggers neurotransmitters in the brain such as; serotonin, dopamine and noradrenaline (Ministerial Action Group on Drugs, 2003; Saul, 2005). These are the chemicals that the use of this stimulating drug causes an individual to experience a feeling of euphoria, excitement and alertness (Drabsch, 2006). Methamphetamine is known by a wide variety of local/street names: 'Ice, Tik, Lolly, Speed, Crystals, Tuk-tuk, globes and Hitler's drug (Maxwell, 2006). As it is found in different forms, so methamphetamine is classified into different categories by Topp & Churchill (2002): Such categories include (1) Powder, (2) Base (a sticky substance/a damp, wet powder), and (3) crystal ice (translucent methamphetamine). Further, the powder or base from methamphetamine is less pure as compared to crystal ice form. Ice is the highest purity, and the users called it 'ice' or 'crystal meth' due to the shape of its transparent crystals (Drabsch, 2006). In Pakistan, mostly methamphetamine is available in crystal form; that's why it is commonly known as "ice" or "Crystal meth".

Methamphetamine is a potent drug that can be manufactured easily, even in a households' kitchen. To produce this drug, several household items are

required, such as; Freon, Drain Cleaner, Paint Thinner and Lithium strips (strips used in batteries) (Jan, Khan, Asad, Khan, 2021; Klasser & Epstein, 2005). Nevertheless, what gives the potency to this drug, is ephedrine and pseudoephedrine, and both of these are available in many over the counter cold medicines (Maxwell, 2006). The uniqueness of this drug is that all of the ingredients which are used in this drug are legal and can easily be acquired from hardware and pharmacy stores, and its recipes can be watched on the internet. When these easily accessible and legal ingredients are fused together, then they produce an illegal narcotic in the form of Methamphetamine (Jan et al., 2021).

Methamphetamine can be used in different ways. It can be swallowed, smoked, snorted, injected and even drank in a liquid form (Maxwell, 2006). However, the most common way of it is smoking. The user puts the ice white powder into the bulb where the wires are taken out of the bulb, heated with a lighter and then smoked the fumes. When ice is injected or smoked, it makes an initial flash that lasts only a few minutes but is extremely enjoyable (Klasser & Epstein, 2005). Like other psychoactive drugs, long-term use of ice can lead to tolerance, which requires an increase in the amount of ice to

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get the same level of satisfaction ([Sommers, Baskin, Baskin-Sommers, 2006](#)).

The drug user's quantity in the country is increased like the drug epidemic in Pakistan. The use of ice has been seriously affected the users economically and socially ([Jan et al., 2021](#)). Opium, cocaine, marijuana and marijuana have been commonly used, but ice, which is now considered one of the most harmful drugs in the world, is also becoming a common commodity used by drug users. Therefore, this study has been carried out to identify the risk factors which are responsible for the use of ice.

Literature Review

Globally, there is increasing acknowledgement that methamphetamine is an important threat that is becoming more apparent in the field of drug use. In recent ages, the use of methamphetamine has been increased dramatically among the people of East and South Asian countries ([UNODC, 2020](#)). According to "National Assessment Report 2013" there were about 6.5 million drug addicts in Pakistan. According to the report, in Khyber Pakhtunkhwa, drug abuse is the most common, with 11% of the total population use drugs, followed by Sindh with 6.5% drug addicts of the population. In Baluchistan, almost 5 percent population uses drugs, while in Punjab, the figure is 4.8 percent ([UNODC, 2013](#)).

Causes of Methamphetamine Use

Various reasons are considered responsible for the use of methamphetamine. However, the major cause associated with its use is the perception of its users about its positive effects. The following paras highlight the major reasons for methamphetamine.

Knowledge and Attitude towards Methamphetamine

Research studies found that usually drug users, particularly the youngster, have positive attitudes towards drugs before their use ([Sattah, Supawitkul, Dondero, Kilmarx, Young, Mastro, Chaikummao, Manopaiboon & Griensven, 2002](#)). In the context of methamphetamine also, [Russell, Dryden, Liang, Friesen, O'Gorman, Durec, Wild & Klases \(2008\)](#) found that pre addiction positive attitudes toward this drug is a major risk factor of its use. Positive attitudes about methamphetamine may be the outcome misperception about its benefits and peer influence. [Yen, Yang and Chong \(2006\)](#) also found that the reason behind the positive attitudes about this drug is lack of awareness about its ill effects. In addition, a significant relationship between the

positive attitudes towards methamphetamine and its negative consequences has also been found.

Curiosity

Personality passes through different psychological changes from time to time. In this regard, [Greydanus & Patel \(2005\)](#) argued that during the adolescence phase, the human is in search to identify him-/herself to others, experimenting with things as well as have curiosity. Due to a lack of coping skills and strategies, accompanied by curiosity, the adolescents may become easily convinced by external influence and are likely to engage in high-risk behavior ([Greydauns & Patel, 2005](#)). In the context of Methamphetamine, [Sherman & Latkin \(2002\)](#) found that explicit as well implicit pressures contribute towards its use. In addition, the exposure of adolescents to the immediate social environment also develops a curiosity about methamphetamine.

Psychological Well-being

Psychological well-being is considered the adequate condition of an individual in terms of good mental health, prosperity and happiness ([Visser & Routledge, 2007](#)). In most cases, the unpleasant events cause emotional distress and poor psychological well-being. For psychological well-being, people take drugs ([Clayton, 1992](#)). It is generally believed that substance use causes short term relaxation when an individual experience unhappy family relationships and work-related stressors. It indicates that drugs are used for relaxation at a time of poor psychological well-being. However, long term use of drugs hamper psychological well-being and cause different psychological issues in the form of depression. Methamphetamine is also used as a coping mechanism to reduce the intensity of daily stressors, interpersonal conflicts and emotional voids. Those who are exposed to psychological distress in the form of depression are more likely to use methamphetamine as a stimulating drug ([Yen et al., 2006](#)).

Easy Availability

Easy accessibility and availability of methamphetamine are considered a major factor for its high-level use ([McKetin et al., 2005](#)). Moreover, [Pluddemann et.al \(2007\)](#) also claimed that low cost and easy availability of methamphetamine is considered a major factor for its popularity among the youth. The cheaper rate of methamphetamine is considered the low prices of its ingredients and raw material. [McKetin et al., \(2005\)](#) found that in Australia found that the majority (i.e. 93%) of the methamphetamine users reported that

methamphetamine was very easy to obtain from the surrounding.

Peer Pressure

Research studies found that among youngsters, peer influence is a strong source of drug use. In some cases, the youngsters are pressured or influenced to imitate the norms of drug use (Yen et al., 2006). Russell et al. (2008) also found that peer influence seems to be the dominant factors responsible for the use of methamphetamine. The peer pressures may be implicit as well as explicit in the form of verbal persuasion. McKetin et al. (2005), claimed that the use of methamphetamine increase through regular interaction with friends who are its users. The study further found that as a result of direct social contact with such friends, the non-user of methamphetamine also become their users. Yen et al. (2006) also opined that as a result of social interaction and peer influence, the use of methamphetamine increased.

Familial Influences

On the one hand, families can provide defensive factors to reduce the risk of children continuing to use narcotics, drugs and alcohol; on the other hand, families can upsurge the risk factors that make the family members vulnerable to illicit drugs (Jan, Ali & Ali, 2016). Families with such a background who use illicit drugs may lead a chaotic life, which can endanger their children's support environment to grow up their abilities. When parents repeatedly take drugs at home, children may not be protected from risks, including easy access to the drugs available at home. In addition, drug-addicted parents spend little time with their children, especially spending time as a family unit for activities (Dawe & Dawe, 2007). The single most important impact on child drug use is the behavior and attitude of parents (Jan et al., 2016). Clayton (1992) stated that family is a structural function related to its existing role. Members of a family influence their children by teaching values and skills to make decisions and how to deal with drug use and abuse problem. Young people with divorced parents are more likely to take drugs. A study conducted by Jan et al. (2016) claimed that one of the risk factors is the communication gap between children and their parents, which can increase the danger of using illicit drugs. Consistent with this, the existence of parental role models has changed adolescents' awareness of drug use (Clayton, 1992).

Drug use in Academic Institutions

In academic institutions, the rejection or acceptance of students or teachers is very important for

students. According to Clayton (1992), rejection is then a significant risk factor leading to the possibility of drug abuse. Moreover, the pressure from academic institutions can affect the students' to initiate illicit drugs. Those students who have a problem in preparation for an exam or just to deal with the exam stress take support of methamphetamine during exams to improve their academic performance. Weak performance in school/college and peer influence cooperation is also a risk factor for the use of drugs (Chen, Strain, Alexandre, Alexander, Mojtabei & Martins, 2014).

Community and Environmental Factors

The majority of the youngsters and adults take drugs to get rid of the stress of daily life, such as unemployment, poverty, high divorce rates, contemporary anxiety and high crime rates (Greydanus & Patel, 2005). In addition, drug use, for instance, methamphetamine, is common among people with low income, low education, and those who involve in anti-social behavior. Chen et al. (2014) argued that environmental pressure, as well as social stigma, discrimination, hunger and poverty, are factors that accelerate the use of drugs. According to ecosystem theory, these factors are deeply ingrained in the external system because they do not directly affect individuals (Visser & Smith, 2007). The prevalence of methamphetamine is based on one of the risk factors at the community level and has a direct and indirect impact on other people (Sherman & Latkin, 2008).

Social Environment

According to the results of researchers Marshall, Wood, Shoveller, Buxton, Montaner and Kerr (2011), the social environment is a key significant factor in the triggering of methamphetamine.

This especially refers to the individual's social environment, including the family environment and social norms of the community. Ecosystem theory points out that different levels of the environment have an impact on the development of individuals. The social environment is located in the microsystem, exo-system and macrosystem, that is, the influence of families, friends and communities (Bronfenbrenner, 1992). The increase in the use of methamphetamine is due to the widespread availability of the drug (Jan et al., 2021). Chen et al. (2014) emphasized the importance of the social environment, that is, among other factors, general drug supply is a predictor of drug abuse. In addition, in another study by Sherman & Latkin, (2008) established that the supply of drugs in the society

and the norms related to drug use are an indicator of people's risky behavior.

Objectives of the Study

The present research was conducted with the following objectives

- To know about the socio-demographic profile of the ice users;
- To explore the risk factors associated with the use of ice in KP, Pakistan

Material and Methods

The nature of this study is cross-sectional. Since the most populated districts of Khyber Pakhtunkhwa are Peshawar and Mardan. Therefore, the data was collected from the stated districts. A total of 327 ice users were traced by the snowball sampling technique. Furthermore, a sample of 180 was selected by applying the [Yamane \(1967\)](#) formula to calculate sample sizes by taking a 95% confidence level through a simple random sampling technique. A

self-design tool was developed and verified by subject experts for the collection of data to examine the socio-demographic information and risk factors associated with ice use. A Cronbach alpha test was carried out for checking the reliability of the tool, which stood 0.78. In addition, a Chi-square test was applied for testing the association between independent, i.e. [risk factors] and dependent variables, i.e. [frequency of ice use] ([Tai, 1978](#)).

Results

Socio-Demographic Profile of the Respondents

The socio-demographic profile of the respondents shows that out of 180 respondents, (n=163, 90.6%) were male and (n=17, 9.4%) were female. In addition, the majority of the respondents were single i.e. (n=98, 54.4%). The age range of the respondents was >20 to 60 years, with a mean age of 26.28 years. Moreover, the major portion of the respondents having an age group between 21 to 30 years, i.e. (n=93, 51.7%). The majority of the respondents also had the primary level of education.

Table 1. Socio-Demographic Characteristics 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
Education		
Illiterate	19	10.6
Primary	42	23.3
Middle	30	16.7
SSC/O level	16	8.9
HSSC/A level	35	19.4
Graduate	38	21.1
Total	180	100.0

Association of Risk Factors with Ice use and its frequency

Table 2 shows the risk factors associated with ice and the frequency of ice use. The result shows a highly significant ($p=0.001$) ($p=0.000$) association between the frequency of ice use and its easy availability and friends insistence. Similarly, a

significant ($p=0.001$) ($p=0.011$) ($p=0.011$) was found between trying out new experiences or curiosity and exam preparation with the frequency of ice use. Nevertheless, a non-significant association was found between the frequency of ice use and other associated risk factors with ice, such as; taking of ice for sexual potency ($p=0.062$) and ice being a

cheap drug (p=0.168) and to be used for escape from tension or alienating (p=0.124).

Table 2. Association of Risk Factors with Ice use and its frequency

Risk factors (independent variables)	Dependent variable	Chi-square and P-value
You started ice due to easy availability	Frequency of ice use	23.164 (0.001)
Your friends insist you for ice use	Frequency of ice use	26.147 (0.000)
To try out new experiences or curiosity	Frequency of ice use	25.650 (0.001)
You take the ice for exam preparation	Frequency of ice use	18.593 (0.011)
You take the ice for sexual potency	Frequency of ice use	13.281 (0.062)
Because it was a cheap drug	Frequency of ice use	12.462 (0.168)
To escape you from tension or alienating	Frequency of ice use	4.180 (0.124)

Note: Figures in each cell specify Chi-Square value, and parenthesis values reveal the significance at 0.05 level of confidence.

Discussion

The purpose of this study was to analyze the risk factors associated with the use of Ice in Khyber Pakhtunkhwa, Pakistan. The result of the study reveals that the majority of the ice users were unmarried and male respondents. Over half of the respondents were in the age range between 21 to 30 years, and their qualification was below the middle level.

Furthermore, the study found that there are various responsible factors for the initiation of the use of ice. Most of the addicts of ice reported that they initiate the use of ice due to its easy availability. These results are in support of a study conducted in 2005 in Australia, concluded that one of the responsible factors for the ice use trend is the increased net methamphetamine supply to Australia, along with having enlarged the methamphetamine availability (McKetin, McLaren, Kelly, Hall & Hickman, 2005).

In addition, this study also found a significant association of peer influence with the use of ice. Through peer pressure, the individual starts using drugs and learns where to get drugs, what types to use and how to use them. Friends always provide important information and social support for initiation into drug use and create opportunities for using or experimenting with new types of drugs (Sattah, Supawitkul, Dondero, Kilmars, Young, Mastro, Chaikummao, Manopaiboon & Griensven, 2002; Hoffmann, Schumann, Fankhaenel, Thiel, Klement & Richter, 2016). The first experience of drug use usually depends on the individual's relationship with his/her friends. The initial experience of the new users of the drug generally does not cost because new users do not usually know the sources of supply and are therefore dependent on friends to obtain their drugs (Sexton,

Carlson, Leukefeld, & Booth, 2006). Other studies had also concluded that having a weak understanding about methamphetamine, provision and use of friends or as long as a positive attitude, and more collaborative interaction with friends are noteworthy risk factors for the use of Methamphetamine (Yen, Yang & Chong, 2006; Russell, Dryden, Liang, Friesen, O'Gorman, Durec, & Klassen, 2008).

Moreover, this study also found a significant association with curiosity/to try out new experience and take the ice for exam preparation with the use of ice. It is a common experience that the users are in search of such a drug to give him the same high which he gets in the initial days. For the sake of getting the same high, they increase the dose of the drug; if they didn't find the same high by increasing the dose, then they are curious to taste the other drugs. According to Sexton, et al. (2006), use gives the drug user a sort of feeling that can be figuratively termed the "orgasm" of drug use. This feeling occurs as a result of the interaction between the drug and the satisfaction and the enjoyment functions in the central nervous system. The drug user may, therefore, have a tendency to continue to use the same type of drug if he experienced the "orgasmic" feeling the first time he used drugs.

Conclusion

After analyzing the rigorous study, the researchers concluded that there is no single factor responsible for the use of ice. There are multiple factors responsible for ice use, such as; easily availability, peer influence, trying out new experience or curiosity and the use of ice by the students for exam preparation. Therefore, the present study recommends that government concerned law-enforcement agencies should take notice of the components of ice that are easily available in the

pharmacy and hardware stores. Awareness may be created through the educational and religious institution and, most importantly, by the media and

family members who may play a central and positive role in the prevention and rehabilitation of this menace.

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