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Perceived Risk of Methamphetamine among Chinese Methamphetamine Users

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Abstract

Background—Methamphetamine use has grown considerably in China in recent years. Information about perceptions of risk on methamphetamine is important to facilitate health promotion efforts.

Methods—Using both survey data and qualitative interview data, the authors evaluate the perceived risk of methamphetamine use among Chinese users using a mixed-methods approach. Through Respondent Driven Sampling, the authors recruited a sample of 303 methamphetamine users in Changsha, China.

Results—A majority (59.1%) perceive that infrequent methamphetamine use poses no risk to the user, while 11.2% perceive at least moderate risk for light use. A majority (56.7%) perceived at least moderate risk associated with regular methamphetamine use. Most (82.2%) also perceive methamphetamine to be easily obtainable. A path model indicates that perceived risk shapes intentions to use and expectations of future use, as does perceived availability. Qualitatively, while addiction was the most common risk discussed by users, they differed on whether they perceived the drug addictive. Other concerns raised by interviewees included impaired cognition, mental health problems, physical harm, and social dysfunction.

Discussion—While some users identify significant risks with methamphetamine, others do not perceive its use to be problematic. Collectively, these findings indicate that intervening upon

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Conflict of Interest Statement

Regarding the paper "Perceived Risk of Methamphetamine among Chinese Methamphetamine Users" recently submitted to the International Journal of Drug Policy, the authors – Brian C Kelly, Jichuan Wang, Tieqiao Liu, Xiaozhao Yosef Yang, Guanbai Zhang, and Wei Hao – have no actual or potential conflicts of interest to report. We have no financial, personal or other relationships with other people or organizations that could inappropriately influence, or be perceived to influence, this work.

perceptions of risk among Chinese methamphetamine users may be a means to influence intentions to use.

Keywords

perceived risk; methamphetamine; China; intentions

Introduction

China has witnessed a surge in the use of methamphetamine during the past decade. Methamphetamine, also in the form of tablets known as *magu*, is domestically produced in China, and the nation has become one of the world's largest methamphetamine markets in recent years (UNODC, 2013). Methamphetamine producing laboratories have increased in number throughout China. Consequently, the use of methamphetamine has increased remarkably during the past decade. Among government registered drug users in 2004, only 1.7% used amphetamines, but the prevalence grew to 11.1% by 2007 and continues to grow (Zhao, 2008). In some regions in China, methamphetamine use has quickly approached levels of heroin use (Huang, Zhang, & Liu, 2011). In this regard, methamphetamine has grown increasingly available in China during this time, yet it remains unclear how methamphetamine users perceive its risk and availability.

Beyond the growing production of methamphetamine, its use is a concern given the harms associated with methamphetamine use and its relatively recent introduction into Chinese drug markets. A range of harms related to the regular use of methamphetamine have been documented widely (Simon et al., 2000; Volkow et al, 2001a; 2001b), but the evaluation of risks by methamphetamine users in China has not been documented. Perceived risk is a key component in the decision making process related to a range of health behaviors (Janz & Becker, 1984). The perception of risks has been shown to be critical with regard to shaping drug use behaviors (Bachman et al., 1990). While some studies indicate that perceived risk is most critical for initiation into drug use (Bachman et al., 1990) or current abstinence (Kilmer et al., 2007), other studies indicate that perceived risk also plays a role in the behaviors of active drug users. Drug users often consider a range of risks with regard to whether and how they use drugs (Kelly, 2005; White et al., 2006). Studies have indicated that stimulant drugs, such as methamphetamine, often trigger risk perceptions of drug dependence among drug users, yet these are not the only risks that stimulant users consider (White et al., 2006). Risk perceptions are important since they may influence the frequency of drug use as well as shape considerations of abstinence (Carlson et al., 2004). Perceived risk is also critical with regard to initiating steps to reduce harm associated with drug use (Bailey et al., 2007; Kelly, 2007).

As methamphetamine is an emerging problem in China, few studies specific to methamphetamine users in China exist, which makes assessments of perceived risk and other factors important. A small study of methamphetamine users in China (n=74) by Li and colleagues (2008), one of the first to specifically report on methamphetamine users in China, indicated that some users experienced fights (22%) or suicidality (23%) after use, and a majority of users (69%) indicated they did not believe methamphetamine use could lead to

addiction. Yet, while these findings suggest the experience of harm and low addictive potential, no findings specific to risk perceptions related to methamphetamine use in China have been described in the literature. Despite the evidence related to the influence of risk perceptions on drug use noted above, it remains unclear how methamphetamine users in China understand these risks and whether they perceive any risk associated with their use of this drug. Such a survey of risk perceptions may be useful for those shaping health promotion efforts with this emerging population.

Current Study

In order to more fully assess the emergence of methamphetamine use in China, we evaluated how Chinese methamphetamine users perceive the level of risk associated with methamphetamine use using a mixed-methods approach. Specifically, we examined survey data with 303 methamphetamine users to ascertain how significant they perceive the risk associated with both limited use of methamphetamine and weekly use of methamphetamine as well as how available they perceive methamphetamine to be. We also assessed how perceived risk impacts other psychological factors – intentions to use and expectations of desire to use – that have been associated with future use. Additionally, we examine qualitative interview data from 40 methamphetamine users to evaluate their considerations of risk. These qualitative data lend texture and depth to the issue of perceived risk, and allow us to more fully illustrate *how users think* about and discuss risk.

Methods

We aim to assess how methamphetamine users in China perceive the risks associated with its use. We employed a mixed-methods research design that combined qualitative interviews, a structured survey, and Respondent Driven Sampling to produce a robust assessment of methamphetamine abuse and HIV risk in Changsha, China. Data from both qualitative interviews and the structured survey are used in this paper. IRB approval was received from both Purdue University and Central South University.

During the first several months, the research team engaged in social mapping. The purpose of a social mapping phase was to map out the social landscape of Changsha as it pertains to methamphetamine use. Since methamphetamine users in China are a hidden population, this process was conducted prior to recruitment to ensure a diverse range of individuals could subsequently be located. The research team began with informal interviews to identify locations methamphetamine users inhabit. During the ensuing fieldwork, the research team evaluated the characteristics of the various locations assessed, including their size, types of individuals present, the presence of drug markets, their viable operating hours, as well as the characteristics of the individuals present, such as age range. They conducted additional informal interviews in the field in order to gather salient data concerning the patterns and contexts of methamphetamine abuse. This social mapping process enabled the identification of locales from which to directly recruit methamphetamine users for the qualitative interview sample and “seeds” for the structured survey sample.

Sampling

Each individual recruited for a qualitative interview was recruited directly and independently by the research team at the outset of our study. To recruit our sample for the survey, we employed Respondent Driven Sampling (RDS; Heckathorn, 1997), an effective means to recruit drug users (Wang et al, 2005; 2007; Abdul-Quader et al., 2006). At the outset of the RDS process, we recruited 20 "seeds" in a fashion similar to our recruitment of subjects for qualitative interviews. Seeds formed the foundation of the sample enrolled into the study. Upon enrollment, each seed was provided with 3 "recruitment coupons" coded with numeric digits linkable to them in confidential fashion in addition to the incentive received for their own participation (150 Chinese Yuan). They were asked to encourage network members to be screened for enrollment. Each time a network member enrolled in the study and presented a numerically-coded coupon, the "seed" received an additional incentive (50 Chinese Yuan) for facilitating the network member to participate. A limitation of 3 recruitment cards reduces the likelihood of bias towards those with large networks (Heckathorn, 1997; Wang et al, 2005). Each recruit received the standard incentive for enrolling in the study. In addition, the enrolled recruit received three linkable recruitment coupons and was offered the same incentives as the "seed" to stimulate enrollment among network members. The process continued through successive waves to build momentum within the networks to foster participation. Analyses of sample composition indicated that the sample had reached convergence in that sample equilibrium was achieved.

Study Participants

We aimed to recruit a community sample of active methamphetamine users. Inclusion criteria for either the qualitative interview or the structured survey phases of the study, were: 1) self-reported methamphetamine use within the previous three months; 2) residence in the city of Changsha, Hunan; and 3) the capacity to volunteer to participate in the research. Subjects were excluded if they: 1) were currently in drug treatment; 2) were currently in prison/jail; 3) planned to move out of Changsha within 6 months; 4) had a significant psychotic disorder (severe enough to prevent capacity to consent), or 5) displayed impairment by drug use at time of interview.

Survey Measures

Demographic Factors—Respondents were asked their birth month and year; we used year of birth to assess age. They self-reported gender: female or male. They self-reported whether they were Han Chinese or a Chinese ethnic minority. They were asked to identify their sexual orientation – Straight, Gay/Lesbian, Bisexual, or Unsure. Employment was assessed: Full-time, Part-time, Full-time Student, or Unemployed. Relationship status was reported as married, domestic partner, steady boyfriend/girlfriend, single, divorced, or widowed. Parental status was assessed for whether or not participants had children.

Substance Use Measures—*Perceived risk* of methamphetamine was measured through an adaptation of items from the National Survey on Drug Use and Health (NSDUH). Specifically, subjects were asked "How much do people risk harming themselves physically and in other ways when they try methamphetamine once or twice?" and "How much do

people risk harming themselves physically and in other ways when they use methamphetamine once or twice a week?" Responses were situated on a four-point scale from 1-No Risk through 4-Great Risk. *Perceived availability* of methamphetamine was also measured through an adaptation of a measure from the NSDUH. Subjects were asked "How difficult or easy would it be for you to get some methamphetamine, if you wanted some?" Responses were given on a five-point scale ranging from 1-Probably Impossible to 5-Very Easy. *Intentions* to use were measured through an item that asked "In the next three months, I plan to use methamphetamine." *Expectations of desire* to use were measured through an item that asked "In the next three months, I will want to use methamphetamine." Responses for both of these items were given on a five-point scale ranging from 1-Definitely Not to 5-Definitely. *Frequency of methamphetamine use* was measured by the number of days on which subjects used methamphetamine during the past 3 months.

Data Analysis

Prevalence estimates were computed using SPSS. A path analysis model (a statistical method used to assess directional associations between factors; see Figure 1) was conducted to examine how perceived risk of methamphetamine use and perceived availability of methamphetamine predict the intention to methamphetamine use and expectation of desire to use methamphetamine, while accounting for the influence of demographics and frequency of methamphetamine use. Specifically, perceived availability and perceived risk were specified to directly affect the outcome measures (i.e., intentions to use and expectations of desire), controlling for covariates (e.g., demographics and frequency of methamphetamine use). In addition, the covariates were specified to directly affect, as well as indirectly through perceived availability and perceived risk, the two outcomes. We provide results from the model assessing the direct effect of each factor, the indirect effects of the covariates on the outcomes via perceived risk and via perceived availability, the total indirect effect (which accounts for both indirect pathways), and the total effect (which assesses the direct effect and total indirect effect). In the model, the residual terms of intentions to methamphetamine use and desire to use, as well as those between perceived risk and availability of methamphetamine, were specified correlated with each other. Demographic factors and frequency of methamphetamine use were tested to directly, as well as indirectly via perceived risk and availability, affect intention and desire. The robust estimator MLR with full information maximum likelihood (FIML) was applied for model estimation. MLR provides parameter estimates with standard errors and model fit statistics that are robust to data non-normality. The FIML approach uses every piece of information in the observed data for analysis with the assumption of missing at random (MAR). MAR is much less restrictive than the traditional assumption of missing completely at random (MCAR) (Finkbeiner, 1979). As the model has zero degrees of freedom, no model fit statistics/indices were available for goodness-of-fit test. Modeling was conducted using Mplus 7.1 (Muthen & Muthen, 1998–2012).

For qualitative data analysis, a thematic analysis was employed to generate descriptive understandings of how users perceive risk associated with methamphetamine use. Thematic analyses have proven an effective method for evaluating qualitative data (Miles & Huberman, 1994; Patton, 1990). Based upon transcript reviews, we developed a coding

scheme focused on themes related to how Chinese methamphetamine users understand their risk associated with its use. This coding scheme consisted of both free and tree codes employed by members of the research team. As is standard in thematic analysis, the themes identified illustrate the sentiments of groups of users, while leaving aside outlying individual assertions. These analyses were performed with NVIVO analysis software.

Results

Sample Characteristics

The survey sample consisted of 303 methamphetamine users with an approximate average age of 30. As is typical of patterns of substance use in China (Hao et al., 1995; Hao et al, 2004), a considerable majority of these users were male. Most were of the Han ethnic majority. Over one-third worked full-time with an additional quarter working part-time; the remainder were mostly unemployed. Over two-fifths reported being currently married and a similar proportion reported having children. A majority of the sample had less than a high school diploma. Their frequency of methamphetamine use ranged from infrequent to daily with a mean frequency of almost 24 days within the past 3 months.

Risk Perceptions

A majority of users (59.1%) perceive that methamphetamine use once or twice poses no risk to the user; only 11.2% perceive at least moderate risk for use once or twice. These perceptions shift, however, when considering regular use of methamphetamine. When considering the risk associated with using methamphetamine once or twice per week, only 19.8% of users indicated they perceived no risk. A majority (56.7%) perceived at least moderate risk associated with regular methamphetamine use.

Table 3 shows the statistics of the path model, with all estimates standardized. The R^2 in the sixth column indicates how much variance is explained by the independent variables. For intention to use, 17% of the variance is explained by the model. Path coefficients from perceived risk, perceived availability, and frequency of methamphetamine use are significant: perceived risk is inversely associated with intentions to use ($\beta=-0.22$, $p<0.01$), greater perceived availability is associated with greater intentions to use ($\beta=0.15$, $p<0.001$), and frequency of methamphetamine use is positively associated with intentions to use ($\beta=0.23$, $p<0.001$).

None of the direct paths from the demographic factors on intentions to use is significant, but as showed in the fourth and fifth column of table 3, the demographic factors as well as frequency of use have indirect impacts on intentions to use through perceived risk and perceived availability. Older age is associated with higher intentions to use via its influence on perceived risk and perceived availability ($\beta=0.05$, $p<0.05$). Although the total indirect effect of gender on intention to use is not significant, gender is negatively related to intentions to use through perceived risk ($\beta=-0.03$, $p<0.05$). Being married is negatively associated with intentions to use through perceived risk ($\beta=-0.08$, $p<0.01$). Having a regular job is also negatively associated with intentions to use through perceived risk ($\beta=-0.04$,

p<0.05). Frequency of use indirectly leads to intentions to use through perceived risk (β=0.04, p<0.05) and perceived availability (β=0.03, p<0.01).

The paths leading to expectations of desire have a similar pattern as those for intentions to use; indeed, expectations of desire and intent to use are themselves closely correlated (r=0.75, p<0.001). Perceived availability (β=0.16, p<0.001) and frequency of use (β=0.28, p<0.001) are positively associated with expectations of desire. On the other hand, higher perceived risk leads to reduced expectations of desire (β=−0.23, p<0.001). None of the demographic factors directly affect expectations of desire, but some of them indirectly affect expectations of desire through perceived risk: age (β=0.03, p<0.05), gender (β=−0.03, p<0.05), relationship status (β=−0.08, p<0.01), and employment status (β=−0.04, p<0.05) affect expectations of desire only through perceived risk. Higher frequency of use leads to expectations of desire through both perceived availability (β=0.04, p<0.01) and perceived risk (β=0.04, p<0.05).

The influence of demographic factors on perceived risk and perceived availability (β=0.04, p<0.05) is illustrated in the lower blocks of table 3. Perceived availability is only associated with frequency of methamphetamine use (β=0.22, p<0.001), and its R^2 is 0.07. Perceived risk, however, is better explained by demographic factors with a R^2 of 0.16. Older age (r=−0.14, p<0.05) and frequency of use (r=−0.16, p<0.01) are negatively associated with perceived risk. On the other hand, being female (r=0.14, p<0.05), married (r=0.35, p<0.001), and having full-time employment (r=0.18, p<0.01) are associated with higher level of perceived risk. Perceived risk and perceived availability of methamphetamine are negatively associated (r= −0.17, p<0.01).

Qualitative Profiles of Risk

Qualitative data provide a mixed picture of how methamphetamine users perceive risks associated with its use. Users were asked generally what they viewed as the risks of methamphetamine use, if any. Their responses illustrate a range of risk perceptions. When asked about risks associated with methamphetamine use, many raised the issue of addiction. Some expressed concern, such as “This is something that could make a person most depraved. You could become more psychologically dependent on *magu*, even compared to heroin. It’s not just my personal feeling; a lot of people who use heroin also have said so” (024). Others stated concerns they were already headed toward dependence, “I fear I’m close to becoming addicted to it” (018). Yet, while some identified addiction as a risk, other users were quick to respond that they perceived no risk of addiction - which was interesting since the question was stated generically and without mention of addiction. Some who fell into this group provided a narrative of personal control such as, “People won’t become dependent on magu. As long as they are able to control themselves, they won’t get addicted” (038). Others indicated they would not become addicted through reliance upon their social network. One man stated, “I don’t know if it’s addictive. My friends told me that people won’t become addicted to it” (021). Others stated that since methamphetamine was a new drug, it could not be addictive, “Well, I don’t think people could be really addicted to meth or any kind of new drugs. The new drugs are different from older drugs like heroin, which

directly affect people physically" (028). Overall, users expressed divergent concerns regarding the risk of addiction to methamphetamine.

While addiction was the most common theme, others also arose. A number of users expressed concerns about cognitive impairment such as, "My memory has become worse" (027) or "Using it does harm to one's brain" (031). Others considered mental health. One man stated that a concern for regular users was that "they might want to commit suicide and always be suspicious," (033) though he insisted his use was light enough to avoid such problems personally. The concern about paranoia was reiterated by others. One man described an experience that caused him to reduce his methamphetamine use, "I felt like I was being watched by someone I thought was a cop. Maybe this was just an illusion simply because I felt afraid of being caught by cops" (001). Thus, the impact of methamphetamine on one's cognition and mental health was expressed by users, but to a lesser degree than concerns for addiction.

Physical concerns regarding appetite, weight loss, immune impairment, and loss of strength were also raised. For example, one subject stated "I once stopped using it for a while since I was really thin and I was afraid my body might be injured. After I felt better and became fatter, I started to use it again" (027). Another indicated, "Sometimes I think my body is strong enough to overcome the negative effects of methamphetamine. However, I've suffered from a lot of indigestion and feeling faint and I get headaches" (030). Yet, others seemed indifferent to the its physical effects. As one subject stated in response to a question of whether there were risks to methamphetamine use, "Not really. Methamphetamine users just look thinner than most other people" (26).

Some users discussed the risk of methamphetamine use in terms of various effects on sexual health. For example, "A lot of people I know have used meth for sex. Those people might not pay much attention to hygiene" (013). Another stated, "I know a girl who used a lot of methamphetamine one day and had sex with five or six guys that night." (021). Others related concerns about criminal sex. When speaking about the risks of regular methamphetamine use, one subject said, "They might rape girls if they want to have sex with someone. Some women have even become hookers controlled by their bosses because of using too much methamphetamine" (010). Some men raised concern about erectile dysfunction as well. A young man stated, "I could get erect before I used it, but I can no longer do that after I use it. I'm in my twenties, but my body makes me a thirty-year old man" (027). Thus, a range of risks to sexual health were raised, albeit less frequently than concerns about addiction and mental health.

Some users also expressed concerns about social dysfunction as a result of methamphetamine use. Job loss was raised by some who were employed. For example, one man stated, "I don't want to lose my job especially since I might be promoted soon. Every time I have dinner with those bosses, I need to adjust myself. I don't want them to consider me as a drug user or a ghost. I don't want to lose my job because of using methamphetamine" (030). Others expressed concern about family shame, such as "I'm also worried that my family might find out that I've been using *magu*" (038). Some mentioned other forms of social disrepute. One man stated, "If people I know are aware that I use it,

they might not lend me money when I'm short of money and ask them for help. They'll be afraid that I might use this money for methamphetamine. But actually, I don't normally owe other people money." (040). Thus, some users expressed social dysfunction as a risk.

Discussion

As methamphetamine use grows within China, issues concerning education, prevention, and intervention will increasingly come to the fore. A large majority of Chinese methamphetamine users perceive the drug to be fairly or very easy to obtain. These perceptions cohere with the growing production of methamphetamine in China over the past decade, which may enable the diffusion of domestic methamphetamine markets. Availability has been identified as a key influence shaping both access and drug practices with other substances (Darke et al. 2002; Topp et al., 2003). While it may seem obvious that users perceive a drug of choice to be prevalent, other research indicates this is not always the case and is tied to drug market cycles (Topp et al., 2003). The extent to which methamphetamine is accessible by other segments of the population, particularly young people, merits further study.

Perceived risk has been a key factor in the growth of drug trends and in the initiation of new drug users (Bachman et al. 1990; 1998). As shown by our findings, perceptions of risk influence intentions to use and expectations that they will want to use among current methamphetamine users. As such, perceived risk is an important factor to consider with this emerging drug trend; it may potentially influence initiation by new users, escalation of use, considerations of cessation, as has been shown in other studies (Bachman et al., 1998; Carlson et al., 2004; Bailey et al., 2007). The inverse association between perceived risk and both intentions to use and expectations of desire indicates that methamphetamine users who perceive less risk from the drug may be less likely to discontinue their methamphetamine use. Further, those with lower perceived risk may be more likely to escalate their use, and escalation of methamphetamine use remains a concern as methamphetamine users have reported a number of barriers to drug treatment in China (Kelly et al., 2014). Additionally, while few users report significant risk for infrequent use, a slim majority report at least moderate risk for regular patterns of use. Thus, even among users, there is some recognition of risk, which may be leveraged in public health campaigns. Yet, the low perceived risk reported for occasional use may provide incentive for initiation among new users.

A number of factors influence perceptions of risk among Chinese methamphetamine users. As a whole, older users perceive lower risk in comparison with younger users. This may relate to certain types of risk perception among individuals who utilize illicit drugs later into life, yet contrasts with other studies indicating that increasing age is associated with increased perceived risk (e.g. Hall & Nelson, 1996). Women report greater perceptions of risk. This influence of gender coheres with other findings that indicate women are more likely to perceive risk from substance use (Spinger, Hawkins, & Loren, 1993), although some have suggested that this gender gap may be shrinking (Byrnes et al., 1999). Marital status also plays a role as those who are married report greater perceptions of risk, which coheres with theories on maturing out of drug use (Winick, 1962). Those with full employment also experience greater perceived risk, which may relate to the increased

concern with the social risks given their occupational position. Finally, frequency methamphetamine use correlates with these perceptions as those who report more frequent methamphetamine use also report lower perceived risk. This finding is perhaps unsurprising as those who perceive lower risk are likely to use in greater frequency.

With regard to the indirect pathways, demographic factors influence intentions to use and expectations of desire to use through perceptions of risk and perceived availability. Older age, frequency of use, female gender, full employment, and marriage were all indirectly related to intentions to use through perceived risk; older age and frequency of use positively and the other factors negatively. Similarly, older age, frequency of use, female gender, marital status, and full employment are all related to expectations of desire to use; again, older age and frequency of use positively and the other factors negatively. In this regard, perceived risk is a critical factor that explains demographic differences in intentions to use and expectations of desire to use, which have both been shown to be key influences of future use (Bachman et al., 1990; Carlson et al. 2004; Kilmer et al., 2007).

Our qualitative findings augment these results by describing the risks perceived by users. Addiction was most often raised by users when interviewed about the risks associated with methamphetamine use. Yet, subjects were divided in the ways they addressed this issue. While some indicated apprehension about whether methamphetamine was addictive or even expressed concern that they were becoming addicted, others asserted that they did not perceive methamphetamine as addictive, which coheres with work by Li and colleagues (2008). That so many users would raise the issue of addiction without prompting, suggests this might be an ongoing discussion among methamphetamine users themselves. Additionally, while users raised physical, psychological, and social risks, such issues were often expressed with uncertainty and these responses were not uniformly stated. This suggests that methamphetamine users acknowledge risk in a general sense yet remain unsure and may be inferring their perceptions of risk on the basis of other illicit substances. Examinations of the knowledge bases of methamphetamine users in China may be needed to assess the circulation of knowledge within user networks as well as how this knowledge coheres with risk perceptions.

Though concerns remain about how drug users access information about methamphetamine and related harm reduction methods, recent efforts by the Chinese government to support more progressive public health strategies, such as methadone maintenance programs and syringe exchange programs (see Smith, Bartlett, & Wang, 2012), promotes and facilitates pragmatic approaches for working with drug users. In this regard, Chinese public health institutions currently may be better situated to contend with the emerging methamphetamine problem and more able to directly address the problem while accounting for perceptions of risk among the users themselves.

Limitations

While these results describe how users perceive risks associated with methamphetamine use, we must consider some limitations. While methamphetamine abuse is a growing problem throughout China, our sample was derived from a capital city in central China and is not a nationally representative sample. In particular, it may not represent the experiences of rural

methamphetamine users. Additionally, the quantitative measures of perceived risk do not assess specific types of risk associated with methamphetamine. Yet, this is why the qualitative descriptions round out the profile of perceptions of methamphetamine's risks. Despite these limitations, this paper presents important information on how members of the growing population of methamphetamine users in China perceive risks associated with their drug practices and how this may shape their future use.

Conclusions

Assessments of risk perception are important since they influence key indicators of continued drug use, specifically intentions and expectations of desire to use. Our results suggest that many methamphetamine users in China express a diverse range of views on the risks associated with its use, and various factors influence their perceptions of risk. While some users identify significant risks accompanying methamphetamine use, others do not perceive its use to be problematic. Health promotion efforts may be aimed at harm reduction through further emphasis on perceptions of risk, which may engage users on their terms.

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Highlights

- Most users perceive methamphetamine to be easily obtainable in China.
- A majority perceived at least moderate risk associated with regular methamphetamine use.
- Perceived risk influences both intentions to use and expectations of desire to use.
- Perceived risk explains demographic differences in intentions to use.
- While addiction was a common risk discussed by users, they were divided in their perceptions.

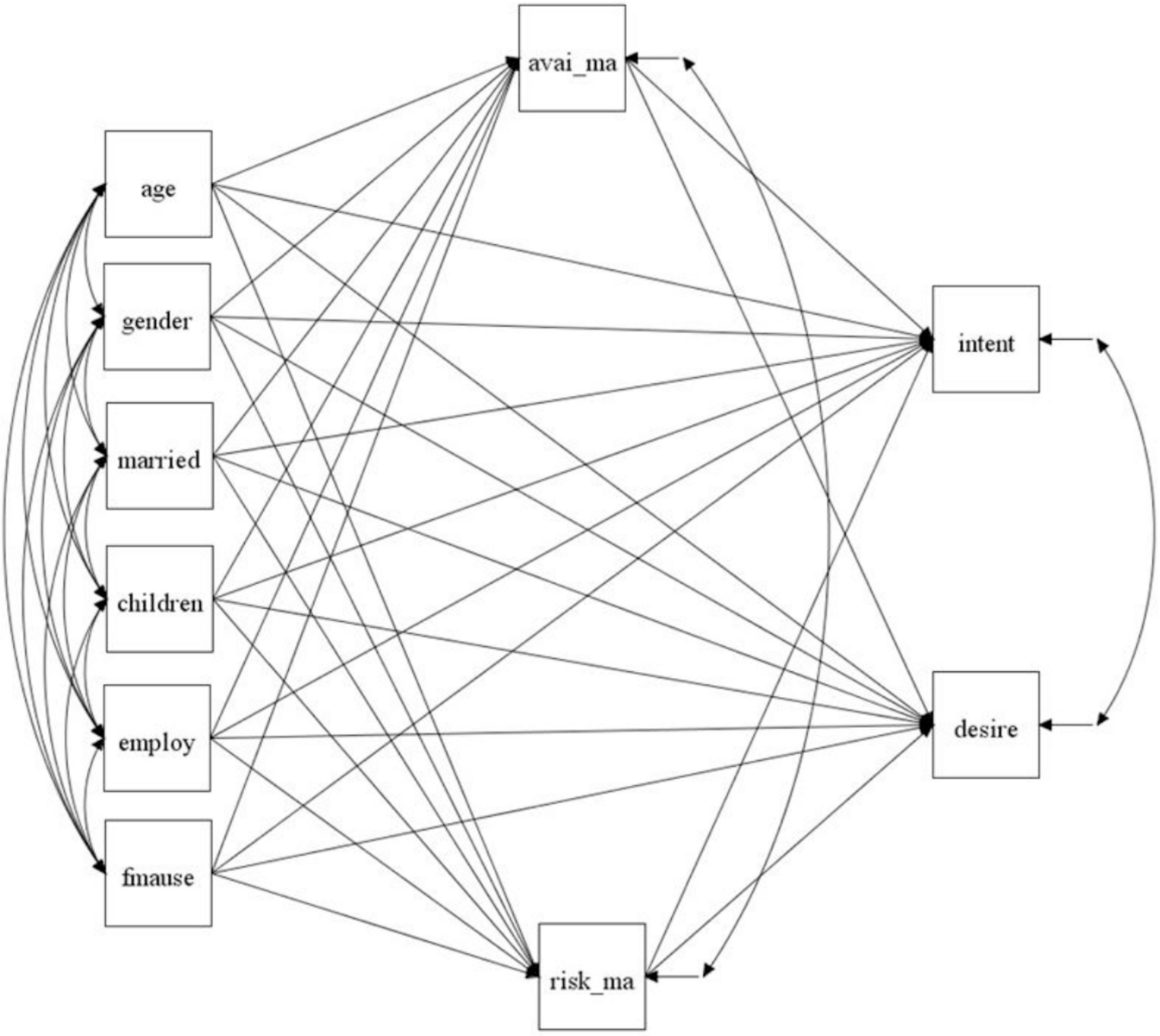

Figure 1.
Path Model on the Influence of Perceived Risk and Availability on Intentions and Expectations

Table 1

Sample Demographics

	Mean (SD)	Range
Age	29.9 (7.62)	17–48
Freq of MA Use	23.9 (28.9)	1–90
	% (*n*)	
Gender		
Male	87.1 (264)	
Female	12.9 (39)	
Ethnicity		
Han	98 (297)	
Ethnic Minority	2 (6)	
Employment Status		
Full-time	38.6 (117)	
Part-time	27.7 (84)	
Student	2.3 (7)	
Unemployed	31.4 (95)	
Relationship Status		
Married	42.6 (129)	
Domestic Partner	4.3 (13)	
Steady BF/GF	24.8 (75)	
Single	24.4 (74)	
Divorced	3.6 (11)	
Widowed	0.3 (1)	
Parental Status		
Children	44.2 (134)	
Without Children	55.8 (169)	

Table 2

Perceived Risk and Perceived Availability

Risk of MA Use once or twice	**% (*n*)**
No Risk	59.1 (179)
Slight Risk	29.7 (90)
Moderate Risk	5.9 (18)
Great Risk	5.3 (16)
Risk of MA Use once or twice per week	
No Risk	19.8 (60)
Slight Risk	23.4 (71)
Moderate Risk	12.5 (38)
Great Risk	44.2 (134)
Difficulty of Obtaining MA	
Probably Impossible	3.0 (9)
Very Difficult	2.6 (8)
Fairly Difficult	12.2 (37)
Fairly Easy	18.8 (57)
Very Easy	63.4 (192)

Table 3

Results of Path Analysis

	Direct Effect	Indirect Effect via Perceived availability/ Perceived risk	Total Indirect Effect	Total Effect	R^2
On Intentions to Use					0.17^{***}
Perceived Avail.	0.15^{***}				
Perceived Risk	-0.22^{**}				
Age	−0.004	0.02 / 0.03	0.05^{*}	0.04	
Gender	0.03	0.01 / -0.03^{*}	−0.02	0.01	
Relationship status	0.03	0.001 / -0.08^{**}	-0.08^{*}	−0.04	
Parental status	0.10	0.004 / −0.01	−0.01	0.09	
Employment status	0.05	0.001 / -0.04^{*}	-0.04^{*}	0.01	
Frequency of use	0.23^{***}	0.03^{**} / 0.04^{*}	0.07^{***}	0.30^{***}	
On Expectations of Desire					0.20^{***}
Perceived Avail.	0.16^{***}				
Perceived Risk	-0.23^{***}				
Age	−0.04	0.02 / 0.03^{*}	0.05^{*}	0.01	
Gender	0.01	0.01 / -0.03^{*}	−0.02	−0.01	
Relationship status	0.03	0.001 / -0.08^{**}	-0.08^{*}	−0.05	
Parental status	0.08	0.004 / −0.01	−0.01	0.07	
Employment status	0.06	0.001 / -0.04^{*}	-0.04^{*}	0.02	
Frequency of use	0.28^{***}	0.04^{**} / 0.04^{*}	0.07^{***}	0.35^{***}	
On Perceived Availability					0.07^{**}
Age	0.10				
Gender	0.07				
Relationship status	0.01				
Parental status	0.03				
Employment status	0.01				

	Direct Effect	Indirect Effect via Perceived availability/ Perceived risk	Total Indirect Effect	Total Effect	R^2
Frequency of use	0.22^{***}				
On Perceived Risk					0.16^{***}
Age	-0.14^{*}				
Gender	0.14^{*}				
Relationship status	0.35^{***}				
Parental status	0.06				
Employment status	0.18^{**}				
Frequency of use	-0.16^{**}				
Correlation of					
Perceived avail. And Perceived Risk	-0.17^{**}				
Intentions to use And Expectations of desire	0.75^{***}				

Note: two-tailed p-value for significance test:

*** p<.001,

** p<.01,

* p<.05