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Salvia Divinorum: Patterns of Use

CHRISTIE BOWLES



Christie L. Bowles is a senior majoring in Criminal Justice. Her research was made possible by the Adrian

Tinsley Summer Research Grant program during the summer of 2009. With guidance and support from her mentor, Dr. Dina Perrone, Christie was able to conduct qualitative research in her field of study and presented her findings at the annual meeting of the American Society of Criminology in Philadelphia last November. Christie hopes that through this research, a more effective and humanizing drug policy for salvia divinorum may be implemented. Christie plans to pursue a graduate education in Criminology, Law and Society next fall, with hopes of conducting further research and eventually becoming a faculty member for a college institution.

T*his study focuses on 13 salvia divinorum users, specifically seeking to understand the social, situational, and individual factors influencing their decision to use. Through semi-structured, in depth interviews, patterns such as the methods of use, settings of use, other frequently used drugs, and persistence or desistance of use are explored. Currently, there is limited research on salvia or the people who use this drug, and without this substantial research, the most effective way to address salvia use will remain unknown.*

Salvia divinorum is a naturally occurring hallucinogen, historically used by the native people of Oaxaca, Mexico as a spiritual, ceremonial, and healing tool (Ball, 2007; Delgarno, 2007). Today, it can be found in many parts of the world, used for many different purposes. Presently, salvia is sold online and in head shops across Massachusetts. Recently, the Massachusetts legislature has proposed the criminalization of salvia, as has Delaware, Florida, Louisiana, and Illinois, banning the possession and sale of salvia under state law (it is legal under federal law). However, without understanding the factors that shape the patterns of salvia use among these users, it is likely that this policy will fail the users.

The overall use patterns of the sample in this study show that criminalization will not be necessary. Salvia divinorum is nontoxic, non-addictive, and most users use this drug in safe places. Most users do not use frequently, and most do not use in public, around strangers, or even at large-scale parties. As a result, this drug should remain legal, with an 18-year old age restriction for the purchase of the drug.

METHODOLOGY

Qualitative methods were employed by conducting in-depth, semi-structured interviews pertaining to how, when, where, and with whom these individuals use the drug, and how those experiences show varying patterns of use. Prior to the commencement of the interview, each participant signed an informed consent form and received a \$20 Best Buy gift card for his/her time. The participants were interviewed face-to-face in a manner to solicit a conversation, and the interviews were digitally recorded. The use of probing and open-ended questions was also employed, allowing the participants to expand on their explanations and descriptions in greater detail. This method gives the data a humanistic quality and tells a story of their experiences.

SAMPLING

To gather participants, two sampling methods were used. Flyers were distributed around Massachusetts, mainly the Boston and Cambridge areas, particularly near college campuses and stores where bulletin boards were present. When necessary, a signed flyer-hanging permission form was obtained. Flyers were also hung in coffee shops, Laundromats, and on light-posts. The flyers for the study included information on the gift card incentive, the age and use requirement, the study's interest in salvia use experiences, and email contact information.

The use of the snowball sampling method was also employed. At the end of an interview, participants were asked if they could recommend another salvia user whom may also be interested in participating in the study. Given this method has been successful in obtaining participants for drug studies, I expected this method to provide potential participants. However, gathering interviews via flyer hanging was much more successful.

LIMITATIONS

This study has some limitations. The sample size for this study is relatively small. The ideal size of a study of this nature is 30

– 50 participants. Using convenience and purposive sampling is also a limitation. Since past studies discuss college students as primary users, flyers were hung around college campuses. By hanging flyers in certain areas and not others, this may have affected who saw the flier and therefore, who was in the sample. It is very likely that those salvia users who responded to the flier could be different from those users who did not. Moreover, fewer females than males responded to the flyer; perhaps because of the nature of the gift card incentive. Thus, this sample may not be representative of all salvia users.

The average age of this sample is 20.2 years with a range of 18 to 23 years (see Table 1). The participants in this study are comparable to those studies of hallucinogen users in general (e.g., Chilcoat and Shutz, 1996) and salvia users more specifically (Lange, Reed, Croff, Clapp, 2008). Most identify as white or Caucasian (70%), males (85%), attending college (92%). Most of the sample identify as heterosexual (85%). The majority of the sample's income includes a variety of part-time occupations. Of the total sample, 31% do not have an income and one participant is a fulltime (FT) employee. Of the total sample, one participant explained he/she had been arrested for a drug related offense in the past.

THE SAMPLE

Table 1: Sample Characteristics

Name	Age (yr)	Gender	Race	Sexual Orientation	Income*	Education
Daisy	19	Female	White	Gay	No income	In College
Eddie	18	Male	White	Hetero	Savings	In College
Edward	18	Male	Chinese	Hetero	No income	In College
Illinois	21	Male	White	Hetero	FT café manager	GED
Jeff	20	Male	White	Gay	Odd jobs	In College
Jess	23	Male	Mexican/White	Gay	Event photographer & camp employee	In College
Joe	21	Male	South Korean	Hetero	Research assistant	In College
Marcus	22	Male	Hispanic	Hetero	Co-op	In College
Marlena	21	Female	White	Hetero	No income	In College
MD	21	Male	White	Hetero	On campus & uncert. music therapy	In College
Ronin	20	Male	Greek American	Hetero	Research lab & retail	In College
Sebastian	19	Male	White	Hetero	No income	In College
Vincent	20	Male	White	Hetero	Internet Co. & Campus Job	In College
AVG	20.2					

PHARMACOLOGICAL, SITUATIONAL, & INDIVIDUAL FACTORS

The pharmacological, situational and individual factors are critical to understanding onset, persistence and desistance of use, as well as when and how they use the drug. Zinberg's (1984) well-known book, *Drug, Set, and Setting*, explains how the drug, set, and setting affect a user's drug experience and his/her persistence or desistance from use. It is apparent in these data that the drug, set, and setting heavily weigh on the type of experience the user may have, and how that may affect their future salvia use.

Drug

The pharmacological properties of the drug can affect the user's body and thoughts, which for salvia varies by the nature of the drug consumed (dried leaves, natural leaves, or an extract added to leaves), the method used (smoked or chewed), and the potency (extract level) of the drug. The pharmacological effects of salvia may also change if salvia is combined with other drugs, before, during, or after salvia ingestion. All of the participants in this study are poly-drug users; they engage in many types of licit and illicit drug use, either at one event or throughout their lives. Table 2 demonstrates the drugs this sample has used.

Salvia divinorum may also be the most potent naturally occurring hallucinogen among all hallucinogens, according to many medical experts (Cheyene, 2005). When smoked, the experience usually occurs within 30 seconds, and peaks for about 5-6 minutes. The effects of salvia generally last from 15 to 30 minutes and typically end within an hour of consumption. Users claim that the drug opens their minds and allows them to explore another side of reality.

Research suggests salvia is nontoxic and non-addictive, with no reports of deaths from overdose, and therefore, no treatment for use (Halpern, 2003). According to Halpern and Sewell (2005), salvia has had "no reported health risks" (p522). Likewise, the members of this sample of salvia users indicate neither cravings for nor withdrawal symptoms from salvia use. They also stress that they do not need to use salvia on a regular basis and appear to have a low potential for abuse and dependence (c.f., Baggot, Erowid and Erowid, 2004). This can be seen by the following quotes:

Researcher: Do you ever feel like you physically crave salvia at all?

Sebastian: No.

Researcher: Never?

Sebastian: No.

Table 2: Drug Use

	Alcohol	Marijuana	Mushrooms	LSD	Tobacco	Cocaine	Ecstasy/ MDMA
Daisy	X	X	X	X	X	X	
Eddie	X	X	X				
Edward	X	X	X	X	X		
Illinois	X	X	X	X	X	X	X
Jeff	X	X	X	X			
Jess	X	X	X			X	X
Joe	X	X					
Marcus	X	X					
Marlena	X			X			
MD	X	X			X		
Ronin	X	X	X	X	X	X	X
Sebastian	X	X	X	X	X	X	X
Vincent	X	X	X	X	X		
TOTAL	13	12	9	8	7	5	4

Eddie: But it's not something that I would, like, do all the time, it's not something that I would ever get hooked to...Like, it's just like, 'ahh,' it's just like a rush. I wouldn't do it daily; I wouldn't do it probably even weekly ever...

Salvia and Hallucinogens

Many participants in this sample have used illegal hallucinogens – most commonly, LSD (75%) and Psilocybin mushrooms (68.75%). The similarities in patterns of use between salvia and these hallucinogens lie in the age of onset and the temporary persistence of use. The onset of hallucinogen use is most likely to occur between late teens and early 20s, and does not persist as individuals age into their late 20s (Chilcoat and Schutz, 1996). In this study, the age of onset of salvia use was between 17 and 25 years old and most have only used the drug between 1 and 5 times. Salvia, like other hallucinogens, is seldom sought out, used infrequently, and presented to the user by an acquaintance or friend. Some of the users in this sample have already desisted from use.

Contrary to popular assumptions, there are major differences between salvinorin A (the active ingredient in salvia divinorum) and LSD (d-lysergic acid diethylamide) and psilocybin or Psilocin (the active ingredients in psychedelic mushrooms). The effects of salvinorin A are shorter in duration, salvia users do not develop a tolerance for the drug, and it acts on a different receptor in the brain than does psilocybin, psilocin, or LSD. Salvia users explain that the key difference between salvia and LSD or mushrooms is the overall experience. Every participant in the study expressed that his or her experiences did not last longer than 15 – 20 minutes. Since the salvia experience is so short, if a user experiences a negative “trip,” it will last only for 10 minutes instead of perhaps 6 – 12 hours as with psychedelic mushrooms or LSD. These responses describe this occurrence:

Eddie: It [salvia] went away probably less than 10 minutes; you're back on your feet. You feel a little weird but it's just crazy how fast it comes and goes.

Daisy: ...It's, it's usually, the situation [of use] is usually pretty random... but I, I wouldn't, I wouldn't like make a day of it ya know, “Oh, I'm gonna trip on salvia today so I'm gonna make sure I have nothing to do, ya know it's, it's almost like an in between thing ya know.

Edward: Yeah, you could do that [salvia] like on your lunch break.

According to Roth (2006), salvia works by activating the kappa-opioid receptor within the brain. Thus, salvia does not activate 5-HT2A like LSD and psilocybin or psilocin (Roth, 2006; Baggot et al., 2004; Cheyene, 2005). This is an important note since media sources tend to describe salvia as, “just like” LSD and mushrooms. A few participants have suggested that although salvia may appear like LSD and mushrooms, with hallucinating visual experiences, salvia is very different.

Edward: [With salvia] there's no greater discovery you can make, there's no, like, enlightenment or like there's no, like, break through or anything...Like with LSD...I feel like the reason people get so hooked on it is because, I mean one, it, it feels very, it like feels... both, physically and mentally good...unlike that of salvia. 'Cause that salvia is like clarity, “oh I realized I'm actually like, part of this new chair world.” But LSD is sort of like, greater humans' virtual understanding. I think that's the difference. Like sort of cognizant, like understanding.

Ronin: Like, with other hallucinogens like, umm, like acid and like psilocybin, like you're the same person. You're like, you still have control, if, if you close your eyes, like you can reset everything. But salvia, it kinda takes you. Like, it's one hit and it just takes you like right from the beginning. And with that it was just like, I was a completely different person.

Salvia and Marijuana

Aside from alcohol, marijuana is the most commonly used substance among this sample of salvia users (see Table 2). Similar to other studies of salvia (e.g., Khey, Miller, Griffin, 2008; Lange et al., 2008), most of these users report past year and current marijuana use. “*Salvia divinorum* use exists within a college student setting, yet may be concentrated among whites, males, students from more affluent backgrounds, and those that regularly use marijuana” (Khey et al., 2008). Fifteen of the sixteen participants (93.75%) have used marijuana and 68.7% use marijuana regularly. Wilcox, Wagner and Anthony (2007) indicate that marijuana users are 16 times more likely to be exposed to a hallucinogen and 12-13 times more likely to consume a hallucinogen. This is not surprising, given that users of drugs are often more likely to use drugs.

Many researchers contend that the relationship between marijuana use and salvia use is largely attributed to route of administration. Since both marijuana and salvia is best consumed using a water pipe or vaporizers, most marijuana users have the supplies necessary for salvia use. Moreover, most are accustomed to the process of smoking. In Mexico, many

young people have supplemented marijuana leaves for dried salvia leaves since dried salvia leaves have a milder effect than marijuana (Giroud, Felber, Augsburg, Horisberger, Rivier, and Mangin, 2000).

Set

Zinberg (1984) explains that the state of mind and personality of the user at the time of drug use also have an effect on the decision to use and the experience of the drug. The mood of the user at the time of consumption and the interests of the user, which varies from art, engineering, and music, may affect the experience sought and the reaction to the drug. Most importantly, users discuss that a positive frame of mind can enable a positive salvia experience. However, the state of mind of the user at the time of salvia consumption, if relaxed, happy or positive, and focused for entering a trip, may result in the most pleasurable experience for many users. This is evident with the following quotes:

Daisy: Uh, you, you kind of want to make sure you don't have anything leaning over your head or, or, anything too intense...but, umm, you just have to make sure that you're in like a, a good head space and a good, umm mood.

Marcus: I think with everything, if, if you go into it expecting to have a bad experience, you have a bad experience.

MD: I wouldn't do it if I was in a bad state of mind, but any other time.

Vincent: I think you should be like in a good, good mind frame. You should like, ya know, you should like want to do it, ya know. And, like not because you wanna get fucked up. You should wanna do it to have like a new experience.

Setting

Most participants prefer to use indoors in an environment with which they are familiar and comfortable. Using salvia indoors allows for fewer unexpected distractions and interactions with unknown individuals. Most describe the need to create the "the ideal setting," or the most desirable setting where they are likely to have a positive experience. A preference for a calm, quiet, peaceful place to use salvia is a commonly used and desired setting. This can be seen by a few participants' responses:

Researcher: So is that the environment you feel most comfortable with then?

Marcus: Yeah, again, I mean, if you're outside you're increasing your potential for exposure to people you're not familiar with or uncomfortable with, and if you're indoors you can kinda control the environment... It feels like a much safer place to be doing something like that...

Researcher: Umm, if you were to do it again, what would you think the ideal situation would be?

Joe: I mean like, a controlled room, basically without any stimuli would be probably the best...

Jeff: I would probably have to be, ya know, in a good mood, feeling relaxed...Like, I would want to do it in a familiar environment, like my room, with the lights very dim or something like that.

In these settings, the use of a sitter, or at least one other person who can prevent any adverse effects is also preferred. Most enjoy using salvia around close friends, and only a small number prefer to use alone for meditation and personal relaxation. Using salvia around acquaintances or friends allows for a more controlled setting where the user can feel comfortable and know that someone they trust is available to aid them if needed. This can be seen in Daisy's and MD's quotes:

Daisy: ...I was in a small group of people, my close friends because when you trip, you don't really want to be in a strange environment, um, with people you don't really know...

MD: If I was in a situation where there was salvia and there was like a lot of people, I probably would not do it. I'd rather do it with um either by myself or with just a few of my closer friends.

Most of the participants also declare that salvia is not a party drug or a drug that should be used around a lot of people, loud noise, or in an unfamiliar setting. Ronin and Sebastian explain that salvia is not a drug that is used for fun.

Ronin: ...Sometimes when you're in a bad mood, you just want an escape, and you do it – it's not a good idea. 'Cause it's not a party drug at all... Salvia is not something you do for fun.

Sebastian: At a house party, which is the worst idea to smoke that at, but, whatever.

Onset

Studies of hallucinogen use demonstrate that most users first try hallucinogens during college-aged years, most commonly around 19 years of age, and use is rare before 15 and after 25 years of age (e.g., Chilcoat and Schutz, 1996). This sample of salvia users resembles that pattern of use. Most used salvia for the first time around late teens (as early as 17) and early twenties (up to 25 years). The onset of salvia use is largely attributed to their peers, and most received the drug from a friend (cf., Khey et al., 2008). Peers have been a consistent robust predictor of drug use.

Researcher: How were you introduced to it?

Joe: Well, a buddy of mine...in, uh, Connecticut. And, he actually, he told us that he had like, some like, stuff that we should try. If, if, like, we like, we liked weed or ya know, if we liked to drink, and like he said, it would just like be really cool to like, try it out...

Eddie: My friend was, my friends before I had done it, like raved about how crazy it was. So that kinda made me wanna try it. Umm, but really, nothing else.

Persistence and Desistance

The drug experience, including the physical effects to the body, both during and after the high, the drug's effects on mood and perception, and the duration of the experience greatly influences both persistence and desistance. Depending on the user's perception of past salvia-induced experiences, some users will continue use, while others will desist. Halpern (2003) found that for some users, the intense and unpredictable effects of salvia are disturbing and frightening enough to discourage future salvia use. While for others, those effects are appealing. For example, when asked about the pleasurable effects of salvia, two user's state:

Eddie: I would do it again... it's like a rush, like you never really know what—well I kind of learn what to expect a little bit, but I'm still waiting to maybe go on like on of those crazy trips that some of my friends have had and say that their like unbelievable and like introspective at points. Like, so yeah, I would do it again, until, until like I have a bad experience. But, I would, I would say that about anything.

Marlena: It's just kind of a meditative thing and it allows you to do some, um, introspection even, and, um, it's just so weird that it's kinda fun to see what the effects will be. You never know what's gonna happen.

Because salvia is legal in the state in which this study took place, its availability contributed to onset and persistence of salvia use. Most participants explain that they never purchase salvia themselves, but instead receive the drug for free from someone they know. Most also use salvia when it becomes available. Because of this, many participants consider themselves opportunistic salvia users. If the drug is presented to them, free of charge and in the right situation, they will persist to use the drug once again.

Discontinuing salvia use, for most, is attributed to many factors including, the unexpected effects, life choices, a preference for other drugs, and an unfulfilling drug experience. Vincent and Sebastian express little to no interest in using salvia again, and other participants prefer to use other drugs over salvia. Illinois, Edward, Daisy, and Sebastian, explain:

Researcher: Can you describe a time when you preferred other drugs instead of salvia?

Illinois: Every time.

Edward: I think I've stopped salvia for good. You're just not, it's, I mean, it's not euphoric, it's not, it doesn't like, there's no elation.

Daisy: I would most definitely choose another drug over salvia if it were offered to me.

Sebastian: Uh, I would choose any drug over salvia, come on!

Moreover, many explain they would no longer use if the drug was not easily available.

Each of the following participants explain their future use of salvia if salvia became illegal in Massachusetts:

Marcus: Um, I don't know that I would have necessarily done it, had it been illegal already. Unless I was confronted with a very easy opportunity.

Jeff: Unless it were a question of, 'oh it's illegal, you can't buy it in a store anymore. Now you have to, ya know, call this person, and that person.' I wouldn't go through that trouble for salvia.

Eddie: Like, salvia is just, like, a weird ass thing. Like, if I had to go outta my way to find like a dealer to buy it, just t like, get that punch in the throat, I doubt I would.

DRUG POLICY IMPLICATIONS

Throughout this study, every participant expressed that even though some states have taken steps to ban salvia, the policy on salvia should remain legal, in each state and federally. Most thought an age restriction around 18 years old would be suitable. The quotes below demonstrate the opinions of these users:

Edward: I think...there should be like some sort of middle ground. Like 18 is, is pretty good...Umm, I don't think it poses like a threat to the general populous or whatever.

Jeff: I would probably say legal for over 18.

Marcus: On salvia, specifically, it doesn't need to be regulated. Or, I guess if you want to regulate it, make it like cigarettes or alcohol,...make it 18.

Marlena: They should probably uh, just keep it regulated [at] 18 plus...

Vincent: Yeah, 16 or like 17, maybe, maybe 18. By 18, I think everybody should have tried it, ya know? But um, yeah, maybe like 16 or 15, somethin' like that.

MD: I think that 18 is a good age.

This policy seems quite appropriate for a number of factors. The salvia users in this study admit to wanting to be responsible about use, including learning the facts on the effects of the drug, abstaining from driving while on salvia, and limiting mixing salvia with other drugs to avoid negative effects or experiences. All of the participants in this study strongly disagree that salvia is addictive. None of the participants indicated that they crave the drug on any one occasion. None of the participants used salvia on a regular basis, and most of the participants were uncertain if they would use salvia again.

Given its short duration and intense effects, salvia is not a party drug and I do not foresee it becoming such. Most users prefer to use in the privacy of their homes with close friends, refraining from use in public or around strangers. Very little harm to others could occur while on this drug. Most participants said they would choose to use almost any other drug over salvia. Thus, it appears that this drug is basically policing itself. This means if someone tries it, and does not like it, he/she desists from use; if they use it and like it, they aim for the most positive experience with the least possible negative consequences.

Many of the users indicate that criminalization, for the most part, would affect their use of salvia. However, all of the participants continue to use illegal drugs, and most would choose illegal drugs over salvia. Moreover, criminalizing salvia could have serious consequences on research investigating the medical uses of the drug, and could potentially create more problems for the users. Since salvia is not addictive, overdose is not possible, and users cannot perform daily tasks on the drug, then a criminal justice sanction and its collateral consequences (e.g., loss of financial aid, inability to obtain public housing, difficulty obtaining employment, and having a criminal record) are more harmful than is using the drug. In consideration of these factors surrounding the patterns of salvia use, for most, salvia is used safely and responsibly. Salvia should remain legally accessible to those aged 18 and older and regulated by the government.

DISCUSSION

Salvia divinorum is an emerging hallucinogen that has a similar use pattern to other hallucinogens. It is mostly used while in college among white males. Given that salvia works by activating the kappa-opioid receptor within the brain and has short duration and intense effects, it is not a party drug, and most users prefer to use in the privacy of their homes or in quiet spaces around close friends. Very little harm to others could occur while on this drug. A friend was most commonly cited as the reason for first use, but the individual's opinion on the effects of the drug is a contributing factor to use persistence and desistance.

Salvia users in the sample are poly-drug users in which they consume both legal and illegal drugs. After alcohol, marijuana is the most commonly used drug among this sample. While most of the sample of salvia users have used or are current users of marijuana, caution should be taken in calling marijuana a gateway drug to salvia. Given the low prevalence overall of salvia use [some studies indicate 4.4% (e.g., Khey et al., 2008)] compared to marijuana use (40%), it is clear that using marijuana does not lead to using salvia. Moreover, the methods of purchasing salvia and marijuana are quite different. Since marijuana is a federally controlled substance, users must purchase it from the black market (an underground dealer). Salvia, in contrast, can be purchased on the Internet or in local head-shops. If salvia were to become illegal, it is very likely that these users would come into contact with dealers of a variety of potentially more addicting substances. As such, salvia divinorum should remain legal with an age restriction of 18 years.

The war on drugs policy relies on criminalizing certain substances with the goal of preventing use. However, very few

studies investigate the recreational use of salvia, including those factors that influence use. Criminalizing salvia seeks to impact users' behaviors and recreational use with very little knowledge about the population of users this policy is targeting. To inform drug researchers and policy-makers about the factors associated with salvia use, this project contributes greatly to the understanding of the individuals who use salvia, how they use, when they use and why they use. Hearing the experiences and suggestions from these salvia users permits a more effective and humanizing drug policy for salvia divinorum.

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