

# Exploring Risk Prevention and Harm Reduction Behaviours among Snorted Cocaine Users



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## RESUMEN

**Introducción:** el consumo de cocaína presenta importantes retos para la salud pública. Un enfoque prometedor para abordar este problema de salud mundial es identificar conductas protectoras que puedan mitigar el consumo, prevenir los riesgos y minimizar las consecuencias negativas para las personas que consumen cocaína esnifada. **Objetivo:** este estudio pretende explorar los comportamientos de prevención de riesgos y reducción de daños entre las personas que consumen cocaína esnifada para contribuir al desarrollo y evaluación de intervenciones de reducción de daños en el futuro. **Método:** estudio cualitativo y exploratorio, basado en entrevistas a profundidad. Se identificaron estrategias conductuales de protección mediante entrevistas a profundidad semiestructuradas a 10 consumidores de cocaína procedentes de América Latina. **Resultados:** se identificó una serie de estrategias que las personas que consumen cocaína esnifada emplean para evitar el consumo de cocaína, prepararse para su consumo, evaluar la calidad de la sustancia, minimizar los riesgos durante el consumo (incluidos los relacionados con el policonsumo), controlar la dosis, proteger las vías de administración, mitigar los posibles efectos adversos, reducir los riesgos sexuales, evitar problemas legales y recuperarse. **Discusión y conclusiones:** este es el primer estudio que explora las estrategias conductuales de protección en consumidores experimentados de cocaína esnifada. Estos conocimientos sobre las prácticas de autorregulación y las estrategias de atención de los consumidores pueden servir como base para el desarrollo de futuras intervenciones.

**Palabras clave:** cocaína, conductas de prevención de riesgos, conductas de reducción de daños, estrategias conductuales protectoras.

## ABSTRACT

**Introduction:** cocaine use presents significant public health challenges. A promising approach to address this global health problem is to identify protective behaviors that can mitigate use, prevent risks, and minimize negative consequences for people who use snorted cocaine. **Objective:** this study aims to explore risk prevention and harm reduction behaviours among people who use snorted cocaine in order to contribute to the development and evaluation of harm reduction interventions in the future. **Method:** qualitative, exploratory study, based on in-depth interviews. Protective behavioral strategies were identified through in-depth semi-structured interviews from 10 cocaine users from Latin America. **Results:** we identified a range of strategies that people who use snorted cocaine employ in order to avoid cocaine use, prepare for its use, assess substance quality, minimize risks during consumption (including those related to poly-drug use), control dosage, protect routes of administration, mitigate potential adverse effects, reduce sexual risks, avoid legal problems, and recovering. **Discussion and conclusions:** this is the first study to explore protective behavioral strategies in experienced snorted cocaine users. Such insights into users' self-regulatory practices and care strategies can inform the development of future interventions.

**Keywords:** cocaine, risk prevention behaviors, harm reduction behaviors, protective behavioral strategies.

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## INTRODUCTION

According to the World Drug Report 2024 (United Nations Office on Drugs and Crime [UNODC], 2024) after a pause in the long-term upward trend during the pandemic, global cocaine use is at an all-time high. During 2022, 23 million people used cocaine, which represented 0.45% of the global population.

As described in the Report for the previous year (UNODC, 2023), the highest prevalence of cocaine use is observed in Oceania, North America, Western and Central Europe, and South America. In Latin America, the accessibility and relatively low cost of cocaine are associated with a higher prevalence of use. In addition, cocaine use is responsible for 7% of global use disorders, 12% of treatment demand and 11% of overdose deaths (UNODC, 2022).

In addition to the prevalence of drug use, cocaine is a substance with significant health risks thus associated issues are of concern (Fang & Yue, 2012). Between 2015 and 2016 there was a 52.4% increase in cocaine-related death rates compared to the previous year in the United States (Kariisa et al., 2019). These estimates indicate that more than one in five fatal drug overdoses involved cocaine, totaling 14,666 deaths in the country (Han et al., 2019). Globally, it is estimated that cocaine was involved in 4% of reported overdose deaths in 2021 (UNODC, 2022).

Besides overdose deaths, people who use snorted cocaine can experience substance use disorders, intoxication, or withdrawal, as well as other stimulant-induced mental illnesses such as psychotic, bipolar, depressive, anxiety, obsessive-compulsive, and sleep disorders, as well as sexual dysfunction (American Psychiatric Association [APA], 2013). Furthermore, cocaine consumption can lead to various negative consequences on physical health, including damage to the brain, heart, lungs, liver, and kidneys (Riezzo et al., 2012), as well as an increased risk of accidents and blood-borne or sexually transmitted infections (Rigoni et al., 2018).

Cocaine use may also exacerbate economic and social vulnerability, raising the risk of poverty or homelessness, encountering familial, academic, and occupational difficulties, involvement in accidents with third parties, neglecting or abandoning children, engaging in violent or criminal activities, and experiencing incarceration (Rigoni et al., 2018).

Many of these harmful experiences are directly linked to the route of administration (Riezzo et al., 2012). For example, injecting cocaine has been associated with an increased risk of skin lesions, in-

fections, and blood-borne infections (Grund et al., 2010). Similarly, smoking and injecting cocaine both elevate the risk of overdose (Ferri et al., 2004). On the other hand, snorting cocaine appears to pose a lower health risk when compared to other routes of administration (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2014); it is, however, potentially associated with mucosal injury leading to ischemic necrosis and subsequent septum perforation (Armstrong & Shikani, 1996; Cregler, 1989; Metzinger & Guerra, 2005; Seyer et al., 2002).

While certain treatment interventions for cocaine-related disorders have shown effectiveness, they fall short of meeting global needs (Organización de los Estados Americanos [OEA], 2019). Consequently, harm reduction interventions have achieved prominence, aiming to minimize the negative impacts associated with drug use without mandating abstinence (Harm Reduction International [HRI], 2020). These interventions have proven to be both viable and cost-effective alternatives (Bosque-Prous & Brugal, 2016; Hernández et al., 2017).

Harm reduction refers to a very broad approach to tackling drug use, which is useful to address any type of drug use and is based on two different objectives: risk prevention, which seeks to reduce the likelihood of negative consequences associated with drug use, and harm reduction, which refers to mitigating the harm that has already been caused by drug use (Newcombe, 1992).

At the individual level, more research is needed on the strategies that drug users employ in order to prevent risks and reduce harms associated with said consumption. Protective behavioral strategies (PBS) represent a promising area within harm reduction, and are defined as behaviors individuals engage in to limit potential consequences if they use substances (Pedersen et al., 2016). Although primarily studied in the context of alcohol and marijuana use, findings indicate an inverse relationship between PBS use and substance use, as well as fewer consumption-related consequences (Benton et al., 2004; Delva et al., 2004; D'Lima et al., 2012; LaBrie et al., 2011; Martens et al., 2004; 2007; 2011). Moreover, the application of PBS can help prevent the development of substance use disorder (Pedersen et al., 2016), and become a common intervention target, as they can mediate the effectiveness of the intervention (Barnett et al., 2007; Larimer et al., 2007).

## Present Study

Similar to users of other substances, individuals using cocaine have been found to employ strategies

to regulate their consumption and adopt self-care behaviors, utilizing their self-regulation skills to minimize the harm associated with their usage (Erickson & Cheung, 1999; Zuffa & Ronconi, 2022). So far no study has explored these strategies in a systematic and participatory way from the perspective of PBS, which would contribute to the construction and evaluation of harm reduction interventions for people who use snorted cocaine (PWUSC), as well as the construction of measurement instruments such as those available for alcohol and cannabis (Martens et al., 2005; Pedersen et al., 2016).

Therefore, this study aims to establish through in-depth interviews the risk prevention and harm reduction strategies used by PWUSC to prevent risks and reduce harm from their drug use.

## METHOD

### Design

This is a qualitative, exploratory study, based on in-depth interviews. We inquired about the PBS that PWUSC adopt to prevent the risks and reduce the harm caused by cocaine use.

### Participants

Participants were required to be adults, to be fluent in Spanish, to have snorted cocaine within the past year, and to provide consent. The study had 10 participants, 10 men and 2 women, between the ages of 22 and 25 with a mean age of 27.9 years and a standard deviation of 4.7; participants were from the following countries: Argentina (2), Colombia (3), Costa Rica (1), Mexico (2), Uruguay (1) and Venezuela (1).

Eight men and two women from Argentina, Colombia, Costa Rica, Mexico, Uruguay and Venezuela between the ages of 22 and 25, with a mean age of 27.9 years and a standard deviation of 4.7, participated in the study.

This research study was limited to people who use snorted cocaine, as we consider that the PBS they use differ greatly from those used by people who smoke or inject cocaine, mainly because they already use the non-smoking/injecting strategy, which has higher risks; but also because any other route of administration implies a very different repertoire of strategies. In addition, we consider that reaching people who smoke or inject cocaine requires important adaptations to the methodology and tools that have been used in this type of studies, which have mainly relied on online surveys and interviews.

### Data Collection Technique

This is an exploratory scoping study based on in-depth interviews. We chose this data collection technique primarily because we believe it is essential to have first-hand knowledge of the user experience, and we recognise the importance of users both generating their own strategies (Prince et al., 2013) and guiding their harm reduction interventions. The interview began with questions about the negative consequences participants perceived regarding their cocaine use. We then explored additional potential consequences they were aware of, even if they had not personally experienced them. To ensure participants had a comprehensive understanding, this section concluded with a brief psychoeducation on potential harm. After, we delved into the strategies participants employed to counteract the identified consequences. The interview concluded by asking participants about any additional strategies they believed might be useful or were aware that others used to mitigate negative consequences.

### Procedure

We began our exploration by reviewing the potential negative consequences associated with snorting cocaine. For this purpose, we used the system proposed by Nutt et al., (2007), as we considered it offers a comprehensive framework (see S1). After addressing the main negative consequences associated with cocaine use, we conducted a literature search to identify individual strategies used by PWUSC to mitigate potential adverse effects. Due to limited results from this search, we broadened our scope to include recommendations from civil society organizations for cocaine users. From this broader investigation, we compiled an initial list of potential risk prevention and harm reduction strategies (see S2).

We recognize the importance of allowing PWUSC to generate their own strategies, so we conducted ten individual interviews. Recruitment was conducted between November 2022 and May 2023 through social media platforms of organizations in Spanish-speaking countries in Latin America. Participants were invited to participate in an in-depth interview lasting approximately one hour. Ten in-depth interviews were conducted via Zoom, a virtual meeting platform.

### Data Analysis

The primary researcher conducted the transcription, coding, and analysis of the interviews. We identified numerous strategies employed by cocaine users to

prevent risks and reduce harm, which were then categorized into twelve main themes described in detail in the results. These results were derived from analyzing transcripts of the in-depth interviews. The analysis employed an inductive approach to identify common and recurring themes.

### Ethical Considerations

This research was approved by the ethics committee of the Universidad de los Andes, Bogotá, Colombia.

## RESULTS

A variety of strategies used by cocaine users to mitigate risks and minimize harm were identified through the interviews. These strategies were organized into 12 main themes.

### Cocaine Use Avoidance

These are the general avoidance strategies employed by users in situations where consumption may pose significant health risks. Examples include refraining from use when in a bad mood or poor health; during important events, like family gatherings or work meetings; when uncertain about the source of cocaine; when offered by strangers, or after consuming substantial amounts of cocaine or other substances. Additionally, users mentioned avoiding use when alone.

*"If I don't feel well (physically or emotionally), I try not to use... If you are not well and you use (cocaine), it makes you feel bad. In my case, I get paranoid; I start to think that people are looking at me and talking about me, and that's not right."  
"I do not use it alone."*

### Distraction Strategies

We categorize these as distraction strategies where individuals opt not to use cocaine and instead seek alternative activities to occupy themselves. Typically, individuals focus on their values and goals, utilizing these distraction techniques as a means to prevent consumption and avoid having cocaine readily accessible.

*"I don't keep cocaine in my house. If I have some left after a party, I always throw it away."  
"I try to distract myself with other things, make plans with my family or with friends who don't use, I don't go to parties (...) I like to play soccer. When I use (cocaine) I spend the whole weekend recovering, so when I don't want to use, I make plans to go play soccer."  
"I focus on work."*

### Getting Ready for Cocaine Use (Before)

These are characterized as preparatory strategies individuals employ before engaging in a cocaine use session. Among the primary tactics identified, individuals plan their consumption session by determining the circumstances and company for their use in advance. They also establish limits on the amount of substance and money they intend to allocate. Additionally, individuals ensure they eat and hydrate themselves beforehand, anticipating that the effects of cocaine may reduce feelings of hunger and thirst.

*"It is best to plan ahead, to know who to buy from, where you are going to be and with whom. It can go wrong if you leave these things to chance."  
"I'm not going to get thirsty, I know that, so I try to eat well and drink water before I get thirsty."*

### Substance Quality

These are strategies individuals employ in order to ensure the consumption of quality cocaine and avoid using adulterated or substituted substances. Participants noted the challenge of assessing substance quality and, therefore, prefer trusted sellers with whom they have had positive past experiences. Additionally, they verify the substance's appearance, smell, and taste.

*"It is very difficult to know unless you go to a drug checking service. What I do is I have someone I already trust, that has never gone wrong for me."  
"Well, if it looks strange, maybe because of the color or the shape, if it is too hard or if it looks like something else (...) what I do is I taste a little bit to see if it tastes weird."*

### Strategies during Cocaine Use

These are strategies individuals use during consumption to prevent negative consequences. Participants, especially women, emphasized the importance of consuming in places they perceive as safe, with trusted individuals. They also highlighted the significance of arranging safe transportation if they are under the influence of cocaine.

*"Always be with friends (...) who take care of you, who know what to do if something happens to you (...) who will not let you die."  
"Ordering a (cab) by app is safer than going out on the street and taking a cab."*

### Route of Administration

These are strategies individuals use to protect the route of administration. As previously explained, an exclusion criterion for participation in the study was

to use cocaine by injecting, as we consider that there are differences between the population using the different routes of administration and within these differences lies the level of risk they are willing to take. In this sense, we should mention that the main risk prevention strategy used by participants is not to use routes of administration with higher risks.

Participants mentioned that in order to safeguard the nasal mucosa, they finely chop the cocaine to break up large pieces, prepare it on clean surfaces, and use appropriate paraphernalia, which should also be clean. Additionally, they emphasize the importance of avoiding the use of instruments such as bills or keys, as they may harbor viruses and bacteria. After the session, participants mentioned that, if needed, they wash their nostrils with water or a saline solution, and if they experience bleeding, they use balms to moisturize the area and reduce pain.

*"The bills are the dirtiest (...) and keys too, although you can disinfect them."*

*"Try to make sure it is a clean place, otherwise grind it in the same bag."*

*"There are glass straws, but they are rather niche products."*

*"If I'm bleeding, which almost never happens, I put Vaseline on, that helps moisturize and it doesn't hurt so much to breathe."*

### Dosage

These are strategies individuals use to dose cocaine during a consumption session. Participants encountered difficulties in measuring the exact amount of cocaine they consumed, often relying on the measures offered by the seller (e.g., 1 gram). None of the participants reported using precise measures as recommended by civil society organizations, deeming it unnecessary. The primary method to limit the dose during a consumption session is to establish the amount to be consumed from the beginning. Moreover, individuals prefer to start with a small amount and, based on the effects, then decide whether to use more or not. They also emphasized the practice of spacing the intake, allowing a considerable amount of time to pass between one inhalation and the next.

*"You see how it hits you. If it is very strong, you stop there until it goes down. If it is too soft, you take a little bit more."*

### Mixtures or Poly Consumption

These are strategies individuals use to avoid intoxication due to poly-drug use. While the majority express the belief that it is best not to consume any other substance, they acknowledge that poly-drug use

with alcohol is very common and perceive it as not very risky, despite contradictory evidence. On the other hand, with other substances, especially stimulants, participants reported attempting to mitigate risks by reducing the doses of both drugs.

*"Almost always with alcohol, a beer (...) although I shouldn't."*

*"If I take (another stimulant) I try to reduce both a little because otherwise it hits very hard and it is very uncomfortable."*

### Possible Adverse Effects

These are strategies individuals use to counteract the most common adverse effects of cocaine, such as anxiety or panic attacks, jaw tension, and bruxism. Participants mentioned that it is crucial to learn to recognize when something is going wrong, such as if the heart rate rises too much, if there are signs of dehydration, or if they are experiencing discomfort in their mouth.

*"Keep calm, get out of the party if you can, and breathe."*

*"You have to have something in your mouth all the time. It is better, so you don't hurt yourself (...) at least eat a piece of gum."*

### Sexual Risks

These strategies refer to methods individuals employ to avoid sexual risks, including sexually transmitted diseases and pregnancies. Participants mainly emphasized the importance of carrying condoms, storing them in a suitable place, and using them during any sexual intercourse. Additionally, they highlighted the significance of using lubricants, especially during penetrative sex, to prevent bleeding injuries.

*"You can buy condoms along the way, but you should always use them."*

*"Lubricants also help to prevent injuries."*

### Legal Problems

These strategies refer to the methods individuals employ to prevent legal problems, particularly considering that, although the possession of a minimum dose of cocaine is permitted in some countries, it continues to be a prosecuted behavior. Participants reported that they store cocaine carefully, using containers that resemble other items. They emphasized, however, that the most important thing is to not offer cocaine to strangers and to avoid situations where the police are likely to be present or may arrive. Additionally, participants mentioned that they try to avoid other types of conflicts while under the influence of cocaine, such as fights or quarrels.



*"You hide it in a box of something else (...) in a box of mints, the least expected place that looks like anything but a drug stash."*

*"You have to avoid problems (...) if something happens, you have to stop, go somewhere else, or go home."*

### Strategies after Cocaine Use

These strategies refer to the methods individuals employ after consuming cocaine to recover. In general, participants shared that it is important to rest, stay hydrated, and eat. Additionally, if they were exposed to risky situations such as unprotected sex, some participants emphasized the importance of preventing the consequences resulting from their actions.

*"Rest. Try to sleep even if you are not sleepy, try to eat even if you are not hungry, and drink plenty of water."*

*"You recount the damages. If you were beaten, if you had unprotected sex, if you had a fight with someone (...) anything, you figure out how to solve it. You take pregnancy tests, the morning-after pill."*

## DISCUSSION AND CONCLUSIONS

The present study aimed to understand the risk prevention and harm reduction strategies implemented by snorted cocaine users in Spanish-speaking Latin American countries through qualitative exploration. We found that individuals employ a variety of strategies they believe can help mitigate the negative consequences associated with their use. Many of these strategies are commonly shared among users across different locations in the region. Although users report that the use of these strategies is related to lower negative consequences associated with consumption, a quantitative analysis is necessary to establish this relationship, as they do in other studies (Benton et al., 2004; Delva et al., 2004; D'Lima et al., 2012; LaBrie et al., 2011; Martens et al., 2004; 2007; 2011).

One of the main findings of our study is the awareness among cocaine users of the potential consequences of their consumption on both physical and mental health. Furthermore, we observed the intuitive ways in which they attempt to minimize these consequences. This is consistent with Erickson & Cheung, (1999) and Zuffa & Ronconi, (2022) and refutes the social imaginary that states that people who use drugs lose autonomy and the ability to make decisions for themselves (Cambra-Badii & Paragis, 2023), including decisions for the protection of their health.

Many of the strategies mentioned by users are supported by evidence. For instance, research suggests that using drugs alone increases the risk of adverse events such as overdose (Fernando et al., 2022). Engaging in alternative activities and healthy leisure, as well as making commitments to future plans, have been shown to be effective strategies in preventing substance use disorder (UNODC, 2017). Moreover, avoiding keeping drugs at home is considered a recovery rule, as it reduces the likelihood of relapse (Melemis, 2015). Studies on PBS in other substances also indicate that pre-establishing conditions for use can help reduce risks (Pedersen et al., 2016).

Some strategies, such as assessing the quality of the substance based on its smell, taste, or appearance, may still pose significant risks for drug users. Evidence indicates that certain highly dangerous substances which are commonly used as adulterants or substitutes, like fentanyl, are difficult to identify visually or through smell or taste (Fleiz Bautista, 2024). Thus, it is crucial to emphasize the importance of expanding substance testing services, which have been proven to be more effective in identifying adulterants (Maghsoudi et al., 2021). Additionally, ensuring a safe supply of substances is imperative (Klaire et al., 2022).

On the other hand, despite the fact that participants stated that the consumption of alcohol at the same time as cocaine does not imply a higher risk, the evidence clearly emphasizes the risk involved since this combination produces a psychoactive metabolite called cocaethylene that has similar properties to the original drug and may be more cardiotoxic (Pergolizzi et al., 2020); it is therefore key that interventions include information about the inherent risks when using two or more substances at the same time.

This study has several strengths. It fills a gap in the existing literature by being the first to explore the application of PBS and patterns of snorted cocaine use in Latin America. Additionally, the qualitative analysis included a participatory component, adding value to the formulation of future harm reduction interventions. In addition, as part of our ethical commitment to the participants, we were not only concerned with extracting information through the interviews, but within the interviews we created a space for brief education about the harms associated with consumption of which they were unaware. This study contributes to the growing evidence on the importance of including harm reduction and the use of protective strategies among the actions in the field of

substance use in order to reduce the consequences and harms derived from use.

### Limitations of the Study

There are also some limitations to consider. We recognize that the sample of participants was small, however, our aim was to be able to interview them in depth. The study highlights a lack of information about harm reduction and risk prevention behaviors that people who use cocaine engage in at the individual level. Despite conducting an extensive literature search, we had to rely on organizations working with users to identify the strategies they employed, so we consider it important to emphasize the need for more in-depth studies of many of these strategies. For example, although it seems logical that implementing administration route care strategies such as cleaning and moisturizing nasal passages could prevent future mucosal damage, we did not find studies confirming this. In addition, we recognize that the consumption of smokable cocaine represents a public health problem of major impact in Latin America (UNODC, 2022); however, the study only considered snorted cocaine users since we intended to explore the usefulness of this methodology and we consider that reaching smokable cocaine users requires adaptation. Future research should consider other forms of cocaine administration or could use this methodology to explore strategies used for other substances.

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### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

### AUTHORS CONTRIBUTION

CPG played lead role in investigation, methodology and writing of original draft and equal role in conceptualization and writing of review and editing. MBCL played a supporting role in investigation, methodology and review of original draft. MPGB played a supporting role in writing of the original draft. CG played lead role in supervision and equal role in conceptualization.

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**SUPPLEMENTARY INFORMATION**

The authors of this article provided two supplementary materials which are available online.

**Appendix S1**

<https://riiad.org/index.php/riiad/article/view/352/452>



**Appendix S2**

<https://riiad.org/index.php/riiad/article/view/352/453>

