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Pathways through MDMA use: A qualitative life story study

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Abstract

MDMA is a popular psychoactive drug that is highly associated with raves and clubbing culture. Consumers experience feelings of euphoria, joy, and confidence. Despite the considerable research on MDMA, non-problematic aspects of use remain under researched. The aim of this study was to understand MDMA use and pathways into and out of consumption. More specifically, the research examines the experience of ex-heavy MDMA users through their MDMA journeys.

This qualitative study employed an online questionnaire inspired by the Life Story Approach. Participants were recruited using ethnographic research methods and through related online forums. The inclusion criterion was individuals who self-identified as ex-heavy MDMA users, who have now cut down or completely stopped MDMA use. 104 former heavy MDMA users were surveyed. Data was analysed thematically from which six main categories were identified: Journey; Polydrug use; Role of drugs during consumption; Changes in drug use pattern; Changes in life; and Advice. A common positive tone runs through all the themes, and most reported negativity is due to drug use as a whole.

Data analysis highlighted Harm reduction and Function and pleasure enhancement as important overarching themes for participants. MDMA was generally used in specific settings to enhance an event or experience, such as music related events. But MDMA also enhanced intimacy, social bonding, meditation, and was used by some as a cognitive enhancer and therapeutic aid helping to think and feel differently. Many described positive psychological and social effects of use that remained after MDMA use, and often lasted permanently. Although a stop or a cut-down in MDMA use is often a natural process, it

could still be cut-down or stopped actively by making lifestyle changes such as distancing oneself from the associated scenes and people.

The results of this study bring a foundation of understanding MDMA use and pathways into and out of frequent use, which could particularly be useful in designing appropriate harm reduction programs and inform policy making. Likewise, present findings could help to address further aspects of MDMA use and non-problematic drug use in general.

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Chapter 1: Introduction

On November 3rd, 2015 Helen Pidd, the North England editor for The Guardian newspaper published an article about ex-clubbers (Pidd, 2015). The piece was about Dr Beate Peter (an academic from Manchester Metropolitan University), a mother and self-proclaimed lapsed clubber, who was having an exhibition to see what the ex-clubbers of Manchester were up to now. It explained how Manchester had become a hedonistic and clubbing location by the early 1990s, and how it would be interesting to see where these ex-clubbers are today. Some were now onto new exciting life adventures, and some had calmed down due to life circumstances, such as having children.

The article written by Helen Pidd, and the exhibition held by Dr Beate Peter resonated closely to the subject matter of the present study. As such, she was contacted and subsequently tweeted a description of this study to her 24.3K followers, inviting potential participants to partake in the study. This drew a great amount of attention to the study, both in terms of participants contributing to the study as well as the researcher continuously receiving emails from individuals showing interest in the study and wanting to know more and to read the results once the study was complete.

This example demonstrates the public's interest in MDMA and in gaining a greater understanding of MDMA use beyond the usual focus on dependency, and on pharmaceutical and problematic aspects of the drug. Non-problematic drug use remains an under-discussed topic, and non-dependent substance use as well as pleasure in drug use research could be significantly beneficial to an improved understanding of drug use.

This study explores this less researched field in order to gain a better understanding of non-problematic MDMA use.

1.1 Background and terminology

MDMA has many aspects. In the following pages, we will briefly go through the definition of the concepts used in this study.

What is MDMA: Methylenedioxymethmphetamine (MDMA), commonly known as Ecstasy (E), XTC, Mandy, or Molly, is a synthetic psychoactive drug that does not have plant or other biological origins, and is a controlled substance in most countries (Barceloux, 2012). MDMA's base is a clear oil that is soluble in water, and commonly comes in tablet form or in form of crystals (EMCDDA, 2015a). It was originally synthesized in 1914 and has since been popularized amongst youth and is widely regarded as a relatively safe drug (Aronson, 2015). It has properties of both amphetamines and hallucinogenic drugs, and it gives the consumers sensations of euphoria, joy, confidence, and well-being, as well as feeling alive and in tune with their surroundings (Schwartz & Miller, 1997). It is a recreational drug of choice consumed worldwide by adolescents and young adults, highly associated with rave parties (Capela, Bastos, & Carvalho, 2014). MDMA users are commonly polydrug users, meaning that they use a combination of drugs such as alcohol, cannabis, and other stimulants (Wu, Parrott, Ringwalt, Yang, & Blazer, 2009).

How is MDMA taken: MDMA is commonly consumed orally in the form of a pill, and can also be found in crystal or powder form, the latter of which is typically snorted, and in rare cases is injected or inhaled (EMCDDA, 2016). Ecstasy tablets typically have a logo, and

come in thousands of different colours and designs, varying in the amount of MDMA contained in each tablet (Barceloux, 2012). When consumed in the form of Ecstasy tablets, it is not uncommon to see the tablets adulterated with other drugs, affecting their overall quality (Aronson, 2015). Tablets contain on average 60-70 mg of MDMA, although some tablets analysed contain MDMA- or Ecstasy-like substances (such as MDEA or MDA), which are sold falsely as Ecstasy (Barceloux, 2012).

Medical and therapeutic uses of MDMA: In terms of its therapeutic use, in the 1980s, Alexander Shulgin, who is widely known as the father of Ecstasy, suggested the substance potentially had psychotherapeutic properties due to its positive, life-enhancing effects on mood (Aronson, 2015). Moreover, today, Ecstasy-assisted therapy is a topic of research. Ecstasy use has been linked to strategies of reducing negative mood states (White et al., 2006) and to coping with negative life circumstances (Moonzwe, Schensul, & Kostick, 2011). Moreover, the usefulness and psychotherapeutic aspects of MDMA have been highlighted in various ways, such as its ability to give a sense of well-being, which allows individuals to deal with repressed emotions, to enhance communication (Eisner, 1994), and to instil positive changes in attitude and feelings (Greer & Tolbert, 1998). In general, MDMA enhances sociability, endurance, sexual feelings, and makes individuals energetic. While it can cause mild perceptual disturbances (colours and sounds), it tends to give a general feeling of well-being, and to enhance emotional sensitivity (Barceloux, 2012).

MDMA and clubbing: The enhanced psychological, physiological, and social experiences (Panagopoulos & Ricciardelli, 2005), along with energetic and euphoric effects make it a perfect match for clubbers and ravers (Bogt & Engels, 2005). MDMA is particularly popular amongst partygoers (Krolikowski & Koyfman, 2014), and historically speaking,

has been closely linked to clubbing since the late 1980s as music, dancing, and Ecstasy use have evolved together (Davison & Parrott, 1997). The combination of clubbing, music, dance, and drugs has been linked to creating a sense of community (Harrison, 1998). Clubbing is highly correlated with MDMA use, as consumption of MDMA provides the energy that is demanded to go dancing for long hours (Parrott, Lock, Conner, Kissling, & Thome, 2008). Ninety to ninety-five percent of dancers/ravers report using MDMA in comparison with 5-15% of young people in general (Parrott, 2004).

Risk awareness: The popularity of the drug has also increased the level of educational campaigns and risk awareness. Risk awareness and harm reduction methods could be significantly useful for consumers of this drug. For example, a study conducted in Australia evidenced a reduction in DUI's amongst frequent Ecstasy users caused by an increase in risk awareness present in the educational campaigns (Matthews, Bruno, Dietze, Butler, & Burns, 2014).

Addiction: There are many definitions of addiction. Drug and alcohol addiction is identified by persistent drug-seeking behaviours regardless of the negative physiological, medical, or social consequences (Naim-Feil & Zangen, 2013). The development of addiction consists of a transition in the patterns of drug use, from casual to compulsive, accompanied by drug-induced changes in the brain and psychological functions (Robinson & Berridge, 2003). According to Koob & Volkow (2010), drug addiction involves impulsivity and compulsivity elements that produce a cycle consisting of three stages: 'bing/intoxication', 'withdrawal/negative affect', and 'preoccupation/anticipation/craving'. When referring to addiction, these are the definitions that will be used.

MDMA and Addiction: MDMA dependency is a debatable subject. However, MDMA use is typically recreational use (Panagopoulos & Ricciardelli, 2005) and MDMA users report many fewer symptoms of dependency compared to users of other drugs (Uosukainen, Tacke, & Winstock, 2015). Moreover, MDMA use is rarely reported as a reason for seeking treatment amongst drug users in general (EMCDDA, 2016). The vast majority of literature and research that exists on the drug has been focused on its neurotoxicity and long-term effects on the human body. However, still under-researched is an understanding of both the journey that users go through as heavy users and the process of quitting or cutting down use. There has been a significant lack of research that does not frame drug use, and particularly MDMA use, as a problem. Although people go through periods of relatively heavy MDMA use, the drug does not seem to be addictive in the conventional sense of the word because daily use over protracted periods is very rare (Murray, 2001). Nevertheless, users can experience tolerance to the drug and can also report feeling addicted or dependent in the sense of wanting or craving the drug and using it in large quantities at a time.

It is important to increase understanding of the experience of being a heavy MDMA user and subsequently stopping or cutting down MDMA use. An understanding of non-addictive drug use will be helpful for educating the public about the drug's harm reduction through various organizations and websites, as well as policy-making. This study will try to explore non-problematic drug use, in an attempt to help fill the mentioned gaps. In the next section we will discuss our research aim.

1.2 Research aim

The aim of this study was to understand MDMA use and pathways into it, and then out of it via quitting or cutting down consumption. This research was designed not only to focus on

people's drug use, but also to explore how MDMA fits into the context of people's everyday life. Although some participants mentioned addiction, mostly they were referring to it in terms of polydrug use. As such, this study focused on non-addictive drug use and ways to enhance these experiences or/and quit or lessen the use of MDMA. The study explored non-addictive drug use and why and how people stop or cut down the use of a non-addictive substance. The research objective was to examine the experience of former heavy MDMA users through their journey, from start of use to the process of quitting or cutting down. In this sense, the study was driven by the following research question:

- What role did MDMA play in the life of former heavy users, and why and how did people stop or cut down using MDMA?

To investigate this question, this qualitative study employed an online questionnaire inspired by the Life Story Approach, which is a narrative approach that focuses on making sense of human behaviour and experiences (McAdams, 2001; McAdams & Ochberg, 1988; McAdams, 2008). It was particularly important for this research to be able to look at individual stories in order to better understand the journey. Focusing on each story told us more about the subject and helped to explore the topic more deeply. Six open-ended questions were followed by some demographic questions. The open-ended questions asked the participants to tell a story about their MDMA use, their use of other drugs, their views of the role it played in their lives, how their drug use has changed, how they feel MDMA has changed them, and what advice they would give to someone who is looking to cut down or quit MDMA. The research was about the person's MDMA story, rather than their entire life story. Because of the semi-structured nature of the questions in online format, thematic analysis was used. This is an analysis method that allows the researcher to

organize the data in a minimal matter, and describe it in rich detail while going further into the interpretation of different aspects of the research topic (Boyatzis, 1998; Braun & Clarke, 2006).

Concerning ethical issues, the sensitivity of the subject of research was taken under consideration during recruitment and data collection, and the research was designed in such a way to safeguard the anonymity of participants, as fear of being exposed is a common issue in drug-related research.

1.3 Researcher's position

A researcher's personal history guides their professional development and interests. Many individuals that I came across during the time of the study asked about my own story and reasons for my interests in this subject, as the questions asked by this research are also questions about my own life.

I spent my youth in between Tehran, San Francisco, Paris, London, and later on moved to Hull. My ambivalent identity due to the extreme change in cultural settings at a young age made it difficult for me to achieve a sense of belonging, as I have continuously had to fit in in new places. This always meant choosing between learning the local youth culture and becoming a part of it, or being lonely.

One of my earliest memories concerning youth culture is of attending an underground party in San Francisco at the age of 17 and seeing a girl dancing on her own in front of the DJ booth, following the beat with her body while her eyes were closed, looking so content and at peace. At that moment, I realised that this culture is much more than fitting in and having

a good time; it is so much more complex and the factors involved could be both beneficial and harmful at the same time.

By the time I reached Hull, I was not as young anymore, and not familiar with the rave scenes of the UK at all. However, it did not take long to begin to get an understanding of the normalisation of drugs, especially amongst students by whom I found myself surrounded. I was nearly a decade older than some of them. Little did I know that I would be receiving regular updates of available 'goods' as a bonus of joining different student societies, as the following text message illustrates:

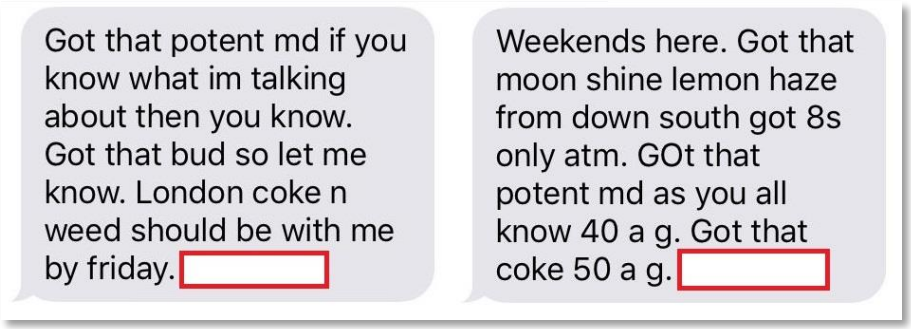


Figure 1. Example of drug-dealer's text message

In order to become familiar with the UK dance scene, I began attending a local Drum and Bass event, which is held once a month at a club close to the university. This is a highly anticipated event in Hull, with famous DJs coming from various parts of the country to perform. Students buy their tickets in advance and there is always a long line to get inside. Although the club is promoted as an event with zero-tolerance towards drug consumption, it is known amongst the youth as the most drug-tolerant event to attend. I followed my new, younger friends, watched them prepare for the night, participated in the event with them, and sometimes joined them in after parties. During my observations, I was able to understand how the night was often carefully constructed, with one person often being the

leader, checking up on others, and reminding others to stay hydrated and take bathroom and fresh air breaks regularly.

In the course of my research, I realized that I am not so up to date with the dance music scene, and did not quite understand the difference between acid techno and dub techno, and more importantly, garage, which I learned is a huge genre in my new country of residency. In order to get a better understanding of this musical variety, I interviewed my friend Alex, who is a passionate fan of electronic music and an involved member of the University's 'crystal clear' society (the electronic music society of the University of Hull, which holds frequent parties throughout the year). Alex provided invaluable insights, explaining various aspects of the dance music scene in the UK. As I asked countless questions to make sure I understood the different types of music, she said something that stuck with me. She said not to worry about the names of the genres so much because: 'you can usually tell which type of is music is being played by the way you dance, how much you use your hands and how you are moving your body.' There I was again, in awe, and hoping that I would be able to get a deeper understanding of this new youth culture that I had walked into.

Furthermore, during the course of this study, I realized that it was not just I who had been learning more about youth culture, when I received a pamphlet in my mailbox. This was a religious pamphlet, which spoke about the devil's intention to promote sinful pleasures and selling one's soul through taking drugs such as Ecstasy, which mirrors a common view of drugs and drug use as deviant acts:

Figure 2. Example of anti-drug brochure

I believe that I connected with the subject of my research, as it has always been in my nature to be curious about different youth cultures, and to explore and understand them deeper. Furthermore, throughout my experiences, I have witnessed the harm of strict laws and lack of correct information to individuals, and my personal concern with the well-being of youth has guided my academic study of this particular topic.

1.4 Structure of thesis

Chapter one has provided the introduction to the topic of MDMA use, with our research aim being to understand MDMA use and pathways into and out of it through quitting and

cutting down consumption. We discuss the current absence of a focus on non-problematic drug use, as well as the significance of this investigation. This is followed by the researcher's position regarding the research.

Chapter two reviews the literature regarding MDMA, club culture, and the social aspects of addiction in order to further explore the topics of MDMA and clubbing. The first section of the chapter examines the motives for using drugs in general and young people's drug use in particular. It reviews the literature on common trends in motives for drug use, as well as use of MDMA specifically, its characteristics, and motives for use. This is followed by literature on MDMA use and addiction, and normalisation of drugs. The second section of this chapter looks at clubbing culture and the experience of being a clubber. It looks at the links between MDMA and clubbing, while exploring the social and psychological aspects of being a clubber and MDMA user.

Chapter three presents the research design and methods used in the study. It begins by presenting the philosophical underpinnings of the study, namely social constructionism. It then progresses to the methods employed for the mixed-methods questionnaire design, which are inspired by Dan McAdam's Life Story Method, the data collection process through an online survey method, and analysis and results, which were conducted with thematic analysis through a six-stage analysis phase.

Chapter four presents the results of this study. The first part of the chapter consists of demographics and alcohol and drugs consumption patterns information in order to gain a better understanding of who the participants were. The second section consists of the main results, which are analysed through thematic analysis and presented in this chapter. The results are accompanied by the core ideas, themes, subthemes, and sub-subthemes that

emerged from the participant surveys, description of each one, as well as direct quotes from the participants. The six main core ideas include: journey, polydrug use, role of drugs during consumption period, changes in drug use pattern, changes, and advice.

Chapter five discusses the research question in light of the results of this study as well as their relationship to the previous literature. Results particularly reflect on positive applications of MDMA, harm reduction, and quitting/cutting down. It also includes theoretical and practical implications of the study and recommendations for future research. Limitations, including problems with data collection and problems resulting from the research design are then discussed, concluding with a few final words.

Chapter 2: Review of literature

2.1 Introduction

The first section of this chapter examines the motives for using drugs in general, as well as young people's drug use in particular. It looks at the current literature on common trends and motives behind using drugs, focusing particularly on the existing literature on MDMA, its characteristics, and motives for using. It progresses to reviewing MDMA use and addiction, and the normalisation of drugs within young people.

The second section discusses clubbing culture and the feelings embedded with the experience of being a clubber. It looks at what clubs are, who clubbers are, as well as exploring the main links between MDMA and clubbing.

2.2 Drugs in general

2.2.1 Overview of drug use

Adventure and curiosity are the most common characteristics that come to mind when thinking about young people trying new things and having new experiences. Experimenting with drugs, and understanding the motives for using them in the first place, are important topics to explore in the study of recreational to regular use of substances. Drug use is a widely spread phenomenon witnessed in many societies (Müller & Schumann, 2011). In the modern world, drug use is commonly associated with rebelliousness and rule-breaking, aspects that correlate largely with youth, and actions youth would be attracted to, as they are illegal (Parker, Aldridge, & Measham, 1998). Moreover, troublesome youth have long been linked to drugs, alcohol, and crime; however, these links are complex and portray

various meanings to individuals depending on factors such as time, place, and interactions (Carpenter, Glassner, Johnson, & Loughlin, 1987).

The huge increase in youth drug use from the 1970s onwards was of wide concern, leading developmental psychologists to try to identify the risk factors that make many young people prone to becoming drug users (Elliott, Huzinga, & Ageton, 1985; Hawkins, Catalano, & Miller, 1992; Jessor & Jessor, 1977). The positivist approach commonly identified disembodied variables, such as academic difficulties or bonding issues with family, as attributes frequently found in drug abusers (Cairns & Cairns, 1997). However, these are attributes that can be found in every generation, and from which limited information is gained through questionnaires, which these types of studies generally employ. Moreover, these studies are often negatively oriented and focus on the destructive aspects, such as addiction.

Psychologists also conceptualised of drug users as having developmental deficits and being atypical, such as the 'tripping' hippies of the 1970s (Aldridge, Measham, & Williams, 2011). Parker et al. (1998) point out that such findings suggest that most of the youth population are suffering from psycho-social disorders as most of the population have used drugs. Moreover, the sociological and anthropological tradition prior to the 1990s commonly explained drug use in terms of sub-cultural theories, frequently highlighting factors such as poverty as linked to drug use. Studies such as the one done by Carpenter et al. (1987), which linked young people's drug use and their involvement in crime, mentioned that all troublesome youths stated that their theft crimes were not related to acquiring money to buy drugs. Such findings suggest the complexity of drug use and discuss it as merely another activity in a young person's life, rather than something that has

taken over their lives (Carpenter et al., 1987). Normalisation and the transformations in drug use are complex social transformations, which should be fully explored and understood. Today's drug users are mainly conventional youth, who come from various backgrounds and have easier access to drugs (Parker et al., 1998). Many different motives for drug use have been identified throughout the years; however, it is important to understand the complexity of drugs in order to understand drug use. In order to draw a broader picture of contemporary drug use, the following section discusses the normalisation theory and the way it helps explain young people's attitudes towards drug and drug use patterns.

2.2.2 Normalisation of drug use

In countries where drugs are more prevalent, MDMA is no longer a niche drug used by a particular subculture, but rather a more mainstream drug used by people in a wide range of nightlife settings (EMCDDA, 2016). Some drugs have become a normal part of youth culture in many societies, especially the UK and the USA, regardless of one's attitude towards them (Taylor, 2000). Parker et al. (2002) state that drug use has become broadly accepted in youth culture due to broader societal changes and shifts in the journey to adulthood experienced by younger generations. Moreover, drugs are more accepted and normalised within society even by those who have not taken drugs (Measham, Aldridge, & Parker, 2000). Normalisation seeks to understand drug use as an everyday life activity, by stating that drug use has become socially acceptable amongst the youth (Parker et al., 1998).

In most countries, illicit drugs continue to be in high demand (EMCDDA, 2016). Drugs have become a major factor at most parties, festivals, and music events (Duff, 2005).

Normalisation of recreational drug use is a continuous debate in the subject of drugs and alcohol use. Researchers believe that the use of illicit drugs is increasingly becoming a normal feature in the lives of young people (Duff, 2003). However, such theories generate a substantial amount of controversy as they oppose and threaten current prevention policies regarding the use of illicit drug by young people (Shiner & Newburn, 1997). The normalisation theory argues that drug consumption should be viewed more carefully through a cultural context, and moreover, that more effective educational and harm reduction tactics should be used as strategies rather than focusing on prevention and punishment, as drugs have already been normalized (Duff, 2005).

The theory of the normalisation of drug use amidst youth was suggested by Parker et al. (1998), explaining that drugs, drug use, and drug users are all culturally embedded into the day to day lives of youth. In other words, regardless of being a drug user or not, most young people are exposed to these phenomena, and therefore tolerate them to some degree, regardless of personal beliefs. Moreover, normalisation includes accepting a wider variety of substances as choices for intoxication, such as the routine consumption of alcohol, nicotine, and cannabis, and occasional use of other substances (Hammersley, Marsland, & Reid, 2003), as well as class A drugs that are much more typically used compared to previous generations, often recreationally and without dependence (Parker et al., 1998).

The theoretical concept of normalisation is ultimately about cultural change. It originated in research with people with disabilities and learning difficulties, explaining how individuals would go from being labelled and stigmatised to becoming accepted within everyday life, due to changes in behavioural, cultural, and social perspectives (Parker et al., 1998). Today, drugs are perceived and tolerated differently than they were before. Parker,

Williams, and Aldridge (2002) also found that polydrug use, including mixing a variety of licit and illicit substances together, has become increasingly common amongst young people. Polydrug use is the use of two or more drugs during the same period of time, or at the same time, in order to counteract or enhance the effects (Boys, Marsden, & Strang, 2001). Moreover, some drugs are widely known and recommended to accompany each other (Wibberley & Price, 2000). Younger people see less of a distinct demarcation between legal drugs such as alcohol and tobacco, common medicines that can be psychoactive, and illegal drugs. This is to say nothing of synthetic drugs, often called legal highs, or new psychoactive substances that mimic the effects of other drugs.

It is crucial to move beyond conventional understandings of regular drug use and to examine cultural shifts and images of drugs in practice (Shildrick, 2002). Illicit drugs themselves have now become cultural items which help explain illicit behaviours (Fitzgerald, 2002). Today's recreational drug consumption is very much rooted in changes in particular and interrelated social functions, such as shifts in education, work, living situations, and marriage and family (Parker et al., 1998).

Contemporary youth culture promotes the normalisation of drugs, which does not deny the fact that drugs are still being used in troubling and non-responsible ways. However, different types of drug use exist. Drug use is no longer seen as an full-time occupation, but rather as just another activity that young people engage in along with everything else, and responsible drug use is on the rise as many indulge in recreational drug use as a part of their everyday life (Duff, 2005). Moreover, the rise in availability of drugs in social contexts is due to an increased complacency about alleged risks that are often rather minimal, allowing the youth to be experimental and creating a general shift in drug use attitude, one that is

contrary to what drug policy-makers advocate. Drugs are now frequently offered in social settings, and they are no longer a part of a deviant and hidden behaviour (Shildrick, 2002). Thus, widespread normalisation of drug use, and promotion of responsible drug use, works against current prevention and drug policies.

In summary, drugs have become a normal part of youth's lives and are perceived and tolerated more so than before. The idea of normalisation of drugs amongst youth (Parker et al., 1998) states that regardless of whether one is a drug user or a non-drug user, and of personal beliefs, most young people have been exposed to drugs, drug use, and drug users, and therefore there has been a rise in their tolerance to some degree.

2.2.3 Typology of drugs and drug users

Problematic issues caused by drugs are undeniable. However, lack of understanding and the complexity of drugs and motives for using them has caused the war on drugs and government policies to be designed in a way that does not necessarily help the situation (Aldridge et al., 2011). Moreover, most existing research on drug use is focused on drug dependency rather than how drug use happens and how it could be prevented, as most people who use drugs are actually not addicted (Hammersley, 2014). Policies are based on wrong concepts and common misunderstandings of young people's drug use, such as assuming that drug users are somehow defective, or haven't been brought up right, or have an inherently bad character, or are weak (Parker et al., 1998). In contrast, contemporary drug users in the UK come from all different types of backgrounds and cannot all be categorized as criminals or weak (Parker et al., 1998). As young people are generally the critical concern for prevention and treatment interventions in the UK (Cabinet Office, 2000), in order to build prevention and treatment programs it is vital to have a deep

understanding of the role that drugs play in the lives of young people, and their motives for using them. Moreover, according to Jessor & Jessor (1977), the most important factors related to personal control of problematic behaviour amongst youth are their actual behaviours, motivational urges, and personal beliefs.

It is important to note that drug users are not a homogeneous group; there are many different types of drug users and drug addicts with various motives for their consumption, each individual having different psychological needs (Cohen, 1986). Cohen (1986) surveyed 520 drug addicts and his analysis revealed nine different typologies of drug addicts, including 'professional criminal addict', inadequately socialised addict', and the 'emotionally sick addict'. Furthermore, he stated that different types of addicts need different types of treatments; for example, the 'professional criminal addict' requires a treatment that helps with value clarification, and the 'emotionally sick addict' needs reconstructive psychotherapy in order to achieve emotional stability. It could be argued that typologies are not ideal; however, such typologies support the concept that drug users possess different characteristics. Furthermore, Nail, Gunderson, & Kolb (1974) suggest that motives for drug use amongst light and heavy drug users could generally be characterized into two most common types: hedonistic and therapeutic. Based on 997 individuals at a rehabilitation centre, who identified as both light and heavy drug users, the authors concluded that the use of hallucinogens and cocaine is mostly linked to hedonistic motives, such as experiencing heightened sentience and psychedelic experiences (in hallucinogen users), and heightened sexual pleasure (in cocaine users). In contrast, they stated that therapeutic motives, such as improving functioning and relieving depression and anxiety, are almost exclusively linked to amphetamines, barbiturates, and opiates. Different motives exist for the choice of different substances, such as the fact that generally users of

amphetamines, MDMA, or cocaine choose these substances in order to experience an increase in nervous system arousal, and cannabis and alcohol use is chosen for a sedative effect, to experience relaxation and social belonging (Boys et al., 2001).

Substance use functions differ widely by types of drug and users, and different drugs are used for different purposes. Recreational, instrumental, mood management and self-medication, and social motives are common reasons for non-addictive drug use, motives that commonly overlap with each other. Furthermore, although licit drugs are frequently separated from illicit drugs by educators, politicians, and practitioners, researchers should avoid separating them because drugs and alcohol are often used together in youth culture (Boys et al., 2001).

Various terms have been coined to explain and present a clearer understanding of motives for drug use. For example, 'instrumental drug use' is a term used to link drug use to specific reasons, such as the use of amphetamines to increase levels of concentration and perform tasks such as overnight driving, or as a weight loss aid, as they have the characteristic of curbing the appetite (Goudie et al., 2011). Moreover, Christian, Müller and Schumann (2011) suggest that the altered state of mind caused by psychoactive drugs allows individuals to pursue survival and reproduction goals more effectively, stating that drugs can be used as 'instruments', something that aids one in achieving goals that would be impossible or difficult to achieve otherwise. Sadava (1975) suggested another term, 'function', to explain the purpose for which a certain drug is employed; functions are powerful tools to understand how personality and environment impact drug use patterns and to predict future consumption. Boys et al. (2001) used functional profiles to find the most popular functions for psychoactive drug use in polydrug users in the UK, and it was

found that the most five popular functions for using Ecstasy were: to keep going, to enrich activities, to feel euphoria, to stay alert and awake, and to get intoxicated. They also highlighted the importance of recognising functions, which play a vital role in strengthening education and prevention strategies.

One self-administered online survey (Teter, McCabe, Cranford, Boyd, & Guthrie, 2010) looked at individuals' motives for using drugs and alcohol. Individuals reported the most common motives to be: to help with concentration, to increase alertness, and to get a high (with no gender differences in motives). Another study done by Boys et al. (2001), which aimed to understand reasons for using psychoactive substances, identified the most popular functions for using as: relaxing, becoming intoxicated, staying awake throughout the night while socialising, enhancing activities, and reducing depressed moods (with results differing by age and gender).

Non-prescribed uses of psychiatric medications are particularly popular amongst students (White & Becker-Blease, 2006). Psychoactive substances such as hallucinogens and inhalants have been on the rise in recent years, with the usual motives of consumption being that they are less dangerous and addictive than other traditional illicit drugs (Couper, 2016). Issues regarding the non-medical use and misuse of prescription opioids, such as morphine, methadone, codeine, tramadol, and oxycodone are on the rise. Moreover, methylphenidate, dextroampahtemine, and mixed-salts amphetamines, which are popular treatment medication for attention deficit hyperactivity disorder (ADHD), with brand names such as Ritalin, Dexedrine, and Adderall, are particularly popular amongst university students (McCabe, Knight, Teter, & Wechsler, 2005). These stimulants are commonly abused in order to improve attention, party, reduce hyperactivity, and improve grades

(White, Becker-Blease, & Grace-Bishop, 2010). Motives for using non-therapeutic psychiatric medications (anxiolytic, sedative, and stimulant medications) are commonly linked to having a history of using other substances, as well as men typically reporting more use than women (McLarnon, Darredeau, Chan, & Barrett, 2014).

As discussed above, there is an extensive body of literature on young peoples' drug use, and attempts to identify the determents, predictors, and sources of resilience. The main approach to this researches has been a quantitative epidemiological lens (Moore, 1990). However, research has gradually shifted its focus from viewing youth drug use as an isolated social problem (Brunswick, Merzel, & Messeri, 1985), to it being considered a complex of various social, cultural, historical, psychological, economic, and political elements (Lunnay, Ward, & Borlagdan, 2011). Youth drug use is now viewed as more of a complex social problem consisting of various elements rather than its own isolated problem (Duff, 2003). Therefore, this discussion now turns to phenomena such as peer pressure as a significant element in drug use.

2.2.4 Peer pressure?

According to Foster & Spencer (2013), drugs and alcohol provide the youth with an inexpensive pastime to share with friends. These social networks and groups of friends are a factor for continuing drug use (Ford, 2009). Peer pressure depicts young drug users as indulging in drug culture in order be a part of the norms of peer groups (Martino et al., 2011). However, it has been questioned if the concept of peer pressure really explains the different roles of friends in one's drug use. According to Bauman & Ennett (1996), many young drug users pick friends who are also drug users, rather than using drugs because their friends are indulging in them. Moreover, Pilkington (2007) states that collective drug use

does not constitute peer pressure to engage in drug use, but rather that peer groups provide a supportive environment in which one makes drug decisions. This could mean that maybe there is differential association rather than ‘pressure’, as people interested in drugs seek others who share that interest. On the other hand, Pilkington's (2007) argument can raise issues regarding coercion, as a form of peer pressure, and ‘everyone is doing it’ has long been used as an explanation for why young people use drugs, especially in relation to the media (TV programs and educational films) (Sheppard, Wright, & Goodstadt, 1985). Still, Parker et al. (1998) make a point that normalisation includes a widespread view that people’s drug choices are their own business. Moreover, normalisation places recreational drug use as a consumer-based youth cultural lifestyle (Pilkington, 2007). Therefore, the peer pressure explanation decreases as normalisation gains more traction.

In summary, historically, the rise in youth drug use the 1990s led to attempts to identify risk factors, framed around society blaming youth for their curiosity, rebelliousness, and rule-breaking characteristics, which are the typical features of entry to adulthood for many young people. A focus on dependency tends to lead to the development of unsuccessful and inadequate interventions, such as the current laws on drugs. The great variety of types of drugs, each with its own motives for consumption, creates the need to approach and assess each one in a particular way. Therefore, the chapter now turns its attention to MDMA in particular and reviews the existing literature produced about its use.

2.3 MDMA in particular

2.3.1 History and an introduction to MDMA

3,4-Methylenedioxymethamphetamine (MDMA) or Ecstasy, which is an early street name of the substance, is also called XTC, or just ‘E’ for short (Shulgin, 1986), and is a popular

recreational drug, which is perceived as a dangerous neurotoxin by some (Curran, 2000; Gouzoulis-Mayfrank & Daumann, 2009; Ricaurte, Yuan, & McCann, 2000), and a potential psychotherapeutic agent by others (Danforth, Struble, Yazar-Klosinski, & Grob, 2016; Greer & Tolbert, 1998; Kirkpatrick, Guillot, & Hart, 2016). Historically speaking, the media has stated that MDMA was originally formulated and marketed as an appetite suppressant. However, this is a common and inaccurate belief, and the correct story claims that in 1912 it was created and patented by a German pharmaceutical company due to its psychotherapeutic usefulness, but remained ignored for the next 40 years (Cohen, 1998). In the early 1950s, it became part of controversial animal studies done with the support of the U.S. army, where it was assigned the code name EA-1475 (EA standing for Edgewood Arsenal), and in which no neurotoxicity or brain damage was observed (Hardman, Haavik, & Seevers, 1973).

In 1976, Dr Leo Zeff became the first psychotherapist to use MDMA in psychiatric treatments, and it quickly became popular amongst other private psychotherapists (while commonly being called ‘Adam’) due to its characteristics of producing an easily controlled state of consciousness (Shulgin, 1986), which resulted in an enhancement in communication (which is particularly significant in forming strong therapeutic alliances), as well as allowing the patients to have experiences of intense self-discovery and feelings of love and empathy (Pentney, 2001). Individuals began sharing MDMA with others, particularly after experiencing therapeutic benefits, and in the early 1980s, MDMA became commercialized as Ecstasy, while being promoted as a ‘fun drug’, and sold openly in bars in Austin and Dallas (Beck & Rosenbaum, 1994; Freudenmann, Öxler, & Bernschneider-Reif, 2006; Holland, 2001). In 1985, MDMA became a schedule one drug in the USA, which is the most restricted of all drug categories (Pentney, 2001), but its fame had already

spread across the Atlantic, and had now transformed from being ‘Adam’, the psychotherapy agent, to ‘Ecstasy’, the party drug, as the UK’s rave scene was born and recreational use was becoming increasingly popular (Mueller et al., 2016).

Nowadays it is commonly referred to as Ecstasy, Molly, or Mandy, and it is considered to be the drug of choice for ravers and clubbers (Barceloux, 2012). Similarly to the situation in the U.S., MDMA is heavily penalised in Britain, and is classified as a Class A Dangerous Drug (Hammersley, Khan, & Ditton, 2002). The drug usually comes in the form of a pill, which is taken orally (Gouzoulis-Mayfrank & Daumann, 2009), and is also increasingly accessible in crystal or powder form, which is often snorted (EMCDDA, 2016). Partygoers enjoy the energetic and euphoric effects that they experience from MDMA. Self-confidence, sexiness, and self-insight are just a few of the rewarding feelings that are sought and expected, as well as the drug being particularly popular for its empathetic characteristics, such as feelings of sociability, closeness, and sensuality (Hysek et al., 2014). According to the European Monitoring Centre for Drugs and Drug Addiction, approximately 13 million adults have used MDMA in their lifetimes, and within the last year, an estimated 2.1 million young adults (age 15-34) have used MDMA in Europe, which represents 1.7% of this age group, with a male to female ratio of 2.4 to 1 (EMCDDA, 2016). In North America, the annual prevalence of users was 0.9% in 2014 (UNODC, 2014). The recreational use of MDMA has declined over the past few years (UNODC, 2014); however, it has had an overall increase in Europe since the big decline in the early to mid-2000s (EMCDDA, 2016), and is still popular in the dance music scene.

2.3.2 Obtaining MDMA

Throughout the years, the availability and accessibility of drugs has been increasing

(Parker, 2005). MDMA and cannabis are the most commonly sold illicit drugs on the dark web market, which involves increasingly popular online sales platforms selling illicit drugs through various vendors, as sellers compete on price and quality, and where anonymity is promised through advanced technology (The Economist, 2016). Moreover, over the past fifty years the consumption of recreational drugs has become more normalized amongst students and other young people. Parker, Williams, and Aldridge (2002) concluded that recreational drug use had become a part of the social lives of the ordinary young people. Moreover, 'dance drugs' have become the second most commonly used group of illegal substances, after cannabis (UNODC, 2015).

People do not usually experiment with drugs in isolation. It is suggested that drug consumption is a representation of an active expression of how people cope with the demands of social structures (Moore & Miles, 2004). Many young drug users rely on friends and acquaintances to be supplied with drugs rather than dealers from the 'criminal world' (Parker, 2000). Users are usually known to prefer purchasing their drug from the same dealer in order to ensure the same quality over and over again (Panagopoulos & Ricciardelli, 2005). Furthermore, harm reduction is suggested to be practiced, as a friendship is built with the supplier, leading to friendly conversations and knowledge and safety measures about the substance (Jacinto, Duterte, Sales, & Murphy, 2008). Drug use is adhering more to a friendship and sharing etiquette, rather than being a result of the stereotypical peer pressure to fit into a subculture. Moreover, Dalgarno & Shewan (2005) highlight the importance of preparation, awareness, and choosing the right environment according to the drug of choice, stating that these steps could minimize risks associated with any drug, as the significance of the setting ensures the expected effects of a particular drug for the consumer.

2.3.3 Recreational and therapeutic effects

Ter Bogt & Engels (2005) state that there are three main effects of MDMA experienced by partygoers: mood changes (an instant shift in mood to a positive and euphoric state), stimulation (feeling more energised, which contributes to dancing and talking all night), and entactogenesis (feelings of openness and sympathy). MDMA causes a strong release of the indolamine neurotransmitter, serotonin, as well as the catecholamine neurotransmitter, dopamine, in the central nervous system, which is linked to experiencing feelings of relaxation, euphoria, emotional openness, and increased levels of empathy (Connor, 2004). These feelings are known to be enjoyed recreationally, as well as utilized in therapeutic settings in order to help with certain conditions. Some psychological effects that have been reported during MDMA use are the enhancement of the ability to distinguish facial expressions and feelings (Bedi, Hyman, & De Wit, 2010) and increased levels of compassion (Hysek et al., 2014). According to Schmid et al. (2014), the changes that are caused in the serotonin receptors have an impact on perception, which could be linked to the experience of feelings of closeness with others. Recreational users specifically enjoy the generated feelings of love and empathy (Greer & Tolbert, 1998). Moreover, an increase in sexual arousal and elevated sexual delight is also related to consumption of the drug (Frohmader, Pitchers, Balfour, & Coolen, 2010). It is important to note that most individuals report not having a need for penetrative sex, but just the strong presence of attitudes of sexiness, self-confidence, and sexual joy that could be experienced just through touch and closeness (McElrath, 2005).

In 1986, Shulgin (1986) stated that the classification of MDMA as an anti-depressant could be justified, with effects being relatively immediate after a single application rather than the gradual effects of traditional anti-depressants. Ecstasy use has also been linked to reducing

depression and anxiety by being used as a form of escape and self-medication (Scott, Hides, Allen, & Lubman, 2013). MDMA is well known for removing mental barriers, eliminating the fear of negative response, and enhancing sensuality (Pentney, 2001; Riedlinger & Riedlinger, 1994). Some mechanisms of MDMA are cited to be particularly helpful for the treatment of anxiety disorders, namely the following three: increased levels of oxytocin, which are helpful in strengthening therapeutic alliances; incensement of ventromedial prefrontal activity and a decrease in amygdala activity, which is helpful for improving emotional regulation and letting go of avoidance; and an increase in norepinephrine release as well as circulating cortisol levels, which improve emotional engagement and help with letting go of learned fear associations (Johansen & Krebs, 2009). Moreover, Hysek et al. (2014) highlight MDMA's ability to alter emotional recognition, and suggest using it as a tool to assist with social dysfunction or post-traumatic stress disorder (PTSD). Fields such as human behavioural pharmacology provide risk/benefit information, which is helpful in the process of developing policies about therapeutic usages of MDMA (Kirkpatrick et al., 2016). MDMA-assisted therapy suggests that the drug's therapeutic characteristics can be an effective tool when dealing with issues such as social anxiety, PTSD, and autism, when used under supervised dosage and supervised therapy session (Danforth et al., 2016). However, this is a highly debated topic, in which the benefits and the dangers in terms of psychotherapy are constantly being discussed (Bouso, Doblin, Farré, Alcázar, & Gómez-Jarabo, 2008; Parrott, 2014; Sessa, 2007).

2.3.4 Polydrug use

At times, recreational MDMA use has been linked to psychiatric and psychological problems; however, these problems are not necessarily specific to MDMA use as they are visible in other polydrug recreational users (Parrott, Milani, Parmar, & Turner, 2002).

Polydrug use is the use of more than one drug either at the same time, or within the same period of time, which is often linked to drug abuse issues (Daskalopoulou et al., 2014). Polydrug use is common amongst adolescents and adults, with alcohol commonly being present among all types of users, followed by tobacco and cannabis (Hernández-Serrano, Gras, Font-Mayolas, & Sullman, 2016). Polydrug use is the subject of debate, as the literature often finds a significant association with mental health problems, such as lifetime suicide attempts (Smith, Farrell, Bunting, Houston, & Shevlin, 2011).

In a study based on 400 clubbers in New York, 91.7% of participants stated having engaged in polydrug use, with over 1,600 combinations reported and Ecstasy and cocaine being the most commonly reported drugs being used with other substances (Grov, Kelly, & Parsons, 2009). The same study names Ecstasy as the 'universal compliment' stating that the drug is most cited in combinations with other drugs. MDMA users often report taking other substances including alcohol (EMCDDA, 2016). Moreover, Parrott (2006) states that around 90-95% of MDMA users also take cannabis, which may be a contributing factor to the adverse neuropsychobiological problems that are reported from MDMA use at times. Polydrug use is the norm amongst the participants of the dance music scene, with Ecstasy and hazardous levels of alcohol commonly being reported (Winstock, Griffiths, & Stewart, 2001). Moreover, a study done by Sañudo, Andreoni, & Sanchez (2015) states that electronic and hip-hop nightclubs are linked to having higher levels of polydrug users than clubs with other types of music.

2.3.5 Uses of MDMA and the sociocultural context of use

The use of drugs could be linked to exploring, or gaining therapeutic benefits (Müller & Schumann, 2011). Motives differ within people who use MDMA, and people who are using

it to explore and gain therapeutic benefits are not necessarily always the same as the ones who take it while attending raves. Some people report taking MDMA due to its reputation of being an aphrodisiac, while others report taking it due to curiosity or because 'it's the right occasion' (Hammersley et al., 2002). Many suggest that the uncertain and insecure aspects of many young people's lives are constantly increasing (Kelly, 2000), and so drug consumption, especially club drugs, can give the youth a feeling of some control over their lives. To understand the motives of the youth for experimenting and the start of drug use, it is important to look at the social experience of a young person.

Society often portrays the youth as helpless victims (Miles, 2000). France (2000) suggests that changes in the lives of the youth, such as shifts in education, employment, and relationships, have a major impact on increasing their willingness to take risks, which explains the increased levels of taking illicit drugs, smoking, and abusing alcohol. Moreover, these dangers are disregarded in the name of the youth being 'risk-takers'. The risk-taking characteristic, or 'youthful behaviour' argument often includes an attitude of blame and objectification towards the youth in general and their drug use in particular (Parker et al., 1998); troublesome youth are often linked to regular drug use and alcohol consumption (Carpenter et al., 1987). However, it is important to note that not all young people who use drugs become drug addicts, and recreational drug use, such as recreational MDMA users, could be linked to various factors, such as being useful for achieving personal goals (Müller & Schumann, 2011). Moreover, the modern world is full of thrill-seeking and risk-taking young people who want to experiment with illegal and mind-altering substances in order to satisfy their curiosities, and experimentation is a part of the normal trajectory of adolescence (Cohen, 1998).

Research on identifying the motives for consuming Ecstasy in particular portray that the drug is consumed for various different reasons. For example, Ecstasy is widely seen as a tool to rebel against mainstream society by taking part in hedonistic raves and parties. Olsen (2009) states that even though this substance is particularly popular amongst youth, the symbolic meanings related to consumption are in relation to everyday events, meaning a person's ideology about vitality and leisure, or being social, will not necessarily interfere with other social responsibilities. According to the same author, leisure, the significance of socialising, and having energy were the main motives to value MDMA in a social context, with patterns of use connected to subcultural tastes as well as values of leisure. Ter Bogt & Engels (2005) suggest that the motives for MDMA use change after the initial experimental trials, which are often due to curiosity, and that motives behind regular use are due to the pleasant feelings that are evoked, finding the ability to dance and socialise all night, and feelings of euphoria.

2.3.6 Morbidity and mortality

The risk of MDMA use leading to death is statistically low. Whilst deaths from MDMA use are tragic, most regular users experience minimal problems (Moore & Miles, 2004). The extent to which these deaths are the direct result of Ecstasy consumption remains a matter of considerable debate (Henry, Jeffreys, & Dawling, 1992; Krolikowski & Koyfman, 2014; Meyer, 2013). Deaths involving MDMA have been on the rise in the recent years, however, which may be due to other more toxic substances being sold as Ecstasy, such as PMA (para-Methoxyamphetamine) (EMCDDA, 2015b). In 2015, MDMA users seeking emergency care increased to 0.9%, as compared with 0.3% (of the total people who have been reported to seek emergency care for drug-related issues) in 2013 (Global Drug Survey, 2015). Moreover, the recent rise in the dosage of MDMA contained in pills has been a

concern, as consumers are at greater risk of acute harm (Global Drug Survey, 2016), with some pills containing over 300mg of MDMA, which is twice or thrice the typical reasonable dose (Global Drug Survey, 2015).

2.3.7 Neurotoxicity

Given the popularity of MDMA, most of the research that exists and is continuously growing is in the direction of physiological effects and not much exists in relation to the social and psychological processes that accompany drug consumption. MDMA research frequently focuses on psychiatric and adverse psychological symptoms of MDMA or drug combinations, and not much on the positive experiences (Palacios, 2005). Current debates typically focus on the neurotoxicity of MDMA in humans. Long-term serotonergic neurodegeneration in various brain areas, including the hippocampus, has been generated in animal data (Parrott & Lasky, 1998). Studies on rats and monkeys have shown an exhaustion of the neurotransmitter serotonin; however, similar ones have not been identified in humans (Jacinto et al., 2008). Moreover, a study done by Ricaurte, Yuan, Hatzidimitriou, Cord, and McCann (2002) associated the drug with neurotoxic damage in both serotonergic and dopaminergic systems, which later had to be withdrawn due to a mix-up of MDMA with methamphetamine during the study (Ricaurte, Yuan, Hatzidimitriou, Cord, & McCann, 2003). It is suggested that regular MDMA use can be associated with psychiatric symptoms in human beings such as effects on the memory deficits, with other cognitive processes relatively unaffected (McGuire, 2000). Neuroimaging studies have shown a decrease in the 5-HT transporter binding in brains of current users when compared to controls (McCann, Szabo, Scheffel, Dannals, & Ricaurte, 1998).

Preclinical studies often link MDMA use to long-term negative effects such as

neurotoxicity and mood disorders; however, limitations to these studies suggest continuing uncertainty regarding the specific risks to humans (Kirkpatrick et al., 2016). According to Montag & Becker (2016), neurocognitive and neuroimaging show evidence of memory damage and a change in hippocampal functioning. However, a human neuroimaging systematic review of moderate MDMA (Mueller et al., 2016) found that there is no convincing evidence of the effects of MDMA on brain functioning or brain structure through neuroimaging measures. Another issue with the current MDMA research is that MDMA users are commonly polydrug users, frequently consuming alcohol, cannabis, and various stimulants (Wu et al., 2009). In data analyses, alcohol and nicotine are typically neglected, and cannabis is commonly not excluded because if it were then there would be no eligible participants (Mueller et al., 2016). Neglecting or ignoring other drug use is problematic (Bossong, Jager, Bhattacharyya, & Allen, 2014), particularly in terms of increasing the apparent adverse effects of MDMA due to potential pharmacological interactions (Capela et al., 2014), and also because heavier users of MDMA are likely to also be heavier users of other drugs, such as alcohol, with known adverse effects.

The stimulation of serotonin and dopamine in the brain caused by taking MDMA generates various feelings and emotions. Joy, emotional closeness, sensory and auditory pleasure are just a few that can be optimized and effectively used in a club setting. However, serotonin syndrome, which includes mental confusion, can develop in hot and overcrowded conditions, such as club settings (Butler & Montgomery, 2004). Moreover, ‘midweek blues’, negative feelings, and mood swings are reported by 80-90% of the weekend users post-weekend use. In a club setting, often times the symptoms of serotonin syndrome can be reversed if users rest in a cooler area.

In summary, MDMA is a drug historically linked to the club and electronic dance music scene. It is the most popular drug sold on the dark web, and makes consumers energetic, enables the promotion of empathetic characteristics, as well as provoking feelings of euphoria and happiness. Recreational use has been linked to a debatable set of psychiatric and psychological problems, but they are not necessarily linked to MDMA, as MDMA users are often polydrug users. Friendships and being in the right setting while consuming MDMA are linked to harm reduction. Different motives have been identified for using MDMA, the most commonly noted of which are leisure, socializing, and increased energy. Moreover, in recent years MDMA-assisted therapy has become a popular topic of discussion in regards to PTSD, autism, and social anxiety. The present review now turns to the existing literature on MDMA addiction.

2.3.8 MDMA addiction?

Ecstasy use as a recreational drug has been on the rise since the late 1980s, particularly in the US, Europe, and Australia (Panagopoulos & Ricciardelli, 2005). MDMA is commonly reported being used as a recreational drug, with only a small number of MDMA users using it more than once a month (Home Office, 2015); most people report using MDMA less than 10 times a year (Global Drug Survey, 2016). Recreational drug use and drug-trying are not highly correlated to drug abuse, and most of the experiences reported of drug use are positive ones (Parker et al., 1998). Degenhardt et al. (2010) suggest that some individuals report problems; however, according to the literature, physical problems are reported much less than psychological ones, and only a minority of MDMA users become concerned with their use and seek out treatment options. Moreover, most drug users move gradually between different phases of drug use and spend some time in periods of transition (Parker

et al., 1998). MDMA is notably popular on university campuses, with some case reports of panic attacks, flashbacks, and/or paranoia (Jacinto et al., 2008). Some users seem to prefer infrequent use, a pattern which is not connected to normal addiction patterns (Jacinto et al., 2008).

MDMA seems to be a drug that is mostly used irregularly, often on the weekends, unlike some other drugs with physical dependency characteristics (Degenhardt et al., 2010). Epidemiological research states that most people who use psychoactive drugs that might lead to addiction are not and will not become addicts (O'Malley & Johnston, 2002). Moreover, intense drug use is commonly confused with drug dependence, which causes the development of unsuccessful and inadequate interventions (Hammersley, 2011). MDMA use is rarely reported as a motive for receiving drug treatment. For example, European reports show that in 2014, less than 1% (800 cases) of drug users tried to obtain specialized treatment for the first time (EMCDDA, 2016). There is some evidence of tolerance, as inexperienced users consume less than experienced ones in single sessions, and a reduction in subjective effectiveness is reported after repeated usage (Parrott, 2005). However, if there is such a thing as problematic MDMA use, then this is not of the same type as dependence on other drugs, although MDMA may be one of a number of substances used during periods of problematic drug use.

The positive feelings that are experienced, such as sociality, make the drug suitable for parties and clubs. Moreover, the low feelings experienced following the use of the drug (depression, anxiety, and paranoia) are not known to be a factor in discouraging the users from taking the drug (Curran & Travill, 1997). People typically value the positive effects and want to keep using, but, as previously mentioned, they do not generally use it every

day. Müller & Schumann (2011) suggest that the desire for the use of non-addictive psychoactive drugs, such as MDMA, could be explained by people's choosing psychoactive drugs as a normal activity in their lives, as their effects could be useful towards personal goals. The same authors explain this further by stating that humans consume these drugs in order to gain an altered state of mind, which could be beneficial to individuals, as it allows consumers to pursue goals relevant for survival and reproduction, which may also explain the persistence of drug use in societies.

Little is known about the factors that contribute to the decision to slow down or stop the regular use of MDMA. Some previous studies have linked the regular use of MDMA to depressed mood, anxiety, and hostility; however, these effects are not known to carry on after one stops using the drug regularly. A study done by Verheyden, Maidment, & Curran (2003) categorized ex-users into two categories: people who quit for mental health reasons and those who quit due to circumstance reasons (such as boredom or a decrease in the quality of MDMA). Their findings suggest that many of the users who were diagnosed with clinical depression post-quitting may have had pre-existing mental health problems for which they self-medicated themselves by using the drug in the first place. Nevertheless, the motives behind cutting down on MDMA use remain extremely under-researched, which is one rationale for the current study.

The potential for dependency on MDMA is a debatable subject (Degenhardt et al., 2010). MDMA users seem to be less likely to report dependence symptoms compared to users of other drugs such as cocaine, mephedrone, and ketamine, according to a study done by Uosukainen, Tacke, & Winstock (2015). In fact, the same authors suggest that MDMA has the highest rating of pleasurable high and lowest of risk harm. According to Degenhardt et

al. (2010), psychological symptoms play a great role in MDMA dependency, which behavioural reinforcement and learning may play a significant role in. Moreover, research based on dependency, physical and social harms and benefits notes that Ecstasy, cannabis, and LSD contain the highest level of acute and chronic benefits, and are much less harmful than alcohol and tobacco (Morgan, Muetzelfeldt, Muetzelfeldt, Nutt, & Curran, 2010). The frequency, length, and pattern of use are associated with dependency on the drug (Bruno et al., 2009). Users often report a low frequency of use (Panagopoulos & Ricciardelli, 2005), and women are more likely to report MDMA dependency (Bruno et al., 2009). Moreover, women tend to report more negative effects from the drug, such as depression, confusion, loss of control, suspiciousness, edginess, nausea, and dizziness (Ter Bogt & Engels, 2005). However, Almeida, Garcia-Mijares, & Silva (2009) found no gender difference.

In summary, MDMA users are typically recreational users, and users report less dependency compared to other drugs such as cocaine and ketamine. Moreover, MDMA is associated with the highest ratings of pleasurable high and lowest of risk harm. Factors such as polydrug use amongst MDMA users makes reported side effects of MDMA, notably neurotoxic damage and psychiatric problems, a debatable subject. Thus, a significant gap in the literature can be found in regards to the process of quitting or reducing MDMA consumption.

This section explored the literature on general motives for using drugs and MDMA in particular, and MDMA use and addiction. Given the social significance of clubbing, the next section will focus on the literature on MDMA and its close links to clubbing culture.

2.4 MDMA and Clubbing

2.4.1 MDMA and dance culture

Rave culture has been referred to as a pivotal development in youth culture in Europe and Britain (Redhead, 1997). Since its development in the late 1980s, raves have referred to anti-establishment and unlicensed dance parties where participants dance all night to electronically-produced dance music (Anderson & Kavanaugh, 2007). On an international level, the dance scene is often associated with drugs (Parker et al., 2002; Ter Bogt, Engels, Hibbel, van Wel, & Verhagen, 2002). Club drugs is a term used for a loosely defined group of recreational drugs that are commonly used at clubs and raves, such as Ecstasy, ketamine, and GHB, and that are often easily obtained and affordable at such events (Rome, 2001). Reynolds (1998) states that the mass popularity of raves in the UK has always consisted of two main essential elements: music and drugs, and house music and MDMA in particular, as it 'beatifies' the music and gives the individuals the ability to dance, socialise, and flirt throughout the night. MDMA is fundamentally associated with rave culture. Recreational MDMA is often taken at raves, where the effects enhance the prolonged hours of dancing marathons (Parrott, 2006). Clubbing has become one of the most significant experimental playgrounds for young people. Malbon (1998) argues that clubs supply young people with an ideal space in which they can express themselves as affiliating with others, moulding both individual and group identities. Moreover, clubs are not only an escape from reality, but also an extension of youth identities, in which the encounter of mind and body can extend into real life, and club drugs play a crucial role in rave culture.

The positive effects of MDMA – such as enhancement of positive mood and increased energy, empathy and sociability – result in enhanced psychological, physiological, and

social experiences (Panagopoulos & Ricciardelli, 2005). Moreover, it is suggested that MDMA use promotes a positive state of pre-use, as users are commonly known to drink, smoke cannabis, listen to music, and have rested and eaten well before use (Solowij, Hall, & Lee, 1992). MDMA is widely known as a club drug, and there is a high association between raves and MDMA use (Palamar, Griffin-Tomas, & Ompad, 2015). Outdoor electronic dance festivals are becoming more and more popular, where people dance for hours, and typically consume recreational drugs, notably MDMA and other synthetic drugs (Ridpath et al., 2014). Van Havere, Vanderplasschen, Lammertyn, Broekaert, & Bellis (2011) have noted that drug use is much higher in people with music preferences such as electronic dance music (EDM) than with those interested in Rock. As EDM and dance festivals have gained in popularity worldwide within the last few years, with thousands of people at single events (Watson, 2014), the energetic and euphoric effects of MDMA make it the perfect substance of choice for partygoers and ravers (Ter Bogt & Engels, 2005).

Given that MDMA is a 'club drug' commonly consumed by users within these spaces, it is crucial to better understand clubbing culture and who clubbers really are. Some DJs, musicians, and nightlife workers in general use drugs, such as MDMA, in order to enhance their ability to do their jobs, and to engage with the aesthetics of the party, as Mandler (2016) puts it, to 'produce and perform pleasure'. Moreover, Mandler (2016) states that these experiences are reported to commonly enhance their ability to play certain types of music that reflect the mood of the crowd more accurately.

In the Netherlands, 'house' is characterized as one of the main subcultures amongst the youth, especially during the 1980s and 1990s, and involves dancing all night at parties or clubs while consuming MDMA (Ter Bogt et al., 2002). The personality traits that are

commonly linked to MDMA users of this subculture are alertness, sociability, agreeableness, and mental and emotional stability (Ter Bogt, Engels, & Dubas, 2006). Although some ethnographic research shows a positive correlation between MDMA use and a negative effect on the ability to function at work and/or work, it is suggested that being high and euphoric from MDMA may positively affect the development of personal and social identity during the adolescence years (Ter Bogt et al., 2002).

2.4.2 What are clubs?

The long-standing tradition of the night-time economy predates raves. Nightclubs can be viewed as hedonistic, complex spaces for pleasure, fun, and countless other feelings and emotions. They are places made for enjoyment and elation, intended to allure through human and nonhuman technologies of public intimacy, and where anxiety, pride, shame, and embarrassment are incorporated with the effects of love, joy, and sympathy (Thrift, 2008). Illegal drugs are an unspoken way of adding to the experience of having a good night out (Ravn, 2012). Research often refers to nightclubs as a predominant stage for drug use (Aas, 2006). However, the nightclub, being a place of consumption, fun, and hedonism, is often used by political-economic alliances as a scapegoat for larger social problems (Demant & Landolt, 2014). Such perceptions suggest that government policies and social codes of conduct strive to direct people's actions, impulses, and preferences (Demant, 2013). The media and the politicians insist on fighting the war on drugs by portraying clubbing as a commitment to getting high and indulging in the use of drugs. Even though there is no doubt that some people do become dependent on drugs, for the most part, that is not what clubbing is all about. Club culture is primarily about hedonism and celebrating life with drug use, and other pleasure seeking activities secondarily.

The rave scene, starting in the 1980s as unlicensed, underground secret events, are nowadays mostly fully licenced events, and have fragmented into many sub-scenes, usually centred around different varieties of electronic music, and these all-night dance parties have now become a regular fixture of the nightclub scene, and are no longer being called raves (Hutson, 2000). Sansom (1998) points out that these events all feature the three main critical elements of raves, which are long duration, dance music, and an ecstatic experience. St John (2006) suggests that in electronic dance music culture, there is a presence of religiosity and spirituality amongst the people, where individuals experience different states, such as a state of transcendence, through dance experiences.

Historically speaking, raves have gone through many phases, from being unlicensed events being held at abandoned warehouses, to more recently becoming high-priced parties at well-known clubs (Anderson, 2009). The start of the rave scene is linked to the mid-1980s in the United Kingdom, which became a scene with a significant number of youth being involved (Critcher, 2000). The rave scene, or subculture, included a diverse population, coming from different cultures and backgrounds, which was very unique compared to the subcultures of the past (Redhead, 1997). Research in anthropology and sociology recognizes that many manifestos of the electronic dance music cultural phenomenon carry significance, purpose, and meaning to the youth (St John, 2006). It is commonly suggested that normalisation has spread through this subculture. The popularity of the club scene has been a main factor for normalizing drug use and shifting it from a marginal subculture to a more popular and modern youth culture (South, 1999). This shift is a major factor of normalisation.

Some holiday destinations in Europe and further afield, for instance in Thailand, are well

known for being party destinations and attract tourists due to the promise of the hedonistic pleasures of club culture. Since the mid-1980s, innovative DJs and the relaxed attitude towards drugs have created a pleasurable atmosphere by producing the perfect music for dance parties and attracting tourists to places such as Ibiza and Ayi Napa (Collin, 1997). Raves and the party drug MDMA became greatly popular in the UK, such that in 1993 the combined attendance reached 50 million admissions, and made $2.7 billion (Hutson, 2000), until 1994, when raves were banned and parties shifted to regulated and semi-permanent venues (Goulding, Shankar, Elliott, & Canniford, 2009).

Clubbing in general is very much about the senses and feeling a communal musical leisure experience which focuses on the body taking over the mind. According to Goulding et al. (2009), clubbing is an intense biosocial occurrence. The consumption of music is a huge part of the culture. Electronic dance music is an umbrella term used to cover a broad range of electronic music genres that share a post-disco genealogy (disco being the first genre of EDM), such as techno, house, trance, drum and bass, and their respective subgenres, and which are largely produced for clubs, raves, and festivals (McLeod, 2001; Sylvan, 2005). Different clubs focus on particular types of music, bringing in a particular crowd of people. For example, Ibiza, Goa, and Koh Phangan are all destinations with a target in the trance music market (Knox, 2009). The DJs have an extreme amount of power and responsibility, as they provide what the crowd desires by choosing the right music (Sansom, 1998).

On the whole, research suggests that clubs are hedonistic spaces, and platforms used for socializing, dancing, and relieving stress. Club and rave culture is discussed as carrying a great deal of purpose and meaning to the youth. It is also suggested that clubs are common stages for drug use. We will now move on to discuss who clubbers are.

2.4.3 Who are clubbers?

Clubbers come from all walks of life, with a wide variety of socioeconomic backgrounds, ethnicities, and sexualities (Sönmez, Apostolopoulos, Theocharous, & Massengale, 2013). Nightclubs are places where the rules and norms of society are not fully practiced, a place where people are able to escape from their everyday normal behaviours and behave in ways that are well known to clubbers, such as grasping the hand of someone nearby, stomping feet on the sticky dance floor, or socialising with strangers for hours. Club culture holds a commitment to partying, while remaining respectful, and celebrating life with friends and groups of complete strangers (Moore, 2004). Violence, medical issues (especially due to overdoses of alcohol and recreational drugs), and even deaths are events that happen in the scene as well. There is an established relationship between nightlife and violence. For example, in Europe youth violence is usually associated with alcohol consumption (Calafat et al., 2013). Moreover, half of all violence in England and Wales is said to occur after drinking (Walker, Flatley, Kershaw, & Moon, 2009). Young adults are associated with the largest number of alcohol-related injuries worldwide (Babor et al., 2010). However, the governments in Western and European countries with flourishing night life have placed a great emphasis on developing campaigns and strategies to encourage drinking responsibly in order to reduce alcohol-related harm (Niland, Lyons, Goodwin, & Hutton, 2013). Furthermore, violence is not what the club culture promotes. Kent (2013) suggests that being a ‘clubber’ is when being at a club completely fulfils ones expectations, as this brings an adequate distance from everyday life, providing an escape for some. Being a clubber gives one a sense of belonging, and a sense of being part of community, in which participants share a common knowledge of the unwritten rules of the space that they are in. Participants usually share the same tastes in music, media, dance styles, and dress styles

(Sansom, 1998). Moreover, it is a culture in which it is encouraged to make friends with strangers, try to understand their perspectives, and to celebrate a culture of pleasure with others (Moore, 2004).

MDMA users and ravers are typically diverse and from a range of educational and socioeconomic backgrounds. Hammersley et al. (2002), state that their sample of 229 Glaswegian MDMA users who were gathered through the snowballing method, were between the age of 14-44, while having education levels higher than typically-researched drug users, mostly single, with various levels of income. In America, a study done by Carlson, Falck, McCaughan, & Siegal (2004) on 30 MDMA users and clubbers from Ohio revealed an age range of 18-31, almost half having university degrees, with a range of consumption patterns, with the number tablets being used per occasion ranging from half a tablet to 8 tablets.

To conclude, clubbers are commonly known to be young adults coming from a diverse range of backgrounds. There is a known relationship between nightlife and violence; however, club culture promotes friendship and a celebration of culture and hedonism, much of which is driven by dance music and drug use. MDMA use is highly associated with rave culture. In recent years deaths involving MDMA at such events have risen, which could be linked to various factors, such as other substances being sold as MDMA. The positive feelings experienced through MDMA make it ideal for use in a club setting and for pleasures to be optimized.

2.5 Summary

This chapter has presented an overview of the literature produced in the fields of drugs and MDMA usage, clubbing, and the social and psychological aspects that are associated with

these phenomena. The following chapter draws from this review and presents the research design and methodology that was utilized to achieve the aims of this study.

Chapter 3: Methodology

3.1 Introduction

This chapter presents the research design and methods used in the study. The chapter starts by presenting the philosophical underpinnings of the study, namely social constructionism. This progresses to the methods employed for questionnaire design, which are drawn from the Life Story Approach (McAdams, 1988, 2008, 2012), as well as the data collection process, and finally the steps of thematic analysis of the data. The main criterion for participation in this study is the self-identification of participants as being past heavy users of MDMA.

3.2 Research philosophy and rationale for qualitative research approach

Qualitative research encourages the researcher to go into the study with an open mind, which is ideal for exploring and understanding human experiences and aims to explain the creation and meaning of social experiences (Denzin & Lincoln, 2000). Qualitative research allows respondents to reflect on their experiences, and requires that the researcher keep a fair amount of ambiguity through being flexible and open towards the data (Corbin & Strauss, 2008). As Heppner, Kivlighan, & Wampold (1999, p. 246) put it, “Consequently, qualitative researchers want to study behaviour in context and might even go as far as to contend that it is the interpretation of the context that is the essential process to be studied.”

Qualitative research is generally rooted in a constructivist philosophical paradigm. A philosophical paradigm consists of the fundamental assumptions and intellectual structure on which research and development in a field of study is based (Kuhn, 1962). The pursuit of scientific knowledge is fundamentally divided into two general paradigms: positivism

and constructivism, each of which adopts different ontological and epistemological stances, which ultimately inform the methodological approach to be applied (Guba & Lincoln, 1994).

Broadly speaking, positivism assumes reality to be fixed and external to the observer. In this worldview, knowledge results from the study of the objective world. Findings obtained through scientific endeavour are thus expected to always be the same (in other words, replicable), regardless of the method employed (Guba & Lincoln, 1994). The constructivist approach, on the other hand, assumes reality as a phenomenon socially constructed through human action and thought. In this sense, reality is interpreted differently and subjectively by every individual. This is a relativist perspective which contends that the accumulation of knowledge is influenced by the individual's values and beliefs; therefore, the findings obtained will differ from one researcher to another, even in the case of the same methods being applied (Guba & Lincoln, 1994). This is in slight contrast with a critical realist perspective, which acknowledges some elements as 'real', thereby adopting a somewhat less subjective worldview.

Perceptions and understandings of drug use and addiction are clearly socially constructed, whatever the ontological status of other forms of knowledge (Davies, 1997; Hammersley & Reid, 2002). Drug use has long been linked to human social life. Historically, it was linked to deviant subcultures until the 1990s (Agar, 1973), which shifted with the more recent discussion of normalisation, the increase of tolerance, and in some cases even positive approval of illicit drug use within society (Aldridge et al., 2011). Given this multiplicity of understandings, this study adopts the constructivist paradigm. The subjective nature of drug use experiences requires a methodology that is capable of understanding the varied

experiences and perceptions of different people. A constructivist approach applying qualitative methods allows us to understand the meanings people bring to the themes, as meanings transform experiences into social categories (Charmaz, 2006).

Qualitative research methodologies have evolved substantially, resulting in more scientifically defensible theories, sampling, and analytical strategies (Trotter, 2012). For this study, it was vital be able to capture the perspectives of the individuals and to take in the constraints of their MDMA journey. A qualitative method would allow interpretation rather than finding causal sequences, as the data would be more rich and deep. Moreover, research in new areas is often encouraged to use qualitative methods, due to an underdeveloped measuring method, or little knowledge of the topic (Denzin & Lincoln, 2000). Understanding the reasons for and the process of quitting or cutting down MDMA use is a topic less explored within the field of addiction, and MDMA use in particular. Qualitative methods value and utilize richness and description in data, whereas quantitative researchers believe that such data makes generalization more difficult (Denzin & Lincoln, 2000). A rich and in-depth picture of individual life experiences and stories with little structure, as well as the examination of the constraints of everyday life in these experiences, were needed in order to better explore individual points of view and experiences with respect to MDMA use.

Some argue that qualitative and quantitative research are two different cultures in psychology that search for answers to different types of questions (Howitt & Cramer, 2005). If this is the case, as all researchers have the choice, the research question should always have primacy. As previously mentioned, for this study, an online methodology with

open-ended questions was employed, as an in-depth and descriptive account of individual MDMA journeys was needed to understand and explore the topic.

The debate between qualitative and quantitative research was originally centred on distinctions in assumption and inferential orientations toward the major methodological concepts such as validity, reliability, generalization, and sample design in order to decrease bias (Trotter, 2012). Furthermore, the two research approaches differ from one another on issues like variation description, analytical generalization, saturation model, and whether the research is culturally representative (Luborsky & Rubinstein, 1995). An example of a this debate concerns the question of sample size, where according to quantitative research, a powerful analysis requires a set number of participants in regard to a specific research project (Murphy, Myors, & Wolach, 2009). In contrast, the ideal sample size for qualitative research could be reached through the process of redundancy (conducting interviews until no new concepts are emerging and a repetition of the listed concepts can be seen) (Bernard, 2011), or through saturation, when all of the questions have been deeply explored and no new emerging concepts can be witnessed (LeCompte & Schensul, 2010). A difference that is continuously being debated is that the quantitative approach quantifies criteria for sample size, while finding a sample size is a qualitative process in the qualitative approach.

Qualitative research is commonly criticized for not being able to address issues of cause and effect due to the absence of statistics and other comparisons. However, qualitative researchers are often not necessarily interested in cause and effect, but rather in the process of how phenomena operate, in testing initial hypotheses and theories, and only sometimes in recognizing possible causes and effects (Johnson, 1997). A vast number of epistemological problems with qualitative research were identified and addressed by

Luborsky & Rubinstein (1995), many of which have either been resolved or are continuously being resolved through various methodological approaches and empirical tests of theory (Trotter, 2012). These changes and advancements have been made through the evolution of qualitative methods, and the development of more scientifically defensible theories, and sampling and analytical strategies (Bernard, 2011; Creswell, 2009). Moreover, some researchers, such as Smith (1984), point out that the traditional quantitative criteria for reliability and validity are not applicable to qualitative research, leading to the development of strategies in order to maximize the validity of qualitative research. These include strategies to promote qualitative validity (such as reflexivity, which is the researcher being actively aware of self-reflection in order to control biases), as well as various types of validities, which are important to such research as suggested by Johnson (1997). These include descriptive validity (making sure of the researcher's accuracy in reporting descriptive information), interpretive validity (portraying the right meanings through understanding the individuals being studied), and theoretical validity (making sure that the theoretical explanation fits the data).

However, as is the constructivist paradigm based on interpretivist approaches to reality, it should be noted that generalisation is not intended in this study. Instead, the study tries to provide insights as well as references for further research on the subject. The qualitative approach was the most suitable for this research as it allowed the possibility of exploring the social experiences of the participants, gaining a deep and meaning-based understanding of individual experience with MDMA, as well as building and creating development questions for future research.

3.3 Research methods

3.3.1 Dan McAdam's Life Story Method

One approach to understanding human behaviour and experiences is through autobiographical mental images, life stories, and narrative approaches. A life story model of adult identity was constructed by Dan P. McAdams (1996), which suggests that people's "ego identity" is mainly a personal narrative, which places each person in a specific psychological niche. A life story is a narrative approach in order to make sense of human behaviour and experience (McAdams, 2001). This approach is associated with ventures in idiographic views such as case studies in psychology (Allport, 1965) and psychobiographies (Erikson, 1962). A pivotal development in the context of understanding human behaviour and experiences is McAdams's life story model of identity (1988, 1993, 1996). Social sciences have a rising interest in how narrative and stories connect to human lives and relationships. Cognitive psychologists such as Pillemer (2001) have focused on encoding, storing, and retrieval of information concerning life events and personal experiences. The autobiographical memory stores, locates, and defines the self in a continuous life story that is moving toward future goals and desires.

Personal identities are constructed as life stories, in which individuals have common themes, characters and structures (Hammersley et al., 2015). Moreover, the authors point out that through McAdams' Life Story Method it is possible to discover things about individuals' life stories that were not necessarily pointed out by the participants themselves, but rather are interpretations and analyses of the researcher, as well as grasping an understanding of the intentional personal sense-making of the participants' stories.

The Life Story Method is structured in a way that facilitates systematic recall of key aspects of one's life. It has previously been successfully applied in other studies relating to drug use (Hammersley et al., 2015). Life narrative studies enrich psychology by producing valid and reliable material, which spark new theories and hypotheses (McAdams, 2006). In the context of the present study, this is ideal as it allows the person to place MDMA and clubbing as a central or subsidiary element in their life story. Moreover, it gives the researcher a wide exploratory net in order to explore and understand the experiences and journeys of individuals with MDMA. The life story method encourages a systematic recall of key events in individual lives, by asking the participant to tell his/her story in different periods of their life, while identifying best and worst experiences (McAdams, 2001); this process allows individuals to place their MDMA use as centrally as they wish in their stories. This was particularly important in this research due to the proneness of qualitative research with drug users to focus strictly on drug use. An online research survey was chosen, and McAdam's life story method was adapted to suit this method, which will be further discussed in section 3.4.2.

3.3.2 Sample

3.3.2.1 Inclusion criteria

In order to be eligible for this study, participants had to self-identify as former heavy MDMA users who had cut down or completely stopped the use of the drug. According to the American Psychological Association, addiction is defined as when the body needs to have a drug in order to avoid physical and psychological withdrawal symptoms (Major et al., 2000). This diagnostic criterion could not be used because MDMA is unlikely to lead to dependence. MDMA users seem to be less likely to report dependence symptoms

compared to users of other drugs, and dependency on this drug is more likely psychological than physical if existent (Uosukainen et al., 2015). Self-identification was chosen as the preferred tool for distinguishing eligibility, due to the wide range of differences in quantity and frequency of use, making it difficult to have a set definition of a heavy MDMA user. Objective definitions of heavy MDMA use are problematic to define, due to stacking, binging, and generally intermittent use. Therefore, heavy MDMA use varies largely in quantity and duration of consumption, making it distinguishable via self-identification rather than by quantitative criteria. For example, what one individual regards as heavy use might be significantly lower in terms of quantity, but significantly higher in terms of frequency compared to another person. Moreover, one person might go on a three-day MDMA binge on a monthly basis, while another might take it on a weekly basis; these describe totally different consumption habits, but both are heavy users. Therefore, self-identified ex-heavy users were most suitable for this research, as categorizing a heavy user by a scale would be difficult and imprecise due to individual differences. Moreover, there were no age restrictions for this study, and there were no forms of screening for any type of psychiatric histories or illnesses.

3.3.2.2 Recruitment

Participants were recruited in various ways. Using ethnographic research methods (Arcury & Quandt, 1999), participants were recruited at music events in which the use of MDMA is known to be more common. These events and places included dance clubs, raves, and music festivals. Recruitment was done by socializing and networking with people at these events, then informing possible candidates of the research, along with contact information for the researcher if candidates qualified and were interested in participation. Snowball or chain-referral sampling was also attempted for recruitment, although it was not very

successful and most recruitment was direct. Snowball or chain-referral sampling refers to encouraging participants to refer peers who are eligible for the study (Heckathorn, 1997). In this type of sampling, the chosen participant constitutes a second wave of data collection so as to construct the third wave and so on. This could possibly provide a framework for conducting a power analysis along with sample size in order to follow up for estimation of population characteristics for hidden populations (Frank & Snijders, 1994). The attempt to use this method was by stating in the information sheet that this study aimed to understand individual experiences on a very personal level and that it would be greatly appreciated if the participant could refer anyone who qualified for the study and would be willing to participate. They were encouraged to provide their peers with the researcher's email address in order to receive information and instructions for participating in the research. However, only a few emails were received, which demonstrated that the snowball effect was not very successful in recruitment.

Participants were also recruited through various social media outlets such as Facebook, Twitter, and various drugs and rave online forums. Google was used as the preferred search engine in order to find active forums. A story on ex-ravers written by Helen Pidd, the North of England editor for The Guardian, led us to contact her about the research, in which she showed interest and she tweeted about it to her 24.3K followers, which provided great exposure for the topic and the research. Online forums were found by searching the following key words: 'MDMA', 'ecstasy', 'drugs', 'rave', 'ravers', 'drum and bass', and 'EDM' (electronic dance music). For a list of the related forums and Facebook groups, please see Appendix 1. A variety of reactions to the advertising posts made in these forums were visible. Some members replied in a joking matter, commonly stating their disappointment about the absence of free drugs for such a research project (see example

below). Jokes like these were common, perhaps due to the common association of drug-related research with testing and pharmaceutical-linked research, as well as MDMA being a less socially researched topic.

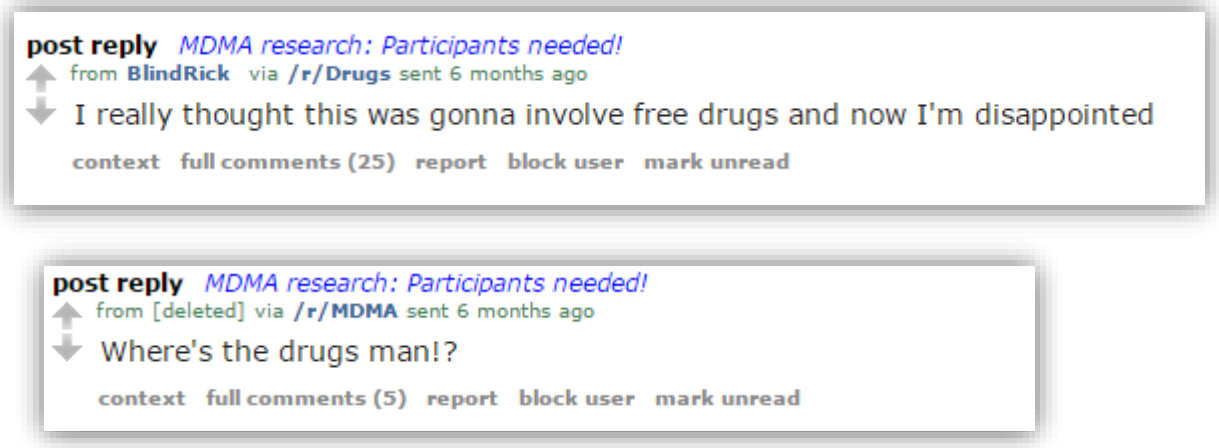
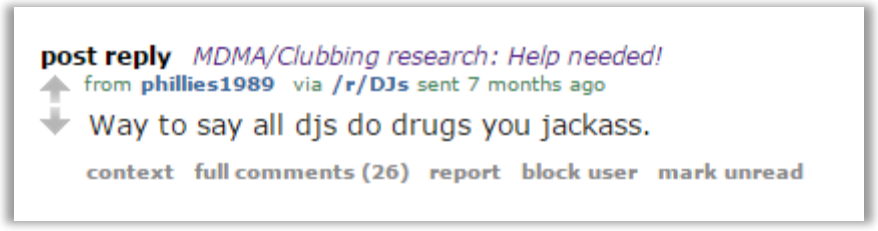


Figure 3. Examples of reactions to recruitment postings

Other participants objected to certain aspects of the research, for example, the linkage of music events to drugs. Although MDMA use is highly linked to music events, a posting in a DJ forum caused a stir, creating a long chain of conversation among the members about the DJ scene and MDMA. While some were angry about the assumptions of a link between drugs and DJs, others stated that such assumptions are not out of the ordinary. It was interesting to see how a post about drug research would upset some, who are in the centre of a 'scene' that is highly associated with MDMA use. Here are two examples from such conversations:



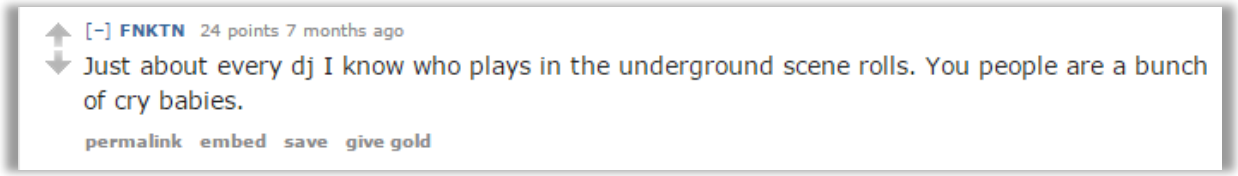


Figure 4. Examples of responses in DJ related forums

Moreover, other participants asked questions about the research or showed interest in eventually seeing the results. Some alcohol and drug support and recovery agencies in Yorkshire were also contacted via email, asking for referral of possible candidates (such as Alcohol & Drug Services and Humber Addictions Services). No formal reply was received, so knowledge of whether the questionnaire was actually presented is not available. Lastly, later in the data collection stage, the website www.rollsafe.org, contacted us and asked if we would like to seek participants through their website, which is regularly visited by MDMA users. Rollsafe is a website frequently mentioned by the participants, as it offers a complete harm reduction guide for MDMA and Ecstasy use, and promotes the sharing of harm reduction knowledge in order for users to have a good time and stay safe. The study was posted on the website on February 2016 (See Appendix 2 for the listing).

3.3.2.3 Sample size

Sample size in qualitative research can be smaller than in quantitative research; as the study progresses, more data is not necessarily a sign of more information. Sample size must be big enough to uncover most or all of the important perceptions, but not so large that data would become repetitive and redundant (Mason, 2010). Saturation, that is, the moment when "the new information obtained does not further provide insight" (Creswell, 1998, p. 151), is widely used as a guiding principle to determine the sample size.

Although many researchers shy away from suggesting what constitutes a sufficient sample size, some guidelines exist as the idea of saturation makes it difficult to estimate the sample size prior to data collection; 5-25 participants are the suggested number in phenomenological studies (Creswell, 1998). In this study, 104 people completed the questionnaire on their own time at home on the Internet via a link, which they were provided with. The number was originally 107; however, three of the questionnaires were identified as bogus and the number was reduced to 104. Participation was low between January to October 2015, and started to increase from October 2015 onward, as new data collection tactics were introduced. January 2016 carried the biggest wave of participants, which was most likely linked to recruitment through a private Facebook group in relation to the Burning Man festival, which attracted a lot of attention. The Burning Man festival is an annual weeklong festival located in the deserts of Nevada, where the area becomes filled with various forms of artistic self-expression, attracting large numbers of participants from various parts of the world. Completed questionnaires varied in length: some participants wrote a few pages, while others wrote only a few paragraphs. It is not possible to characterize the sample in terms of how many individuals were recruited by which methods, as anonymity prevents the disclosure of this information.

3.4 Research procedures

3.4.1 Data collection

Data collection for this study was informed by McAdam's Life Story Method (1988, 2006), a qualitative research method, using semi-structured interviews. McAdams (1988) constructed a life story model of identity based on the idea that young adults interpret their lives as evolving stories that weave the reconstructed past and the anticipated future to

provide their life with an appearance of unity and purpose. Structural and content differences are the most important individual differences. The author contends that in a coherent life story, the culture in which the story was created in and the life that was lived will shine through. Moreover, the personality shows its most important relations to culture within the narrative identity (McAdams, 2006; Rosenwald & Ochberg, 1992). The interviews in this method focus on telling a selective story of one's life, rather than retelling everything that has ever happened. They focus on key scenes, characters, and ideas, in order to understand the most important things that have happened.

The Life Story Method is commonly used to understand the different ways in which people live their lives and understand who they are. A growing number of psychological theorists, researchers, and therapists believe that meaningful selves are created through the individual and social construction of coherent life stories (McAdams, 2008). Applying the life story method to this study allowed the participants to place clubbing and MDMA use in their stories as they felt was appropriate. As a self-reflection tool, the Life Story Method provided an effective window for understanding the different ways people fit MDMA use into their lives. This method was a useful way for identifying and getting a deeper understanding of the role MDMA and clubbing played in the participant lives, and their views of that period of their life now.

3.4.2 Online research survey

The interviews for this study were conducted via an online survey using a series of open-ended questions. In recent years, social sciences have shown increased interest in online methods (Stewart & Williams, 2005). Although online research can be criticized for lacking verbal cues (Kenny, 2005), it has many advantages compared to other methods,

including offering participants almost complete anonymity and confidentiality (Adams, Rodham, & Gavin, 2005); although researchers could trace IP addresses, they are commonly trusted not to. Privacy protection of participants is a major concern for all research, and is particularly crucial when researching illegal and potentially disgraceful behaviours such as drug use. Low levels of willingness to participate in studies are linked to lower levels or absence of confidentiality (Singer, Hippler, & Schwarz, 1992). As previously mentioned, initially participants were recruited by ethnographic research methods through socializing and networking with people in associated scenes. Potential participants regularly expressed hesitation about participating in the research, stating that they did not want their identities exposed under any circumstances, given the sensitivity of the subject matter. Participants commonly mentioned the likelihood of such exposure having a potential impact on various aspects of their lives, such as reputation and finding a job. Although anonymity was repeatedly promised, greater participation was seen through online recruitment, which made anonymity more convincing, as there was no face-to-face contact between the researcher and the participants.

According to Kraut et al. (2004), when participants are able to be identified in research that involves information that could cause them to be at risk of criminal or civil liability, financial issues, employability, insurability, reputation, goodwill, or could be the cause of stigmatization, the researchers should be particularly careful about the violation of confidentiality. Anonymous online data collection ensured the privacy of the participant. Moreover, using a highly anonymous technique which promised to protect the participants from being exposed or identified was also a tool for avoiding sampling bias such as the volunteer effect, in which participants who are the most motivated self-select themselves. According to Eysenbach & Wyatt (2002), selection bias is caused when comparing

participants to non-participants, as they are systematically different from each other. The same authors argue that this is due to the fact that the self-selected volunteers have a more secure self-image compared to those who do not choose to participate. Moreover, people with a less secure self-image may consciously try to avoid taking part in studies in order to avoid judgement or exposure of their life choices and decisions (Bandura, 1977). Lack of privacy in studies, especially those on more sensitive subjects, could also be the cause of lack of information from the respondents. Managing participant confidentiality in addiction research is a vital issue; it has even raised legal challenges for researchers, ethics committees, and clinicians (Clough & Conigrave, 2008). As drugs are commonly illegal, surveys have been a popular tool for data collection for such studies, giving them an indirect advantage of learning more about certain stigmatized behaviours, but also being subject to criticism for relying on self-reporting surveys for such sensitive behaviours (Harrison & Hughes, 1997).

Given the sensitivity of the subject of this research, this method of data collection was the most suitable, as promising privacy and anonymity to the participants would provide a safer and less judgmental environment for them to open up about their journeys and lived experiences. Moreover, during recruitment, potential participants would frequently initially express their willingness to participate in the study if there would be no face-to-face interaction, with a promise of their identities being anonymous. An online survey was the most suitable option as it made participants feel comfortable to complete the survey in privacy without being tracked. Another reason for employing online research was the fact that participants came from a diverse range of locations (please refer to 3.3.b), and face-to-face interviews were not always feasible.

3.4.3 Questionnaire

The questionnaire consisted of 83 items in total (for the full questionnaire, please see Appendix 3). It started off with an information sheet in which the participants were given a brief overview of the research, including information about the nature and the aim of the study, what their participation would mean in practice, inclusion criteria for the research, confidentiality, and contact information for the researchers in case of any problems that might be experienced upon taking part in the study (see 3.7 for more information). The aim of the information sheet was to provide the candidates with sufficient information about the study in order to make an informed decision about taking part in the research. This was followed by the consent form, in which the participants picked from the options 'yes' or 'no' to indicate whether they consented to all items, followed by them signing the date in order to consent and begin with the questionnaire.

The questionnaire then began with six qualitative open-ended questions. The questions were preceded by clear instructions informing participants that they were welcome to type as much as they liked in order to paint a picture of their journey, and that the answer box would expand as they typed (see Appendix 4 for a sample of a participant's qualitative data). The questions asked participants to I) tell their 'MDMA story', II) how they thought MDMA and other drugs all fit in with each other, III) their views of their drug use, IV) how their drugs use had changed, V) how life had changed due to these experiences, and VI) what advice they would give to someone who wanted to cut down or quit MDMA. These questions were an adaptation of items from Hammersley et al., (2002), and were designed by discarding the quantitative aspects and small details in order to have a more open-ended approach. The following table displays the questions and the aim of each one:

QUESTION	AIM
1. Tell me your story (Please tell me the story of your MDMA use from the beginning to now)	To learn and get to know each individual MDMA story, get a deeper understanding of different phases in their lives, as well as learning about reasons for the change in consumption frequency.
2. MDMA and other drugs (This question is about your MDMA use, alcohol, and any other drugs that you were taking. How do you see them all fitting in together?)	To understand polydrug use before, during, and after taking MDMA.
3. We want your views (Looking back, how do you see your drug use? What do you think about it? What role did they or do they play in your life? To what extent do you see yourself as a drug user?)	To understand the role of drugs in one's life according to the participants themselves. To understand the importance of drugs in their life, rather than the common assumption of drugs taking over one's life.
4. How has your drug use changed? (Do you consider yourself to have quit/calmed down? To what extent did you have to do things for your drug use to change?)	To understand the process of cutting down or quitting, if it was conscious choice, and differences or choices made to make these changes.
5. What is your life like now compared to how it was then? (How do you feel MDMA and other drugs have changed you? Tell us the best and worst aspects of your life while using MDMA)	To understand the role that MDMA and other drugs played in participant's lives, the importance and the impact that it has had on them in general, and during MDMA use.
6. What advice would you give? (What would you tell someone who wants to take MDMA? What advice would you give to someone who wants to cut down or quit MDMA?)	To get their advice on trying to cut down/quit MDMA. Understand their unique insights and tips and tricks they have used themselves and would recommend to others.

Table 1. Table of qualitative questions

These questions were followed by a series of demographic questions, which touched on: ethnicity, criminal record, living situation, income, and current and past drug and alcohol use. These questions were adapted from Hammersley et al. (2003) and were treated statistically with the SPSS software. Clear guidelines and instructions were provided for the participants before each question, as it was important to make sure that participants understood their options before answering questions in order to give accurate answers (Lumsden, 2005). The online Research Participation System of the University of Hull

(RPS) was used to produce the questionnaire. A university-based system was preferred and chosen due to its user friendliness as well as assurance of legitimacy and connection to the university when providing a link to the participants. Due to the design of the RPS, each item of each question in the demographic section had to be listed as an individual question, as making a chart was not a possibility in this system at the time of creation. This resulted in the questionnaire consisting of 83 items, a number that was presented before completing the survey, which intimidated some potential participants as they mistook the items for 83 questions. Throughout the data collection period, this issue was raised a few times and had to be explained to individuals, who then normally continued with the completion of the questionnaire.

3.5 Data analysis

3.5.1 Thematic analysis

Thematic analysis allows the researcher to organize the data minimally, and describe it in rich detail (Braun & Clarke, 2006), as well as going further and interpreting different aspects of the research topic (Boyatzis, 1998). The final result of a thematic analysis should illustrate the most prominent patterns of meanings which were in the dataset patterns, which are reached through a systematic and transparent work frame (Joffe, 2012). Thematic analysis was chosen as the tool for analysis as it was seen as the most appropriate, given the advantages such as flexibility, systematic characteristics, as well as the ability to work with the large amount of data present.

Analysis of life stories follows a similar set of procedures to those presented by Strauss and Corbin (2008) for grounded theory methodology (McAdams, 2012). The Life Story Method asks participants to tell a general story of their lives, which is structured into different

episodes by a series of structured questions. It uses multiple methods of data analysis, including the analysis of themes that emerge, analysis of the content of what is written (for example, count of key words), and an analysis of the type of story that has been told by the participants (humorous, tragic, etc.). In this approach, the researcher did not have any answers or solutions, just some ideas from past readings and experiences. The transcriptions of the interviews were carefully read with the aim of context discovery and justification for themes, which were drawn from the text rather than particular word or phrases. In order to discover these, the researcher read the interview transcripts with an open mind, exploring new ideas which were recurrent, surprising, or revealing a central psychological dynamic or issues, hunting for a vast exploratory net, as suggested by Irving (1988).

The research methods for this study were inspired by the Life Story Method, in which data is typically collected by conducting open-ended interviews or written procedures, which guide the participants to tell an autobiography of their lives. The Life Story Method tends to use multiple methods to analyse data. Commonly, it includes an analysis of themes, plots, settings, characters, and scenes. Moreover, it includes an analysis of common and emerging themes, redemption and contamination sequences, analysis of the emotional tone and the type of story, and narrative coherence.

However, this type of analysis was not found suitable for this research, as the stories written by the participants differed vastly in lengths, some being as short as a few paragraphs, while others were a few pages long. This type of analysis was not appropriate, as most stories were not long enough to have the multiple methods of data analysis performed on them; therefore, thematic analysis was chosen as the appropriate method.

The NVivo computer software program was employed in order to assist with organization of the data. Joffe and Yardley (2003) discussed the possible disadvantage of using computer-assisted qualitative data analysis systems (CAQDAS), mentioning that they may decrease the analytical understanding of the texts. However, the same authors point out that using such programs allows researchers to deal with a greater number of interviews, which was the case for this study. NVivo was used for this research as an organizational tool, due its user friendliness.

3.5.2 Analysis steps

Braun and Clarke's (2006) model for the phases of thematic analysis was adapted for this research through the work of Howitt & Cramer (2011):

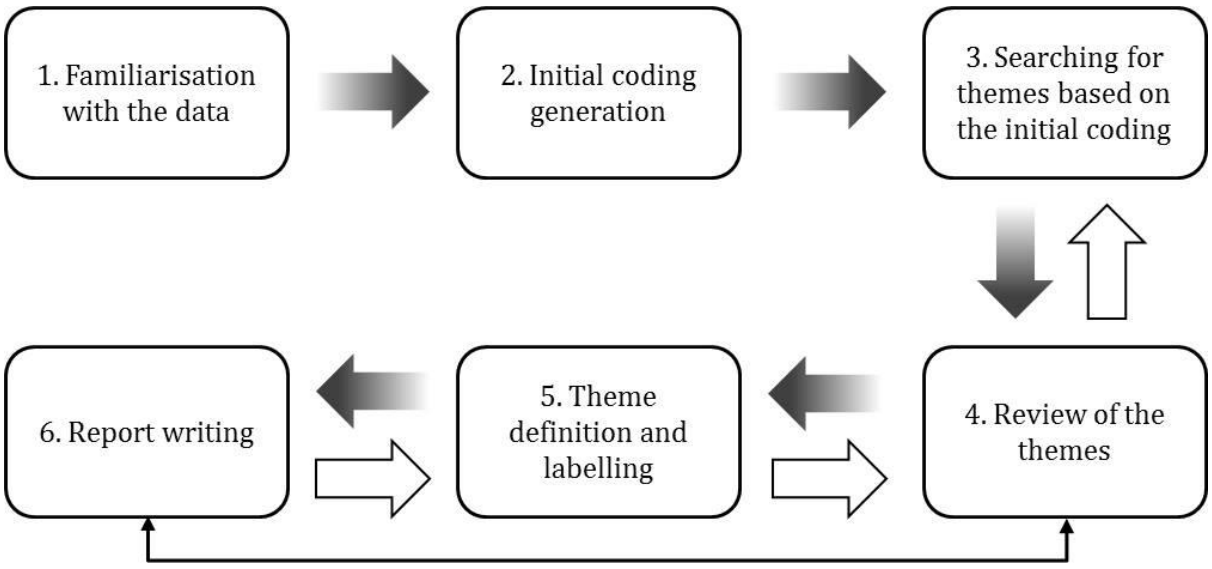


Table 2. Braun and Clarke's (2006) thematic analysis model

1. Familiarisation

It was vital to become extremely familiar with the data, as the data was collected through an online survey and no transcription or in-person interviews were involved. Therefore,

each individual story was read many times in order to gain familiarity with the data. Initial ideas were taken down as notes in this process.

2. Initial coding

Following data familiarization, the analysis started using the six question themes, but material relevant to those themes was also incorporated from other places in the data when appropriate. Afterwards, interesting data was coded in a systematic way across the entire data, as well as collecting the items relevant to each other. This process was used to pinpoint, examine, and record patterns within the data.

3. Searching for themes

Codes were then made into potential themes. A theme is a result of coding, categorizing, and analytical reflection (Saldana, 2012).

4. Reviewing themes

This process was to check if the themes worked in relation to the entire data, as well as the previously coded data, and a thematic map was created through NVivo.

5. Naming themes

Names were developed for these themes to represent sets of codes. These names were based on the main idea that was being mentioned, or a particular phrase that was used by a certain participant, which seemed to get the idea across appropriately.

6. Producing report

As Braun & Clarke (2006) suggest, this is the final opportunity for analysis, involving selection of clear examples, final analysis of extracts, relation of analysis to research

questions and literature, and a presentation of findings report. These steps were taken and the analysis was later illustrated through the ending chapters.

It is important to note that at each stage of the analysis, codes were changed and modified as new ideas were developed.

3.6 Ethics and Confidentiality

Participants provided a very intimate story of their journey with MDMA. The surveys were anonymously filled out online in order to promise the avoidance of any type of exposure that would allow identities to be exposed (see 3.5.2 for a detailed explanation). Special care should always be taken with the collected data, as at times despite good data management, there could still be a breach of confidentiality with the possibility of data leaks and access by a third person to the data (Kraut et al., 2004).

Ethical approval for this research was gained from the ethics committee of the Department of Psychology of the University of Hull on August 12, 2014, based on the BPS code of Ethics (see Appendix 5 for Ethics approval). This research had the risk of making the participants feel emotions such as embarrassment or humiliation due to the fact that they were asked to reflect on their life experiences, which some may find unpleasant. Moreover, some participants may have recounted feelings or events that were upsetting. However, the debrief sheet invited participants who felt upset by the research and wished to seek help to contact the researcher in order to gain advice on how to obtain help that was appropriate for their country, region, and situation. However, no participant contacted the researcher for advice.

3.7 Summary

This chapter has presented the methodology employed in the present study. It began by explaining the philosophical paradigm that underpins the methodology as well as the research methods informed by the Life Story Method (McAdams, 1988, 2008, 2012). Next the sample (inclusion criteria, recruitment, and sample size), research procedure (data collection, online research survey, and questionnaire), data analysis (thematic analysis), and ethics and confidentiality were presented. In the following chapter, we present and discuss the data collected through the survey.

Chapter 4: Results

The following chapter presents the results collected through the online survey. It is divided into two main sections. The first main section, *About the participants*, goes over the demographic data of the participants' sample and some information regarding their drug and alcohol use patterns. The second section, *Qualitative data*, and presents the results obtained from the six open-ended questions. This second section contains the main findings and analysis of the study.

4.1 About the participants

The online survey included a number of quantitative questions, in order to gain a better understanding of some background information about the participants. The quantitative data of the survey is presented in two sections: Demographics and Patterns of drug and alcohol use. The demographic section consists of questions concerning age, gender, ethnicity, levels of education, living situation, with whom the individual lived with while growing up, income, and trouble with the law. Patterns of drug and alcohol use includes questions regarding patterns of drug and alcohol use in general, as well as substance specific questions mostly concentrated on frequency of use as well as the age when first use started. The data are explained, and presented by tables, which include number of the participants and overall percentages identified for each category, in order to deliver a clear illustration of the data.

4.1.1 Demographics

The sample consisted of 104 individuals, with 18 (17%) females and 86 (83%) males. Age range was from 17-51, with an average age of 26. Participants identified as various

different racial backgrounds, with most commonly, 34% identified as Other white background (such as American, Australian, and German), followed by 33% identifying as English/Welsh/Scottish/Northern Irish/British, Other Asian background (most commonly Sri Lankan), and 7% as Other ethnic group (most commonly Persian).

Education levels achieved by the participants were relatively concentrated on the higher levels; 56 (55%) of the participants had a university or college degree, followed by 15 (14%) having some A levels, and 11 (11%) having a postgraduate degree. Majority of the participants earned between £301 to £450 a week (25%), followed by 20% earning less than £150 a week, and 19% earning £151 to £300 a week. The following table demonstrates the above information in more detail:

	N	**%**
Age		
17-20	20	19.2
21-30	65	62.3
31-40	12	11.6
41-50	6	6
51-60	1	1
Gender		
Female	18	17.3
Male	86	82.7
Ethnicity		
English/Welsh/Scottish/Northern Irish/British	34	32.7
Irish	2	1.9
Other white background	43	41.3
White and Asian	4	3.8
Other mixed or multiple ethnic background	1	1
Chinese	3	2.9
Other Asian background	8	7.7
African	1	1
Caribbean	1	1
Other ethnic group	7	6.7
Education		
None	5	4.8
Some GCSEs but no A levels	4	3.8
Some A levels	15	14.4
Some vocational qualifications	7	6.7
University or college degree	57	54.8
Postgraduate degree	11	10.6
Professional qualifications	5	4.8

Earnings		
Less than £150/week	21	20.2
£151-£300/week	20	19.2
£301-£450/week	26	25
£451-£600/week	16	15.4
£601-£750/week	5	4.8
More than £750/week	16	15.4

Table 3. Demographics of participants

Most participants grew up with both parents (51%), followed by 20% who grew up with their mother only. Only one person stated having grown up in foster home or care. Majority of participants lived in shared housing (36%), and the rest mostly either lived at home with parents or other people who raised them (21%), by themselves in a house or a flat (17%), or with a partner in a flat or a house (17%). When asked about being in trouble with the law, majority of the participants (46%) reported having had no trouble, followed by 18% who reported having had a caution or a warning, and 13% reported having been arrested but with no consequence. Only 3% reported having had a prison sentence. Below is a more detailed presentation of the mentioned information.

	N	**%**
Who grew up with		
Both parents	53	51
Mother only	21	20.2
Father only	5	4.8
Mother and step-father	3	2.9
Father and step-mother	2	1.9
Relatives, not parents	2	1.9
Other people	17	16.3
Foster home or care	1	1
Living arrangements now		
At home with parents or other people who raised them	22	21.2
By him/herself in a flat/house	21	20.2
With partner in a flat/house	18	17.3
Shared housing	36	34.6
Hostel/halls of residence/residential community	7	6.7
Homeless	0	0
Trouble with the law		
No trouble	48	46.2
Arrested but no consequence	13	12.5
Caution or warning	19	18.3

Fine	12	11.5
Community sentence	9	8.7
Prison sentence	3	2.9

Table 4. Other information about the participants

4.1.3 Drug and alcohol use questions

This set of questions asked the participants about their drug and alcohol use patterns. Participants were asked to identify their favourite drug. The most popular drug reported by the participants was Cannabis (at 27%), followed by MDMA (25%), and Alcohol (13%). Most of the participants stated not having used MDMA in the past 12 months (28%), followed by 26% who stated having used it less than once a month in the last 12 months. In regards to Cannabis, 32% of the participants stated having used it more than twice a week in the last 12 months, followed by 16% stating about once a month, and 16% stating not having used it at all in the past 12 months. When asked about alcohol, 30% of the participants stated having used it once or twice a week, followed by a 20% who stated that they have used it about twice a month in the last 12 months. Moreover, in regards to the previously mentioned top three favourite drugs reported by the participants, the age of first use were analysed for each drug. MDMA's minimum age of first use was reported at 14, and maximum at 44 (with a mean of 19). Cannabis had a minimum of 11 for first time use, and a maximum of 23 (with a mean of 16). Alcohol's first use minimum age was reported as 8, and maximum at 24 (with a mean of 15). The following tables demonstrate the participants' favourite drugs, number of uses in the past 12 months, as well as the age of first use:

	N	**%**
Favourite drug		
Acid/LSD	8	7.7
Alcohol	13	12.5
Amphetamine/Speed	2	2

Cannabis	28	26.9
Cocaine	5	4.8
Etizolam	1	1
MDMA	26	25
Mescaline	1	1
Mushrooms	2	1.9
Oxycodone	1	1
Various	15	14.4

Table 5. Favourite drug

	MDMA		**Cannabis**		**Alcohol**	
	N	**%**	**N**	**%**	**N**	**%**
Nº times used in past 12 months						
Never	29	27.9	17	16.3	3	2.9
Once	13	12.5	7	6.7	1	1
2-5 days (less than once a month)	27	26	11	10.6	16	15.4
6-12 days (about once a month)	11	10.6	17	16.3	13	12.5
13-24 days (about twice a month)	13	12.5	4	3.8	21	20.2
25-100 days (once or twice a week)	10	9.6	15	14.4	31	29.8
101-365 days (more than twice a week)	1	1	33	31.7	19	18.3

Table 6. Number of times used in the past 12 months

	Minimum	**Maximum**	**Mean**
Age of first use			
MDMA	14	44	19
Cannabis	11	23	16
Alcohol	8	24	15

Table 7. Age of first use

In regards to the 26 individuals who had stated MDMA as their favourite drug, eight questions were analysed. When asked if they think that they are addicted or dependent on their MDMA, most people (17) said not at all, followed by 5 individuals who said hardly. 22 individuals stated that their MDMA use is not at all out of control, followed by 2 who said it hardly is out of control. 25 individuals said that the prospect of missing a dose of their favourite drug not at all makes them feel anxious or worried, while 1 said that it worries them a lot. When asked if they were worried about their use of MDMA, 16 people said not at all, while 5 said that they are a little worried. Most people (20 individuals) stated

that they do not wish they could stop and 19 individuals stated they do not find it difficult going without MDMA. 24 of the individuals stated that they never steal or commit crime to buy MDMA, and 25 of this group stated that the prospect of missing a dose does not make them anxious or worried at all. The mentioned eight questions regarding to MDMA use are demonstrated in Table 8:

Participants who stated that MDMA is their favourite drug (N=26)	**Not at all**	**Hardly**	**A little**	**A lot**
Do you think you are addicted or dependent	17	5	3	1
Do you think your use is out of control	22	2	1	1
Does missing a dose make you anxious or worried	25	0	0	1
Do you worry about your use of the drug	16	3	5	2
Do you wish you could stop	20	2	3	1
How difficult do you find it to go without the drug	19	3	3	1
Do you steal or commit crime to buy the drug	24	2	0	0
Does the prospect of missing dose make you anxious or worried	25	0	0	1

Table 8. Questions regarding those who chose MDMA as their favourite drug (N=26)

In summary, participants came from a diverse range of ethnicities. Education and salary levels were mostly concentrated on the higher range of our scales, and most participants grew up with both parents and now lived with housemates. Most participants chose Cannabis, MDMA, and Alcohol as their favourite drug, and Alcohol and Cannabis were commonly still being used on the weekly basis, whereas MDMA was not being used as often. In general, participants did not express significance levels of worry or lack of control in regards to the use and dependency to MDMA. This discussion now turns to the main results, that are data collected from the open-ended questions.

4.2 Qualitative data

The survey included six open-ended questions, which were designed to understand each individual's MDMA story, how they think MDMA and other drugs fit in with each other, their views of their drug use, how their drug use has changed, how life has changed due to these experiences, and what advice they would give to someone who wants to try, or would like to cut-down or quit their MDMA use. The questions were designed in such a way as to lead the participants to tell a story about their individual journey with MDMA and to get an overall image and a deeper understanding of what they thought when they looked back over these experiences. The questions in the survey were:

1. Tell me your story (Please tell me the story of your MDMA use from the beginning to now)
2. MDMA and other drugs (This question is about your MDMA use, alcohol, and any other drugs that you were taking. How do you see them all fitting in together?)
3. We want your views (Looking back, how do you see your drug use? What do you think about it? What role did they or do they play in your life? To what extent do you see yourself as a drug user?)
4. How has your drug use changed? (Do you consider yourself to have quit/calm down? To what extent did you have to do things for your drug use to change?)
5. What is your life like now compared to how it was then? (How do you feel MDMA and other drugs have changed you? Tell us the best and worst aspects of your life while using MDMA)
6. What advice would you give? (What would you tell someone who wants to take MDMA? What advice would you give to someone who wants to cut down or quit MDMA?)

The data was collected through the Research Participation System (RPS) of the University of Hull website. It was later extracted into an MS-Excel file, where the data was transferred into the Nvivo software. The Nvivo software was chosen in order to ensure organisation, and to make more accessible and have a better overview and easier access due to the large quantity of data. A total of 104 participants completed the survey. The number was originally 107; however, two questionnaires were identified as insincere: one having been completed with irrelevant and humorous answers, and the other was a test questionnaire conducted by an administrator of a particular drug-related forum in order to ensure the validity of the questionnaire for publication in the forum. Moreover, an additional questionnaire was a duplicate, which was due to a bug in the system at the time and was removed from the data. The results are organized and explained by the stages that were taken in order to analyse the data.

4.2.1 Identifying questions, themes, subthemes, and items

The results were organized by questions, themes, subthemes, and sub-subthemes. Initially, each individual story was read multiple times in order to get a clear understanding and feel of each individual journey and the experiences. The analysis began using the original six question themes, however, the material relevant to those themes was also incorporated from other places in the data when appropriate. This process made the data much more tangible and manageable as with the large number of participants, this was identified as the best first step in order to make sure different stages of each story were not missed. This process was helpful particularly after reading each individual story as it put each individual section of participants' story in perspective, and in an organized manner in which the data was more accessible and easier to break down and understand without being distracted from the next

section. Moreover, questions helped create and categorise the rest of the information within the appropriate ideas.

The six questions were later analysed and categorised into themes, subthemes, and sub-subthemes through thematic analysis. Themes, subthemes, and sub-subthemes were created at this stage in order to highlight the unique components that were present in each individual's experience according to the questions asked. This process helped in regards to data organization and finding a clearer understanding of each individual story within each individual question. The analysis of each individual question produced a variety of themes, subthemes, and sub-subthemes. The data was divided accordingly and placed in individual Nvivo folders after identifying common themes and subthemes within each question. All of the data was fitted into these particular categories as they were formed while reading through the data. (See Table 3 for a summary of the categories). In addition, two overarching themes of Harm reduction and Function and pleasure enhancement were identified, which run through all the questions.

QUESTIONS	THEMES	SUBTHEMES
1.Journey	Starting	Age The experience a. Magical b. Neutral or bad Reasons a. Music b. Therapeutic c. Curiosity or social pressure d. Other
	Frequent use	Dosage and frequency Take a break The experience What happened a. Progressing to more outings b. Lifestyle change c. Therapeutic d. Addiction e. Other
	Quitting/cutting down	What did you do a. Quit b. Cut down

		Why a. Bad experience b. Change c. Quality dropping d. Not the same anymore e. Progressively with time f. Health problems g. Other
2.Polydrug use	Mixing Not mixing Unclear	
3. Role of drugs during consumption period	Self-identification	Experimental/experience Addiction or abuse Overindulgence Drug user Mindful Normal/casual Recreational and fun Other
	Role drugs played in the person's life	Positive applications Negatives
4. Changes in drug use pattern	What	Quit Cut down Unclear
	How	Change Naturally Personal and social identity Just stopped Professional help
	Why	Change Growing out of it Not the same anymore a. Effects b. Adulteration Bad experience Family or loved ones
5. Changes in the user's life	Positive applications	Appreciation for being sober Self-growth Euphoria and happiness Feelings and emotions Fun Life and mind changing Music appreciation Sociability and bonding Therapeutic
	Negative	Negative feelings and side effects Bad highs, comedowns, and hangovers Addiction Family Other
	Negatives compared with positives	
	Neutral	
6. Advice	Trying	Right people and environment Don't Don't mix Dosage

	Educate Know what you are getting Moderation Right state of mind Stay hydrated Other
Quit/cut down	Change a. Associated scenes b. Hobby or replacement Reason Just stop Professional help Taper down/special occasions Other

Table 9. Summary of results

4.2.2 Data presentation

Each question, theme, subtheme, and sub-subtheme is further discussed, and accompanied by direct quotations from the participants in order to highlight and personalise the data. The overarching themes will be discussed in the discussion chapter. The data is grouped first by questions, following by related themes, subthemes, or sub-subthemes. Each section focuses on the unique components mentioned by participants. Participants are referred to by their unique and anonymous participation number, which was assigned by the RPS system in respect to the number of completed surveys. Direct quotations from the participants' questionnaire have been edited strictly for obvious spelling clarity only. Some quotes are repeated because they are relevant to more than one section. The number of references coded and the percentage of data in respect to the coverage of the entire data is given for each item. Different themes, subthemes, and sub-subthemes are presented with a reference number and a coverage percentage in order for the reader to grasp an understanding of the proportion of participants in total mentioning particular themes, subthemes, and sub-subthemes. Reference refers to the number of participants who fell into the following category, and coverage is the percentage of the total data coded to the presented category.

1. Journey

Question one asked individuals to tell the story of their MDMA use from the beginning to now. The responses are presented in three sections, on the basis of participants commonly referring to three different time phases while talking about their journeys: Starting MDMA use, frequent use, and quitting or cutting down. Each individual's answer was fitted in accordingly to these different sections. Some individuals had only chosen to speak about one or two of these time phases, in which case, the answers were still placed in the proper category accordingly. Moreover, due to individual differences in story telling techniques, the three new categories created contain different amounts of data coverage and different numbers of references.

1.1 Starting (98 references, coverage 4.93%)

Participants commonly began telling their stories by explaining the start of their MDMA consumption. Stories were told differently: some had chosen to explain the age and the setting in which they tried the substance for the first time, some spoke about the experience they had while using the substance for the first time, some stated the reasoning and influences for taking it for the first time, some spoke of the events leading to the decision to try the drug, and others included a combination of all of these aspects. Participant 1 explained the point of starting her MDMA journey by explaining the age when it first happened as well as the emotions and circumstances that led to it:

> *The first time I did MDMA I was about 14 or 15. My boyfriend at the time was 16 and his friends all wanted to try MDMA; his sister was an avid MDMA user who had lots of friends seemed very happy and had lots of friends. At that time in my life*

the main thing I was worrying about was making friends. So, as she was all I knew of the drug culture I was fine with ending up like that. (Participant 1)

As mentioned, this participant has started their story by giving the approximate age and the reasons they felt that lead them to start MDMA use. Others explained their very first experience and their feelings towards it when looking back such as participant 53:

In the year 2000; while serving in the US military; some very nice people introduced me to MDMA. I was a clean slate; having no preconceived notions or opinions. Immediately; the drug changed for the better my entire perspective on reality and my place within it. I suddenly understood that I could be a happy person; that I was in control of my emotions; and that I needed no reason to have joy in my life. For the first time; at age 19; I felt good about the person I was. (Participant 53)

Other participants wrote more of their emotional and physical experience while taking the drug for the first time, such as participant 58:

I saw a Newsweek article I saw labelled "getting high on ecstasy". It was many years later: in 1989: when I obtained my first powder. Me and a friend took it; and loved it. I fell in love with her; we were all so happy: and talked fast. My eyes were completely dilated and black. We kissed; then stopped. I still pined for that lady for many years: but that is another story. The next day: I felt like I came down

gradually from a plateau. Still good: but a bit slow. I really loved it. (Participant 58)

1.1.1 Age (42 references, 0.11% coverage)

It was common for participants to mention the age when they tried MDMA for the first time. Although not all participants stated their age, there seemed to be a common trend among the ones that did. 15-19 was the most common age reported for taking the drug for the first time, with the exception of one particular participant who stated 44 years old as the age when he/she began using MDMA.

1.1.2 The experience

When speaking of the start of their MDMA journey, participants commonly told the story of their first experience. Individuals often explained the experience in great detail, recalling different feelings, senses, sounds and other detailed factors, which were experienced. These experiences were categorized into two major themes: magical first experience and neutral or bad first experience.

1.1.2.1 Magical first experience (21 references, 0.52% coverage)

Some participants spoke about their first experience as a positive one. The term magical was selected as the name of this category due to the common language that was used when describing these experiences, and the terms used to describe the feelings felt while going through this experience which commonly painted a magical picture in the reader's mind. Music plays a common role in the majority of these experiences. People commonly stated

their newly developed appreciation for the dance music, as well as feeling and understanding it in a different manner.

It was also common for people to explain their first experience in details, explaining the sensations that they were experiencing, with an emphasis on the positive aspects of the hearing sense and the change in appreciation of music. When first experiences were explained, they were almost all described as a positive one. This participant goes on to explain the effect on music, touch, and interaction:

> *I felt as though I could feel the bass from the speakers inside of my body. My pupils widened and felt very euphoric and extremely happy. The simplest touch felt like a deep tissue massage and every single conversation that I had seem to last for hours and each person I spoke with instantly became my best friend. (Participant 12)*

Others went on to explain their experience infused with descriptions of therapeutic benefits and the emotional journey they went through during the experience. This participant's description is an example of this:

> *The experience was amazing. I was cautious and only took a ½ of a dose. The experience changed my perspective in life ever since. I never felt so care free; it doesn't matter what people think. Even though I'm with close friends: there is always a barrier you feel: when out with people. But after taking MDMA I just stopped caring. And even to this day: I never feel uncomfortable with myself. (Participant 104)*

1.1.2.2 Neutral or bad first experience (references 2, 0.07% coverage)

Two participants had neutral or bad experiences during the beginning of their MDMA journey. This category was named neutral or bad experiences as both of the examples contain mixed information. Reference 65 explained the negative side effects that were experienced, alongside some positive aspects. In this particular example the participant is explaining their second time taking MDMA, as they feel like their first time was not a real experience due to the fact that they were mixing MDMA with other substances on their first time. Therefore, maybe the full affects were not experienced. This particular participant explained their second experience as follows:

> *This time I was truly rolling hard; at first when it hit me I felt paranoid. Had to get away from the crowd and sit down for a bit; when I was heading to sit on the bench; I was feeling amazing I was hugging everyone and dancing. I felt happy. After a 5min of sitting down and collect myself I was feeling normal and ready to have fun and explore. The comedown was awful; it lasted about a week and a half I felt dizzy; sleep; and paranoid. (Participant 65)*

This participant has spoken about the experience starting as a negative one, progressing to feeling positivity, and continuing with a negative comedown. A similar trend could be seen in the story of the other participant in this category, who started out positive but ended with a negative period while in the come down period:

> *I felt silly and happy while on this pill; but pretty terrible for the rest of the weekend afterwards and decided drugs were stupid. (Participant 82)*

1.1.3 Reasons for starting

Most participants reported the different reasons for engaging their first doses of MDMA. Participants mentioned factors such as going to a music event (such as festivals, raves, clubs, or concerts), therapeutic reasons, curiosity and social temptations, being in particular stages in life such as finishing high school or entering university as the main factors for trying MDMA for the first time. The data was classified into four different themes that were most commonly emerged.

1.1.3.1 Music and music event (44 references, 1.36% coverage)

Going to raves and festivals was one of the main reasons people mentioned as a motivator for trying MDMA for the first time. Discovering the 'rave scene' and seeing how well they go with each other was often mentioned. Participants often expressed their love and appreciation for music increasing after their initial experience with taking MDMA at a music event. Experiencing music in a much deeper manner, and finding new love for certain types of music was a key factor mentioned, which was remembered well and positively written about by the participants. Such positive experiences seemed to play a big role in the motivation of regular use post the initial trials. In summary, from all the participants who chose to relate the reasons involved in the start of their MDMA use, the majority referred to music and music related events. Participants, from various backgrounds often referred to 'the scene' and the popularity of the drug within it. This particular participant speaks of Ecstasy and its popularity within the club scene in San Francisco:

Ecstasy was very popular in SF in the club scene; I met some people that were really into it so we would take it on the weekends. (Participant 7)

Another participant commented on the popularity of the 'scene' and the connection of MDMA in the late 90s:

I first discovered MDMA in 1998 when I got into the underground music scene in my area. At the time the scene was absolutely blowing up. (Participant 34)

Different music events, festivals, concerts, and clubs were often mentioned as the locational gateways in order to access and explore the substance. They were often described as the ideal playground in which taking MDMA is a normal act to indulge in. This participant explains the experience, which they count as their first time, at an EDM concert:

I count my first real 'roll' as the time my friends and I tried MDMA (crystal form in capsules) at Swedish House Mafia's one last tour 3 years ago. If was my first rave and I have tried that ecstasy tablet in high school; we when my friend asked me if I wanted to roll with them; I said yes; thinking that it would just be a fun time. I had no idea that night would change my life. (Participant 99).

1.1.3.2 Therapeutic (6 references, 0.07% coverage)

This category was formed due to factors, which can be identified as therapeutic advantages, which individuals stated as their reasons for starting their MDMA use. Factors such as using the substance in order to become less shy, using it as a tool to express emotions that

were buried deep within are often mentioned as reasons to use MDMA as a therapeutic tool to escape and or change these feelings and characteristics. An example of this can be seen in the following participant's story. The following participant focused on explaining how the substance aided them in surfacing emotions, which had been suppressed due to certain cultural factors:

> *The Iranian culture is one of emotional suppression and Islamic fundamentalism; or at least it seems on the surface. The subdued emotions found solace through the chemicals and surfaced; causing me to smile yet cry at the same time. (Participant 18)*

The substance being used as a medicine and a tool in order to help certain issues was a recurrent theme in this category. The following participant is another example of someone who chose to use MDMA solely based on the healing characteristics that would alleviate their current problems:

> *I wasn't aware that MDMA had such healing and psychedelic properties; until a friend told me about it. "This stuff could really help you with your trauma; it's being studied as a medicine for this sort of thing." Hey; I need something: I'll give it a shot. (Participant 43)*

1.1.3.3 Curiosity and social temptations (20 references, 0.47% coverage)

Participants often mentioned curiosity and social temptation as reasons for starting their MDMA journey. Becoming exposed to individuals and situations, where the drug was

commonly in use and becoming curious, for example a result of a change in lifestyle such as moving to university or becoming independent or getting into a new relationship where the new partner was a user also increased curiosity. The following participant describes growing curiosity over the years as they witnessed their fellow peers experiment with the drug, and finally trying the drug once the chance was given, although they acknowledge that it was not a typical experience:

> *In the case of MDMA; it had been in my periphery for a few years; a couple of people I'd gone to high school with had tried it. In second year a lot of people I lived with had been trying it; and really enjoying themselves. My friend came back after a night out with one bomb left; and decided he was going to sell it. My curiosity had been peaked at this point so I said I'd buy it for 3 pounds. I took it in my room; on my own. I realise this an atypical experience. (Participant 9)*

Participant 53 from this category was introduced in a different setting than most participants:

> *In the year 2000; while serving in the US military; some very nice people introduced me to MDMA. (Participant 53)*

Participants often stated friends and relationships as a common factor in their choice in trying the drug, however, some made a clear point of stating that although the initial exposure and introduction was made through being around a certain friend or friends, choosing to try the drug was not forced. The following is an example:

> *I had decided to try it because I could see my friends doing it and they looked like they were having a really good time; it wasn't that anybody coerced or forced me to it. (Participant 14)*

1.1.3.4 Other (4 references, 0.07% coverage)

This category was based on participants who had stated factors that did not fit into any of the previous common categories as their reasons for starting their MDMA use. It is important to note that this category also includes participants whose reasons for starting were somewhat unclear. An example of this is the following participant whose story is focused on preparation before and after their first MDMA use rather than reasons leading to the consumption, which was the more usual pattern seen in participants' stories. People commonly mentioned doing research pre-taking it, taking recommended supplements and such and taking the drug with people who have done it before. However, this particular participants' starting story was mainly focused on the preparation and the aftercare:

> *I made sure to research prior to taking the MDMA and preloaded with chelated magnesium: vitamin C; grape seed extract; R-ALA-alpha lipoic acid and after the experience took 5-htp along with the grape seed extract 24 hours after it had ended fully. (Participant 88)*

Two other participants in this category cited selling drugs as reasons for starting their MDMA use:

I started rolling when a good friend picked up a large amount of MDMA. I was into making a little extra money at the time; and I took half of what had off of his hands. (Participant 86)

1.2 Frequent use (93 references, coverage 5.91%)

Most stories told by participants progressed to the 'frequent use' stage. This was typically the stage post the 'starting' point, in which participants explained the process of becoming a frequent MDMA user. Participants recounted their transition into becoming a frequent user in different ways; some choose to speak about reasons and events leading to the transition, others about the dosage and the regularity of consumption, and some spoke about the experience and feelings experienced while being in this stage of their journey. This is an example of a participant describing their experience of the transition from trying MDMA use to becoming a frequent user in terms of events that were involved in the frequent use:

For the most part after that my experiences with MDMA were pretty standard: I would take it at house parties: club night. Any social gathering was a good reason to do MDMA. (Participant 9).

Other participants explained the experience they had looking back at this part of their journey. Participant 27 explained their experience while touching on subjects such as the purity of the substance, addiction, and possible side effects that may have been due to MDMA use:

> *After that festival, I started using MDMA fairly often. At first, I didn't understand the problem it could have on my health. I was also taking methylone most of the time, because my MDMA wasn't tested. I'll try and give an accurate timeline: The second time I did MDMA (probably methylone) was 3 weeks later. It quickly spiraled out of control after that. A year after the festival, I had done MDMA or methylone about 16 times. I went to 4 multi-day festivals in that time span, which was part of the reason (I count each day of the festival as one time). I continued using MDMA/methylone heavily, until it just didn't feel good anymore. I was definitely addicted, as were my friends, but no one said anything. We were all popular kids in college, well known, had good grades, all graduated, etc. We just loved to party and do as many drugs as possible. I definitely was depressed at one point, but it was also right after I graduated college so that could be the main reason why. (Participant 27).*

As previously mentioned, each individual journey was unique, however, there were many common themes witnessed amongst them. The following are the most common factors, which were frequently mentioned by most participants while describing the 'frequent use' phase of their journey.

1.2.1 Dosage and frequency (42 references, 1.15% coverage)

Participants often explained the dosage or the frequency of their MDMA consumption while describing the frequent use stage. Dosage and frequency of MDMA use were described in a variety of different ways, such as dosage in terms of mg or number of pills consumed within a night, within a period of time, or during each session. Some participants

described their usage in terms of an overall view, either focusing on the dosage or the frequency and duration of consumption. Moreover, participants typically regarded use as multiple times a year. The following is an example of a participant who wrote about their frequency of consumption:

> *I have used MDMA every few weekends over the course of the last two years. (Participant 49)*

Other participants described their experience in terms of number of pills taken per event and frequency of these events. The following participant describes their experience as:

> *…and then found what was called 'white doves'. Myself and a few friends took this almost weekly for a good half a year, taking roughly 2 per evening. (Participant 23)*

More detailed explanations (such as the following by participant 24), explained consumption in terms of number of pills, dosage of MDMA in terms of mg, periods of consumption, and frequency of consumption:

> *Over a period of roughly three years I ingested MDMA in tablet form semi-regularly (4-5 times per year). I did not use on any regular basis but I did often use in large quantities: sometimes for multiple days in a row. I would say most of my use did amount to binges.*

The participant went on to explain:

> *Over a period of 14 months I used these substances on average every 4 weeks, often more. I was aware that such patterns of usage entailed significant risk of physical harm. "My usage was on average ~350 mg MDMA or ~250 mg MDA in a night. The maximum dosages used in a single session were ~650 mg MDMA and ~550 MDA respectively. (Participant 24)*

Although dosage and frequency were frequently mentioned when describing the period of frequent use in their journeys, participants described these details in various different ways. Moreover, participants chose to include a diverse range of information in terms of their dosage and frequency of MDMA consumption. Furthermore, frequent use consisted of a diverse range of quantity.

1.2.2 The experience (19 references, 0.58% coverage)

This section was created in order to look at the experiences described in the phase of frequent MDMA use of individual journeys as a whole, and to get a deeper understanding and a mental image of these stories. It is to further explore and compare different experiences during this period of the journeys. These experiences are typically described in terms of feelings felt, factors experienced, activities taken part in, or events or a particular event that took place during the time frequent MDMA use. Moreover, these experiences were mostly described as happening during the MDMA consumption, although a few referred to pre- or post-usage. Experiences differed widely in content and characteristics, however three main factors were commonly included: feelings experienced, activities taken part in, and an overall view of the experience. Various feelings were reported being felt,

with a few of the most common being positivity, love, creativity, and an appreciation for music. People reported staying in, raving, writing music, meditating, listening to music, dancing, and having sex as activities that they took part in. Overall most participants mentioned having a good time and enjoying themselves. Although the majority of participants having an overall positive tone while talking about these experiences, three participants described negative experiences. One particular participant mentioned having a bad experience and overdosing due to the surprising presence of the police at the club, while another participant reported noticing tangible consequences such as altered cognition, and another participant spoke about the frequent raving caused alienation from their family and friends who did not rave, as well as having to get a job to be able to afford the lifestyle:

> *I got distant from my family and any friends who didn't rave. I was spending all my money on these events, and once the weekend came, everyone knew where I would be. I ended up getting a job solely to fund my drug habit, and I continued living this lifestyle. (Participant 46)*

The next example is a participant who spoke about how they spent their days and nights during this phase of their life. They explained how their days were filled with polydrug use while engaging in activities such as meditation, music, and reading. They also compared what MDMA was to them at the time same with what caffeine, alcohol, or cannabis would be to some people, calling it their 'meditation aid':

> *My days were filled with MDMA/MDA/methylone use (whatever I could get my hands on), and I'd meditate, listen to music, read books, and then at night I'd go*

into DMT world. People are often shocked to hear how much MDMA I got away with taking. I never had a bad reaction to it. It was my meditation aid, my regular drug, like how other people use caffeine, alcohol, and weed. (Participant 43)

Another participant described their experience in terms of what it did for them and how it made them feel, as well as their views on abuse:

Overall, it's strengthened my friendships, made me a happier person with more positive loving attitude towards life and at no point I felt like abusing it. (Participant 88)

The next example is a participant who told the story of the activities that they would take part in while using MDMA. They wrote about staying in, being creative, writing music and many others:

We typically stayed in rather than went clubbing as many did. We were very creative, writing music and chatting and hugging and laughing. Sometimes cooking and sometimes getting a friend to drive us around the city.

They continued:

We were able to do some strange things like move our eyes independently (we all eventually managed to do this by explaining how to each other). While in this state and looking at each other the first friend said that they could see colours coming

from the other friends. We took this as an aura. We decided not to state what colours we all saw but would write down the colours we saw on each other and test our answers. There were 4 people in our group and we all saw the same colours in each person. The only difference being one would write yellow and the other to write gold, or one wrote green and another a bright green. (Participant 23)

1.2.3 What happened

Participants mentioned a number of factors that contributed to, and marked a turning point in their transition from their initial experiences to becoming frequent users. These factors included: lifestyle change, therapeutic, addiction and lack of self-control, and progressing to more outings, such as attending raves, clubs, festivals, and social events more frequently. Below is a further discussion of each of these individual items.

1.2.3.1 Lifestyle change (12 references, 0.44% coverage)

This category refers to some participants who mentioned a lifestyle change contributing to this phase of their lives. A lifestyle change refers to moving (to a different house or location), going to university, new relationships, or new situations resulting a newfound exposure to MDMA. Participant 1 described their progression to frequent use taking place as they moved to a 'drug house':

After that I started doing MDMA more I moved out of my parents' house into a drug house. A run down 2 bedroom apartment filled with bed bugs, drugs, and people always getting high. There was about 4 or 5 of us who lived there. (Participant 1)

Another participant wrote about moving to university being a contributing factor to the increase in their MDMA consumption:

> *Moving to university I increased the usage of it. (Participant 13)*

The next example is someone who lived with someone who was a habitual user of MDMA:

> *I lived with a girl for a while who loved to trip and roll all the time too, so it became known as the candy flipping house. (Participant 43)*

Another participant mentioned getting a new job exposing them to various different music festivals and the 'MDMA scene':

> *In the summer of 2011 I got a summer job as a crew member for a food booth that traveled to different music festival like Coachella, Bonaroo, Lightning in a Bottle, Earth dance, Snow Globe and Oregon County Fair. This again exposed me to the MDMA scene, and although I was working I would party afterwards with many chemicals, including hallucinogens and MDMA. (Participant 18)*

1.2.3.2 Therapeutic (9 references, 0.20% coverage)

When telling their stories about the phase of frequent MDMA use, some participants referred to therapeutic aspects and benefits as a motive or a big part of their story when they explained this phase, a factor which played a part in the desire for continued and frequent use post the starting phase. The following example is a participant who explained

having feelings of pure love and being blessed, and that the world is a good place in general through MDMA, feelings that were stated to have had permanent positive effects:

> *After that first night I felt like everything was going to be ok. I felt pure love for weeks after, feeling blessed that I attained that night in heaven. I had to dance anytime I heard any type of electronic music because the memory of the emotions I felt on MDMA would still affect me, and would very easily get emotional (happy) in the days after I used MDMA, things like listening to music or looking at a tree in the wind still gave me part of that beautiful feeling, I felt like the world was good, and that I am lucky to be able to have the experience and realizations I've had, because MDMA has permanently moved my soul. I was hooked. (Participant 57)*

The next participant described using MDMA in solitude as a form of meditation and alone time:

> *I would do it by myself and meditate, write in my notebook, listen to music, or sometimes just got about my day, I was never a "clubber". I've never used it this way, and it's not so much my scene. I just love MDMA. (Participant 43)*

Another participant spoke about using MDMA as a crutch while going through depression, explaining how it made them feel comfortable in their own skin and it being a beneficial choice at time:

I was 26, this is when Molly came into my life. I was living with 3 girls at the time, one had a boyfriend that sold molly. As soon as I heard that I was excited. Depression was still a part of my life so getting back to a good feeling was a welcomed crutch.

They continued later:

I know I abused MDMA when I was young and dumb but I actually think it saved me. Helped me open and be comfortable in my skin. Even now after not taking it some songs will give me that feeling for a moment here and there. Sad to say but the MDMA was the single most beneficial choice I made in my younger years. I can blend in in society when needed because I know how to pretend I'm a happy extroverted person like most of the world. (Participant 47)

1.2.3.3 Addiction and lack of self-control (5 references, 0.23% coverage)

A few participants referred to addiction and lack of self-control when telling the story of the frequent use phase of their lives. It is important to note that most participants in this subtheme (addiction and lack of self-control) commonly mentioned polydrug use. Below is an example of a participant who explained their experience of going through health problems linked to MDMA use, while acknowledging an addiction to it, explaining his/her love for the music and the vibes, and having found him/herself through it:

I was disregarding warnings about brain damage and long-term effects of molly, and I was losing weight at extremely unhealthy pace. I remember constantly being

depressed, and I got sick often. I would have stomach problems and be unable to eat, and I started getting migraines. My grades were turning to shit. Yet I couldn't stop. I was honestly addicted. I loved the music, I loved dancing with my friends, and loved the vibes. I felt I had truly found myself. (Participant 46)

The following participant spoke about having an addiction to being high at a certain period of time frame, while mentioning their polydrug use:

I was addicted to being high, and wasn't sober, on a mix of MDMA, shrooms, codeine, ecstasy, alcohol, weed, clonazepam, zopliclone, vyvanse, Ritalin, concert, etc., from September to November 20th. (Participant 55)

The next participant similarly mentioned their polydrug use and being addicted, as well as the love for partying and being experimental with drugs at the time:

I continued using MDMA/methylone heavily, until it just didn't feel good anymore. I was definitely addicted, as were my friends, but no one said anything. We were all popular kids in college, well known, had good grades, all graduated, etc. We just loved to party and do as many drugs as possible. I definitely was depressed at one point, but I was also right after I graduated college so that could be the main reason why. (Participant 27)

1.2.3.4 Progressing to more outings (23 references, 0.94% coverage)

Music related events such as concerts, raves, clubs, and social gatherings were commonly mentioned during the frequent use stage of the MDMA journey. Individuals reported progressively attending more outings and events associated with MDMA use. Participants commonly mentioned this change as they told their stories of shifting towards more frequent use. Moreover, some participants particularly mentioned more outings leading to more consumption, as well as vice versa. Participant 4 describes the experience of going out more and using more MDMA over the years:

> *As the years went by I started going out more often and would use more regularly. (Participant 4)*

In the next example, someone writes about going to more raves more frequently after the initial use:

> *From then on, I'd attend raves more frequently (~1 per month average) and would purchase street MDMA (very likely to have been cut/not MDMA) at parties. (Participant 20)*

Another participant attended more raves, clubs, and house parties post initial use, as their friends became more interested in the substance, noting that it was more easily accessible than alcohol:

After that I started going to a few raves and clubs and using there. As my friends got interested in it we started doing it more casually. If we'd be going to be dancing, someone's parents weren't home, or it was easier to get than booze. (Participant 93)

The last example is of a participant who explain that living in a major city made it easy to be able to find raves post their initial use, and also speaking about MDMA being suitable for a rave environment:

Since I live in a major city (Philadelphia) it wasn't hard to find another rave a few weeks after that, and I did. At that rave I did the same thing, I always roll at raves. MDMA and raves were made for each other. It honestly feels like heaven. (Participant 57)

1.2.4 Take a break (2 references, 0.07% coverage)

Two participants mentioned taking three-month breaks between each use. Participants mentioned this technique as a safety measure, a technique, which was later on advised by some participants in order to fully enjoy each MDMA experience. The following example is a participant who spoke of their magical experiences while taking MDMA, while mentioning the three-month break, as well as following instructions found on the www.rollsafe.org website:

I have used MDMA 5 times now and every time has been magical. My doses have ranged from 140-200mg in total. I have always used the instructions on rollsafe.org,

following all the instructions and taking 3 month breaks between each use. I consider it a magical substance and possibly the best psychoactive drug in existence. (Participant 92)

1.2.5 Other (8 references, 0.30% coverage)

This subtheme contains other factors mentioned by participants, which were significant parts of the participants' stories as well as motives for frequent use for some, yet did not fit into any previously mentioned subthemes. These factors included becoming a drug guru, MDMA being a cheaper choice than drinking, finding unlimited access to MDMA, finding high quality pills, just enjoying the feeling, MDMA not interfering with being a highly functioning person, as well as stating the number of times MDMA was consumed until a certain date. Participant 43 spoke about finding unlimited access to MDMA, which lead to their frequent use:

I had unlimited access, so I took it again and again. (Participant 43)

Participant 52 spoke about finding access to good quality MDMA, and this being the driving force behind the increase in their consumption:

At first it was a couple of random times. Somehow after a couple of months there was a sudden influx of very high quality pills at a low cost and it ended up being an every weekend thing. (Participant 52)

The next example is a participant who spoke about becoming the ‘guru’, and being able to help others with their drug-related problems:

> *It got to the point where I was the guru, where people would come to me if they were having a bad trip. If they wanted advice on drugs, someone to calm them down, or someone to give them a nice blanket to cuddle. (Participant 1)*

Participant 30 highlighted the lack of interference of MDMA with their normal life, describing it as their drug of choice:

> *It’s my drug of choice when at a rave or similar event, though I use/have used other drugs as well. I find that it does not interfere very much with my functioning- I get a “hangover” like with anything else but nothing too extreme- and I am a high-functioning (even successful?) PhD candidate doing bio psychosocial research at a large university. (Participant 30)*

1.3 Quitting or cutting down (82 references, 4.98% coverage)

Post frequent use, most stories progressed to the ‘quitting or cutting down’ phase, in which participants explained their experience of quitting or cutting down their MDMA use. Participants told their individual stories of this phase in their lives, which consisted of various different aspects, including motives and consequences leading to this stage of the journey, and individual details of events and emotions going on in a person’s life. Some participants spoke about having completely quit or cut down with details in regards, some explained influencing factors such as having a particularly bad experience, which

ultimately contributed to quitting or cutting down, which led them to this final stage of their MDMA journey. Other commonly mentioned factors included: life circumstances, quality of MDMA dropping, progressively with time, not being the same anymore, or developing health problems. Moreover, some individuals focused on particular factors as the core theme of their story, while others mentioned a combination of factors. This is an example of a participant who spoke of this particular phase of their life, while mentioning their current dosage after cutting down, reasons leading to them cutting down their MDMA use, as well as steps they take after each use:

> *After stopping anti-depressants I had one "big" binge where one night I did about 700 mg of MDMA, and then greatly reduced my use because the guy I was dating at the time did not approve or want to partake with me. For the last few years my use has been fairly low, about 150-250mg once a year, at electronic music concerts. I don't feel a particular compulsion to do the drug anymore since the process is so 'involved'—usually I need to prepare all the vitamins and minerals to prevent neuro damage, take it easy the next day to let my body recover, and keep up a strict exercise and healthy eating regimen for the following months to ensure I don't fall back into depression. (Participant 42)*

Participants commonly mentioned taking a break from MDMA. Individuals often spoke about taking breaks, and told stories about how they decided to stop and then resume. Similarly, the next participant mentioned taking a break in their story. They described their experience of building a tolerance for MDMA (the effect not being the same anymore), and taking a break for a while before resuming and taking regular breaks in between each use.

This participant also spoke about their struggle with depression, building a tolerance for MDMA (not being the same anymore):

> *At the same time I'd been struggling severely with depression. It's something I've had for a long time, long before I started using drugs, so I can't say for certain whether MDMA was making it worst or not, but my MDMA experience had begun to change. It didn't affect me the same way anymore. Its effects weren't nearly as strong, and I started having to take higher and higher dose. After I'd read a few studies about MDMA and serotonin levels I decided it probably wasn't helping, and stopped for a while. At the same time I was prescribed an SSRI (sertraline) by my doctor. I did a two-month course of that, and my depression seemed to have lifted. I tried MDMA again earlier this year and because I hadn't tried it for so long, my tolerance had gone down. Now I take two or three months breaks in between my MDMA use, and am careful to examine my behavior and thoughts afterwards to monitor for signs of depression coming back. (Participant 9)*

The analysis of this last phase revealed nine main commonly mentioned ideas that participants mentioned while telling their MDMA journey. Eight categories being the most commonly mentioned factors: cut down and dosage since, completely quit, a bad experience, life circumstance, quality dropping, not the same anymore, progressively with time, and health problems. Moreover, the last category (other) consisted of other not so commonly mentioned factors.

1.3.1 Quit/ Cut down

This theme consists of two parts: Quit and Cut down. It refers to participants who highlighted having quit or cut down in their stories. Each category will be further discussed, accompanied by direct quotations from participants in order to get a better grasp of each concept.

1.3.1.1 Quit (12 references, 0.35% coverage)

Some participants mentioned having completely quit MDMA, as the final stage of their MDMA story. Some just mentioned having quit completely, while others included some details such as the age or the number of years since they had quit. The following is an example of a participant who highlighted their experience of cutting down, and then stopping completely a couple of years ago:

> *Started to cut back about 5 years ago taking them every few months and only drinking. Stopped completely about 2 years ago. (Participant 35)*

The next participant mentions their age as well as having quit:

> *Now I'm 21 and I'm done with it. (Participant 80)*

The last example spoke about having quit their MDMA use two years ago:

> *Quit approximately two years ago. (Participant 56)*

1.3.1.2 Cut down (32 references, 0.75% coverage)

Participants commonly mentioned having cut down on their MDMA use. As previously mentioned, taking breaks was another factor commonly mentioned by participants, especially the ones mentioning having cut down on their MDMA use. Participants commonly explained taking breaks in between each usage for reasons such as enhancing each experience, as well as not building a tolerance. Also, many participants in this category mentioned taking it if offered or if the opportunity came, confirming that they had not completely quit yet. Moreover, some people mentioned cutting down the number of times or the quantity. Below is an example of someone who mentioned being open to taking MDMA again if the opportunity arose:

> *I feel if given the opportunity I'd do it again. It isn't addicting for me, I never did other drugs with it. (Participant 47)*

The following participant is an example of someone who mentioned making his or her usage occasional, and taking breaks in between each usage:

> *Now, I am smarter about my usage. I use MDMA only at festivals, and wait a month or more in between. (Participant 55)*

Participant 92 also mentioned the importance of taking breaks in between usage, as well as referring to therapeutic characteristics of MDMA:

I believe that it can safely be used recreationally with 3 month breaks in between and also has an incredibly broad range of therapeutic applications. (Participant 92)

Another participant mentioned the frequency of their use, as well as the quantity:

I will consume MDMA 2-3 times a month, no more than 1 gram in a sitting (which can last 10-15 hours). (Participant 85)

1.3.2 Changes

1.3.2.1 Bad experiences (12 references, 0.68% coverage)

While telling the last phase of their MDMA stories, some participants mentioned a bad experience. These experiences consisted of having a bad trip or getting sick from a bad high (such as vomiting). Some participants highlighted these bad experiences as a turning point and reason for having quit or cut down MDMA use, while a couple of participants mentioned these experiences not having an effect on their consumption patterns. Each individual story is unique; however, the experience being a negative one in which a certain level of discomfort was experienced, was a common thread amongst the accounts in this subtheme. Moreover, it is important to note that some participants mentioned overdosing or not being sure of the quality of the MDMA, which was consumed as reasons for such negative experiences. The following is a participant who spoke about their negative experience at a festival, while mentioning that this did not impact their use as they had re-used since and had plans of future consumption:

I also got very sick at that festival and had to go home early. 4 months later I used MDMA for a third time and it was very, very enjoyable again. I plan to use it a fourth time this summer. (Participant 54)

Participant 100 highlighted their experience of going on a multiday session while consuming high amounts of MDMA, causing them to have physical sickness, which was the driving force for them to stay away from all drugs ever since:

At 27 I did multiday no-sleep session with 10+ pills which ended up creating this very physical sickness (brain zaps, tunnel vision, etc.) that last for a week or so. After that I stayed away from anything. (Participant 100)

The next participant wrote a detailed description of their bad experience, which eventually led them to stop taking drugs and alcohol. They later explained that all of these events were not direct results of MDMA in particular; however, MDMA played a significant part in them:

I felt like I was going to die. I was home alone my mom wasn't home.

They continued:

I crawled on the floor, cried my heart out and was depressed. I started feeling delirious, went outside only wearing a tracksuit pants and no shoes or shirt to find someone who could help, ringed the neighbors doorbell then ran back inside,

writhing on the ground. Writing this gives me shivers…I stopped cold turkey since that day. With everything. Drugs, alcohol. I didn't drink anything anymore. My panic and anxiety have been terrible the last couple of months. I started uni this year and everything is falling apart. I'm starting to feel suicidal. Not everything is contributed to the MDMA that I took. But it played a big part for me. (Participant 75)

1.3.2.2 Change (9 references, 0.27% coverage)

This subtheme consists of participants who mentioned a change in their lives while telling the last phase of their stories. Changes varied from most commonly a change in job, to change of location, change in social circle, or a change in relationships. These changes commonly altered the individuals' lives, making them quit or cut down their MDMA use progressively or instantly. All participants except for one mentioned these changes to be natural changes, while one mentioned making a conscious lifestyle change in order to quit. The following is an example of a participant who mentioned a change in their MDMA consumption habits due to changing their geographical location to a country with high drug penalties, as a factor, which was mentioned by another participant as well:

I moved to a foreign country. Drug penalties are high here. (Participant 27)

The following is an example of a change in career as a reason for having cut-down their MDMA use:

The following years I calmed down and settled within a state position, so I seldom get to use MDMA. (Participant 18)

Another participant spoke about joining a sports team at the university at the time. They went on to suggest that such a change in their social circle caused them to feel awkward indulging in such activities, which made them stop their MDMA use:

It was really when I joined a team at Hull and it was really part of the zeitgeist that I felt awkward doing it by myself and stopped doing it. Now the thought of that environment intimidates me if I'm honest. I don't know when the moment was that I stopped together. I just really stopped bothering. I think I'm too old for it now. (Participant 38)

1.3.2.3 Quality dropping (4 references, 0.22% coverage)

A few participants mentioned difficulty in obtaining good quality MDMA, as well as a constant decline in the quality as a major driving force behind the change in their MDMA consumption. This is further discussed by participant 23, who cited suppliers providing people with laced or poor quality MDMA as reasons for stopping MDMA use:

I felt that people I'd spoke to and what I'd read said that the market for supply was changing and people were being given poor quality or MDMA laced with ketamine. As a result I stopped. (Participant 23)

Another example cited difficulty in obtaining good quality MDMA as the reasons for their infrequent use:

> *I then found it extremely difficult to obtain quality consistent supply and have used a total of 3 times in the past 5 years. (Participant 45)*

1.3.2.4 Not the same anymore (10 references, 0.47% coverage)

Some participants highlighted the fact that the experiences were not the same anymore, as a contributing factor to their decision to quit or cut down their MDMA use. This subtheme consists of people who explained this by describing their experiences as not the same anymore, having lost its magic, losing pleasure in it, building a tolerance and resistance, starting to have opposite effects, just not pleasant anymore. The following participant explained how MDMA no longer gave any pleasure to them, and they had found joy and 'addiction' in better activities:

> *It's just not as pleasant anymore unless it's at a very special and big place. After that, I took up things like cooking, exercise, motorcycles, mechanic work, jobs, and videogames. Other "addictions" that make me happy and were better substitutions. (Participant 94)*

The next participant told their story of going through depression and taking medication for it, therefore staying away from MDMA for a while. They later described that once they came off their anti-depressants, they tried MDMA again but 'it just wasn't the same':

> *Six months later I was prescribed anti-depressants, but quit after 3 months as I started gaining an uncomfortable amount of weight and stopped caring about things I once cared about. I tried MDMA again after being off anti-depressants for a month, but it just wasn't the same as the year before. (Participant 54)*

Participant 62 mentioned building up a tolerance and having to spend large amounts of money on MDMA as the reason for the stopping their MDMA use. They further discussed their friends having lost interest, which they state as another reason for them not want to continue their use. The last part of their story explained feeling scattered minded two days after use:

> *The reason why I've decided to stop is because it costs so much money for me to use MDMA now as I've built up my tolerance a bit, where I need 2-4 doses to get me rolled enough (this costs me anywhere between $50-$100AUD a night). I'm also stopping because some of my friends are just getting bored of taking it and it's something I would only want to take if my friends are doing it as well, not to fit in or anything, but I love being on the same level as my friends, I've never really had comedowns but I have always felt scattered the 2 days following use. Now I get really down and feel shit for days after using it, and I always find myself contemplating and thinking about life and thinking about stupid shit which brings me down even more. (Participant 62)*

1.3.2.5 Progressively with time (7 references, 0.36% coverage)

This subtheme represents the participants who spoke about the change in their MDMA consumption as one with no particular influence. These participants commonly explained that the process was one without much motive or reason, and that it was more of a natural process, where usage progressively tapered down or stopped. An example of this is participant 22 who mentioned a tapering down of their use naturally with time, and without any influences:

> *My consumption tapered off without much influence, over time. (Participant 22)*

Another participant discussed moving back home and seeing a cut-down in the trend of their MDMA consumption. They further discussed their MDMA use eventually stopping progressively over time:

> *When I moved back home to southern Europe in 2000 I was out almost every night, and while I did still do MDMA or ecstasy, I was not consuming the large amounts I was before. This went on for few years, and slowly whittled away. (Participant 85)*

The following participant told the story of initially replacing MDMA with DXM, while they still took MDMA, although less frequently. They later on explained how they eventually cut down on their MDMA use for no particular reason:

> *After leaving the military and moving to an area where MDMA was harder to find, I had no issues. I had already tapered down my use of MDMA in favor of DXM, and*

continued to use DXM somewhat periodically. I was also a party drinker, so I had no shortage of fun. I continued to use drugs including MDMA semi-frequently. My MDMA use was cut to approximately once a month for a period of 6 months. After that, for no particular reason, I started to cut down more. In years since, I have remained fond of MDMA and had many more great and helpful experiences. (Participant 53)

1.3.2.6 Health problems (11 references, 0.62% coverage)

This section consists of participants who told stories of their mental or physical health issues that they were experiencing in this phase of their journey. Some participants linked these issues directly to their MDMA use, some did not, and others were unclear. Moreover, these issues were commonly linked to the decision factor to make changes in MDMA, or all drugs in general usage patterns. Issues experienced by participants included neurological symptoms, mental health concerns, mental breakdowns, serotonin syndrome, psychosis episodes, problems with the nervous system, muscles and joints, anxiety, visual distortion, de-realization, and depression. An example of someone who quit his or her MDMA use due to mental health concerns:

After a few months, I quit for mental health concerns. (Participant 26)

The next participant described their experience of being effected by various different side effects, of which they expand on possibly not being directly linked to MDMA as they were using other substances, which they state are more likely to be linked to these issues:

With regard to health effects, there may possibly have been some side effects from the speed that was contained in the pills. I cannot say for sure, and it is more likely that any side effects would have come from the amphetamines I was experimenting with at the time, which were taken in greater quantities. The nature of these possible side effects concerns stress and the way it affects my nervous system, muscles, and joints. For example, I now get a stiff neck, jaw or back when I am stressed. As this is common in adults, I cannot say it is drug related. (Participant 53)

Participant 59 who later reported no longer being a drug user, explained their experience of waking up with various physical and mental health issues which they linked to their MDMA use, of which a few have had lasting side effects:

Woke up 27th December 2014 with anxiety, visual distortions, de-realization and depression. All this lasted approximately till summer 2015 and I have been medically and mentally fine since. Only lasting side effect is visual floaters and slight visual noise/or snow in dimly lit rooms. (Participant 59)

1.3.3 Other (5 references, 0.22% coverage)

This category was based on factors mentioned at this stage of the story of participants, which did not necessarily fit into other previous subthemes but were felt sufficiently important to be further discussed. Participants in this category mentioned various factors such as the benefits of quitting. Another participant highlighted the importance of recognizing a problem and consulting with family for help and support, while another mentioned love problems as a motive for them to cut-down and moderate their MDMA use.

Moreover, other participants mentioned simply deciding to cut down and doing so, as well as a reduction in usage before quitting. Participant 13 described having enjoyed their experience with MDMA, and now seeing the benefits of no longer using it:

> *Since I came off the drug and previous others I had seen many benefits so I decided to stay off it. All in all, I enjoyed my experience with MDMA, however would say that it comes to a certain age that you should stop taking it as you don't need drugs to have fun! (Participant 13)*

The next participant wrote about the experience of recognizing and admitting they had a drug problem to themselves as well as their mother, and highlighted the importance of the support and assistance of their mother through this process. They also explained the difficulty of going through post-acute withdrawn syndrome, and now 'rolling' only very so often, while mentioning experiencing PAWS, which is nowadays widely discussed in recovery movements, especially those with a 12 steps orientation, but is not a scientifically validated or accepted condition:

> *December 2013 I have an absolute meltdown and admit I have a drug problem. Now telling that to my mom was the hardest thing I've ever done. She cried and gave me the biggest hug. I never felt so supported in my life. She immediately took me to the number one rehab in Michigan- Brighton. After being in recovery I experienced something called PAWS- post acute withdrawn syndrome. It's basically the brain repairing itself and gives you the opposite effects of the drugs you were using. So once a month for a week I would get really really depressed to*

where I tried killing myself 2 more times. I had to deal with paws for 2 years. PAWS finally went away and life is better now. I still roll but only once in a great while. (Participant 90)

In summary, participants mostly reported starting their MDMA use between the ages 15-19. They commonly referred to their first experiences as a magical one, often mentioning finding a newfound love for music, as well as experiencing positive therapeutic sensations. The most common reasons that participants cited for starting MDMA use were music and music events (such as attending raves and festivals), therapeutic reasons (finding beneficial aspects), curiosity and social temptations (such as becoming exposed to new individuals or situations).

People described frequent use in terms of a wide range of different dosage and frequencies. Progressing to more outings (commonly attending more music related events) played a crucial role in people's lives while becoming frequent users, followed by lifestyle changes where they found a new exposure to MDMA (such as going to university). Only a few individuals mentioned addiction or having a lack of self-control while telling the stories of this phase of their lives.

Not all participants specified if they had quit or cut-down their MDMA use, however, amongst individuals who did, the majority reported having cut-down rather than completely stopped. Participants most commonly identified having a bad experience, or having health problems as the most common reasons for these changes. These two factors were commonly reported as a result of their drug use as a whole, rather than only MDMA in

particular. Others reported the experience not being the same anymore (reporting factors such as building a tolerance), quality of MDMA dropping, as well as reducing their use progressively with time (naturally). The decrease in quality is an important factor as it was mentioned in various different areas of the data, referring to the suspicion that the drug was adulterated with other drugs, causing the same issues that people reported as the most common reasons for having quit or cut-down.

2. Polydrug use

Question: MDMA and other drugs (This question is about your MDMA use, alcohol, and any other drugs that you were taking. How do you see them all fitting in together).
Question two was designed to further understand if participants were mixing drugs, and to understand how they saw them all fitting in with each other. This question was labeled as 'Polydrug use', and was divided into three main themes: mixing, not mixing, and unclear. Although the question had particularly asked about the drugs they were using at the time, and their views of how they all fit with each other, some participants wrote about the drugs that they used simultaneously with MDMA, others about other drugs that they were indulging in during the same period of time, and others wrote of drugs that they had tried at any point in their lives. Consequently here 'mixing' involves any reference to multiple drugs, 'not mixing' involves explicitly mentioning the avoidance of mixing MDMA and other drugs and 'unclear' reflects the remaining answers.

2.1 Mixing (94 references, 14.15% coverage)

Participants often mentioned their polydrug use as 'the lifestyle', or a common behaviour amongst the individual and their group of friends, at that particular place or time. Participant 1 is an example of an individual who described their everyday polydrug use while stating that this was the norm at the time. Previously participant 1 had described their drug consumption taking place following their move into a 'drug house' at the age of 16:

> *The time I was in that house, I was also doing mushrooms, weed, MDM, and drinking almost everyday. The lifestyle was getting high in living rooms. So any drugs anyone had at the time was always welcome. (Participant 1)*

Many participants who were placed in this subtheme described their polydrug consumption in terms of describing their routines, such as giving examples of their nights and placing the different drugs being consumed at the time accordingly, as well as giving explanations of the way in which each substance would be utilised. In such explanations, participants commonly mentioned alcohol, MDMA, and cannabis being consumed within the same night, as well as LSD and amphetamines being used to enhance the experience. Participant 87 is an example of someone who had described their drug use in terms of where and when each substance would be used, which ones would be mixed and which ones would not, as well as a few dosage details. They described their experience with MDMA, alcohol, and cocaine as followed:

> *MDMA/ecstasy I'll only use when I'm around people I'm close to, usually at either a gig or a dance music event to enhance the experience. I'll usually have a few*

alcoholic drinks (enough to feel the effect) then stop and start drinking water when I start coming up. I'll take either one pill (in halves) or about 200mg of MDMA in a night when I do use it. I take cocaine roughly once every two months when I know I'll be drinking heavily in a situation where I might be drinking a lot and want to talk to people (pub crawl or a house party usually). Never in a nightclub as I want to talk a lot on cocaine, and I struggle to hear people over the music. I'll usually use about 2 grams of cocaine when I do it. I'd never combine alcohol, cocaine, MDMA, and ecstasy. (Participant 87)

Following is another example of a participant who described their 'routine' for the night while consuming MDMA:

Well, you begin the night on alcohol and then you progress to MDMA as it makes the effects stronger! Then you smoke some weed to take the edge off the comedown. (Participant 6)

As previously mentioned, some participants mentioned mixing MDMA with particular substances in order to enhance the experience, such as LSD, Ketamine, and amphetamines. The following participant described mixing MDMA and Ketamine in particular together, and described the combination as 'magic':

When I used to take MDMA I used to often mix it with alcohol and Ketamine. Alcohol doesn't seem to effect me much when I'm rolling but Ketamine definitely

does, together they work magic – a sense of euphoria with crazy hallucinations of confusion. (Participant 25)

Some participants wrote about their drug use in general, commonly telling a story of gradually exploring different substances within a certain time frame and order. Participant 33's experience with exploration of various drugs as well as consumption within the same time included substances such as alcohol, cannabis, mushrooms, MDMA, Ketamine, Oxycontin, Acid, Opium, and GHB. They wrote:

I started getting into doing cocaine and ketamine more heavily as well and most weekends I use the three of them." They continued: "My drug use basically snowballed in a year. I started drinking when I was fourteen. Shortly after I turned fifteen I used marijuana. A few months later, I used shrooms. The night after I used shrooms the first time, I used shrooms again with MDMA. A few weeks later I used Ketamine. A few weeks later I used Coke. A year later I used Oxycontin, Acid, Opium, GHB… I don't think that Marijuana was a gateway though. I wanted to try drugs long before I started smoking Marijuana, and once the door was opened, what a wonderful would it was. I loved exploring drugs. (Participant 33)

2.2 Not mixing (11 references, 1.76% coverage)

Due to the diversity of the content of the answers, this subtheme contains various different types of answers. Moreover, in some cases it is not clear if people really were not mixing. However, they all have the factor of mentioning not mixing or the preference for not mixing/or 'barely ever' mixing with a particular substance or with drugs in general in

common. Some participants made a clear statement of not mixing such as participant 50 who stated:

> *I was only taking MDMA. (Participant 50)*

Moreover, participants commonly brought up the use of various drugs; however, they highlighted the fact that MDMA in particular was not or rarely mixed with other drugs such as participant 2:

> *My use of MDMA and other drugs did coincide, however, due to the culture at the time MDMA was the drug of choice. I rarely mixed MDMA with other drugs as I did not want to taint the effects. (Participant 2)*

Another trend seen was individuals who spoke of not mixing due to bad experiences with mixing substances in the past in general. The following participant is an example of someone who spoke about not mixing drugs, as a result of previous negative experiences:

> *I never take them together. I am smart enough to know to never mix drugs. Take one or the other, never both or more. I used to drink a lot before I was introduced to MDMA and other drugs. I would party from Thursday to Saturday. Drink as much as I can, have horrible hang over and cure it with more alcohol at the bar the next day… (Participant 48)*

The above participant continued speaking about experimenting with different substances and their experience with each one including negative ones of which they explain made them ‘know their limits’.

2.3 Unclear (2 references, 0.32% coverage)

This category contains participants whose statements did not fit into the previous two subthemes. The following participant was placed in this category as they stated their experimentation with different 14 different drugs, however, it was unclear if these events had happened simultaneously, during the same period of time, or in their lifetime as a whole. For example:

> *As answered before, I have experimented with 14 counted drugs. I found the use of all of them in succession nearly killed me and ruined my life. (Participant 55)*

In summary, many people had mixed MDMA with various other drugs, although some avoided this practice, and there was ambiguity about what drug ‘mixing’ entailed. Most people interpreted this as taking drugs at the same time or in rapid succession, but a few considered taking a wide range of different drugs to be mixing.

3. Role of drugs during consumption times

Question three of the questionnaire asked: We want your views (Looking back, how do you see your drug use? What do you think about it? What role did they or do they play in your life? To what extent do you see yourself as a drug user?). It asked the participants to reflect

back and saw how they see themselves and the role they thought drugs played in their lives. This question was divided into two main categories: self-identification and role drugs played in the person's life. These two categories were created on the basis of the participants commonly writing about these two topics when answering this question.

3.1 Self-identification (106 references, 10.32%)

This category refers to how participants saw their drug use when they reflected back on their journey. As previously mentioned, the question had asked for participants to particularly reflect back on their drug use in order to see how they see their previous drug use and if they consider themselves to have been drug users. Participants had answered this question in different ways. It was common for the participants to reflect back; however, some chose to mention their current drug use, and some included both their previous and their current drug use patterns in their answers. It is important to mention that participants' answers also varied in the substances that they chose to speak about. Some participants chose to speak only of MDMA, others spoke of a combination of drugs, and some speak of each one individually. The subthemes created were based on the reflection and self-identification of the participants, although most subthemes include mixed answers. Current drug use patterns, unclear, and those of with no emerging theme were placed in the 'Other' subtheme. The subthemes reflect participants who self-identified their drug use in the following ways:

3.1.1 Experimental/experience (7 references, 0.78% coverage)

When reflecting back on their drug use, some participants referred to their drug us as an experimental phase in their lives. Participant 4 stated:

I believe my MDMA use was largely experimental. (Participant 4)

Some participants described this phase in more detail, including a comparison of then and now. Participant 34 wrote:

No regrets and on the upside, I did my "experimentation" when I was young not old. I do not see myself as a drug user at all since those days are so far behind me, but at the time, yes. (Participant 34)

Some participants also expressed this experience in more details, with self-reflection:

I see my drug use as an experience, I wasn't out of control. I didn't have a problem. It didn't cause a problem for me in my day-to-day life. It was just a fun thing to do. As a "drug user" I know my limits, I know not to go over my limit. I am the type of person who likes to be in control, and I do the drugs that can keep in control with the right dose. (Participant 48)

3.1.2 Addiction and abuse (6 references, 0.29% coverage)

This subtheme was created based on participants who self-identified their previous drug uses as an addiction or said that they believed that they abused drugs. Participants who used the word addiction or abuse in order to describe their previous drug habits were placed in this category. As previously mentioned, participants included various different information when describing this phase in their lives, such as their current drugs use versus previous

drug use, their detailed views on their feelings and thoughts on this matter. The following participant describes their current and previous drugs use along with more details of frequency of use:

> *I am/was borderline or beyond borderline addicted. But if I'm truly and addict, it is not to the extent that I see others who would not acknowledge the possibility of addiction or simply don't care. I never did drugs every day, possible ¾ weekends for a year. I don't regret it but I probably would be better off not having done that. (Participant 28)*

The following is an example of a participant who refers to their drug use as abusive at times, as well as their current habits:

> *Abusive at times (alcohol and MDMA) although I did alright and wasn't worse than my mates at the time. Addictive (weed) still currently smoking daily despite it having overall negative effects on my life. (Participant 66)*

3.1.3 Overindulgence (13 references, 1.16% coverage)

Some participants spoke about their previous drug use being too much, heavy, overboard, excessive, and an overindulgence. This subtheme was created in order to include all of the participants who identified their previous drug use as heavy and excessive. The answers varied in content and included various different details, ranging from giving a self-reflection of the current drug versus previous drug use, more detailed explanations of the drug use, explanation of different substances in regard to the frequency of use, or details of

age involved with the heavy use of drugs. Moreover, feelings and personal views were also included in some of the answers. The following participant describes their current drug use, their previous MDMA use, the age involved with MDMA use, and the belief that they did not suffer from permanent side effects:

> *I no longer see myself as a drug user although my use of MDMA between the ages of 16-21 was excessive. I think I got away lucky to have suffered no obvious permanent side effects. (Participant 2)*

The next participant spoke of their current drug use along with reasons for no longer being a heavy user:

> *I don't consider myself a very heavy user of drugs anymore, nor do I have a really great interest in them. I think I will continue to use substances I consider very safe sporadically, but I don't plan on heavily abusing any substances again. I think that statistically speaking I cannot safely afford to do so. (Participant 24)*

Other participants such as participant 94, wrote about their previous drug use as well as how they felt about it:

> *Heavier drug use than most. I don't regret it, but I'm not proud of it. I did some pretty stupid things but they made me into who I am now, so I can't complain too much. (Participant 94)*

3.1.4 Drug user (7 references, 0.39% coverage)

This subtheme was created as, when looking back, a few participants identified themselves as 'drug users'. These participants did not mention the degree of use, and included details such as their personal feelings as views about their own drug use, and drugs in general. The following participant describes their previous and current drug use by writing:

> *I was (and am) a drug user. (Participant 27)*

Another participant describes their previous and current drug use as well as a reflection back:

> *Do I see myself as a drug user? I certainly used to be, but I couldn't describe myself as one any more. I had a great time, had some great laughs, didn't cause anyone grief. (Participant 79)*

Participant 88 describes their drug use along with details of harm reduction and promotion of safe use to others:

> *I am a proud drug user. I only have positive experiences with drugs and have never come close to abusing any. I pride myself on excessive harm reduction before taking any drug and try to impart this on others. (Participant 88)*

3.1.5 Mindful (9 references, 1.28% coverage)

A few participants mentioned their previous drug use as mindful, conscious, responsible, careful, or healthy. This subtheme was formed to include the participants who referred to their previous drug use as mindful and healthy in general. Moreover, it was common for participants in this subtheme to mention drug education, harm reduction, and at times a responsible lifestyle in general. An example of this is participant 3 who explained their experience as a mindful one, while reasoning not enjoying drugs as much, as well as career ambitions:

> *Was always conscious I did not enjoy drugs as much as peers. I had an ambition to excel within business and I was very mindful during the time I was partying with drugs that I was procrastinating and therefore not on the right path, this awareness had a significant impact on the effects of ecstasy and I believe my friends did not have such an adverse reaction. (Participant 3)*

Another participant wrote about 'responsible' drug consumption in relation to utilization of different substances and risk management:

> *I see my drug use as responsible. I feel privileged to be able to know the risks that come along with them and that I have not let drugs affect my life. I use alcohol at times to lose inhibition while I am out socializing. I utilize marijuana to relax with music, to enhance my perceptiveness while watching films and documentaries, or to make exercising more enjoyable. I use MDMA primary only at music festivals for*

the extreme euphoria it brings and to enhance my enjoyment of dancing. (Participant 54)

As previously mentioned, risk management and harm reduction were frequently mentioned by the participants. The following participant is an example of someone's reflection of the practice of safe drug use and the views:

If I can significantly improve my life by doing drugs in such a safe manner? Then I think the small risk is worth the large reward. If I wasn't so diligent with harm reduction, I would feel far more guilty about my drug use. (Participant 88)

Another participant wrote about being a safe drug user while mentioning a few details of practicing safe drug use, and reflecting back on their journey and mentioning previously going over their limits:

I don't consider myself within the heaviest of users, but I can see how from when I began to where I am now, I'm much more cautious about the amount of drugs I take at a concert. I'm a much safer user and much more experienced user. I always carry a camelback to be hydrated, and I know my limits now that I've crossed it before. (Participant 104)

3.1.6 Normal and casual (6 references, 0.63% coverage)

Some participants referred to their previous drug use as normal or casual. Participants who fitted into this subtheme commonly mentioned factors and terms such as being young,

being normal, expected, and a ‘casual way to get high’. The following is an example of a participant who refers to their previous drug use as ‘expected’ and ‘normal’:

> *I am no longer a drug user at all. Except for alcohol. My drug use was fun at the time and basically expected/normal within my group of friends when raving- especially in Ibiza. I now abstain and my friends respect that. (Participant 59)*

Another participant described his previous and current drug use as ‘ok for a Western male’, while mentioning different substances and reasons and motivation for consumption:

> *I think my drug use is OK for western male with no incentives to hurry up and get a family and become a fulfilling block for society. As a teenager, alcohol was enjoyed with good friends occasionally because it was fun. It also shaped the way I think and act. Today I no longer see a reason to ‘rebel’ against anything (apart from social norms), but instead develop myself and learn more things about the mind and body. I definitely see myself as a drug user, and I wonder if, in the future, people will look at fast-food, sugar, sex, speed, adrenalin, etc. with the same eyes used to look upon today’s vices. (Participant 70)*

3.1.7 Recreational and fun (9 references, 0.74% coverage)

Previous drug use was commonly mentioned as recreational and fun. The following participant commonly referred to their previous drug in terms such as a ‘classic case of occasional recreational use’, completely recreational, recreational and fun, or just fun. The

following participant explained the drug use journey as ‘fun’ while mentioning the thoughts on how life would be if one did not indulge in drugs:

> *I do not think that it plays too big of a role in my life besides the nights that I want to go out and have fun. I am in college right now and I do not feel as though it is getting in the way of my studies. On the other hand though, I could not imagine what it would be like to have no idea what it was like at this point and think that people are missing out they do not at least try it once. (Participant 91)*

Another participant described himself as a recreational drug user as well as describing the capability of drugs to influence a person’s perspective in life as:

> *I see myself as a recreational drug user, as drugs has the capability to present life in a different perspective, both during the effect, along with the after effects such as the comedown. (Participant 5)*

Other participants focused their answers on strictly identifying their drug use, such as participant 101 who wrote:

> *I see myself as a recreational drug user who likes to experiment, not really a drug addict. (Participant 101)*

3.1.8 Other (41 references, 3.63% coverage)

The remaining answers given by the participants that did not particularly fit into the previously mentioned subthemes were placed in this category. This category consists of different themes associated with self-identifying strictly current self-identified view of drug use, or previous self-identified views of drug use which were not recurrently repeated or unclear. Moreover, this category contains the answers of the participants who identified different patterns of drug use in regards to different substances (rather than one particular pattern for their drug use as whole), as well as participants who described their previous drug use in various different terms such as feelings, emotions, and lessons learned. As mentioned previously, some participants strictly spoke of their current drug use patterns. Participant 20 is an example of a participant who spoke about their current drug and alcohol use pattern:

> *I now only smoke marijuana and drink alcohol infrequently. (Participant 20)*

Participant 21 also spoke of their current cannabis use, while explaining they believe it did for them, as well as their views on cannabis and MDMA:

> *I smoke weed too about a gram a week, which kind of "resets" me in the normal college life, which is pretty intense. But I don't see weed as a "hard" drug compared to MDMA, just stimulant with a moderate perception change :D (Participant 21)*

Another example is participant 37, who explained their current drug use as ‘much less frequent now’, while explaining the frequency, supplements and techniques used in terms of harm reduction, and views on harm reduction and safe drug use:

> *Do it much less frequently now, only once every 3 months, not doing it multiple days in a row like I used to and I use supplements to prevent neurotoxicity. NA-R-ALA, ALCAR, magnesium glycinate, grapefruit juice (CYP3A4 inhibitor), Vitamin C, and limit my alcohol intake to 3-4 beers. I drink beer every day so my tolerance is way higher than normal people, I would not suggest more than 3 beers to other users. I think when done correctly and responsibly it can be amazing and you can prevent a lot of negative side effects, although I would not rule them out completely. I have a lot of friends who have developed some serious anxiety and other disorders from too frequent use. (Participant 37)*

Another example is participant 43, who mentions their current drug use pattern as very moderate one, as well as speaking of their ‘relationship’ with cannabis and society’s drug use in general:

> *At this point I am a medical marijuana patient who uses high-CBD strains mostly, uses it very moderately, and I probably use fewer drugs than just about anyone I know. I have an awesome relationship with cannabis, and that’s what I wish to focus on. I’ll continue to explore with psychedelics, but much more moderately than I have in the past. Of course, I see myself as a drug user, everybody is a drug user in this society. (Participant 43)*

A number of participants described their previous drug use by using terms, which suggested regret and wrongdoing. Stupid, reckless, being naïve, being happy that have stopped, glad I quit, hindrance to my younger life, disgusted by myself and shameful were some of the terms that these participants used to identify their previous drug use. Participant 25 identifies their previous drug use as stupid due to lack of thought about the possible dangers beforehand:

> *It was stupid when I first started, I wish I paced myself when I first found it but I was an idiot and didn't think of the long terms dangers. (Participant 25)*

Participant 33 described their drug use as reckless, while including details about their MDMA and cocaine use, as well as their current state:

> *I see my drug use as often reckless…I would say I was addicted to MDMA as anyone could be when I was 15-16. Then coke took over for me due to a drug addict boyfriend and I still struggle with it now. This past year has been the least drug oriented in the past 5 years, so the majority of my life as a young adult. And I've worked hard to be here and had to cut a lot of negativity out of my life. (Participant 33)*

Another example is participant 36 who refers to their drug use as being disgusted with themselves when reflecting back, as well as self-reflection of not being a 'horrible drug user', and the affects it had on their life:

> *I am disgusted with myself for every use. I don't like it. Yes I enjoyed it and it made my self-esteem issues vanish. They didn't play a huge role but not a small role either. I don't see myself as a horrible drug user since I realized what I'm doing is wrong and trying to cut back. (Participant 36)*

As previously mentioned, participants used various different terms while reflecting back and identifying previous drug use patterns. Terms such as 'out of hand but functioning', 'got it out of my system', 'sometimes tested the limits', and 'I've done so many drugs' were a few ways in which participants expressed their previous experiences. Participant 27 described being out of hand but still functioning by describing how it was not noticeable as they were functioning normally:

> *I was definitely out of hand, but still functioning and very low-key unless you were in my close friends group-going to classes, had a girlfriend who wasn't in the scene, graduated from university, etc. (Participant 27)*

Some other participants identified their previous drug use as 'being a consistent drug user', 'consistent seasonal drug user', being a 'guru', 'moderate user', and 'not a drug user'. An example of this is participant 71 who began explaining their story by expressing gratitude for their drug use and describing themself as a 'consistent drug user':

> *I would consider myself grateful for my drug use and the exposure I have had to different substances (ecstasy, LSD, Shrooms, DMT)…. I see myself as a consistent*

drug user, especially cannabis. I will do psychedelics every 2-3 weeks when I have a day to set aside. (Participant 71)

A few participants described their previous drug use in terms of it being instrumental towards alternative treatment or a tool for relaxing and expanding perspectives. One participant described the experience in detail, expressing views on different substance being used as different treatment tools:

I see my drug use as an alternative treatment for many things considered at one time to be neurosis and psychosis as in the DSM-III book. I believe that MDMA has great potential for therapeutic, and occasional recreational drug, much like how alcohol was once therapeutic, and recreational. I believe that LSD and other psychedelics are stronger, but can help further along treatment, and training on self-actualization as per the Maslow hierarchy. I submit that my life has proven this to be true, at least in one subjective case. I also think that most psychedelics are usually self-limiting due to a quick tolerance to their effects. (Participant 58)

Participants used various ways to explain their drug use, including some terms widely used such as experimental, recreational, being a drug user, and addiction. However, there were some more unique terms others used to identify their drug use patterns such as overindulgence (most commonly mentioned), mindful, and normal/casual, as well as informed and deliberate or a type of experimenter.

3.2 Role drugs played in the person's life (77 references, 6.53% coverage)

This theme was created in order to categorize and understand the role that the participants identified their drug use played in their lives. Each participant had their own unique way of explaining this, however, as a whole, the descriptions overall were subcategorized into and fitted into three main categories. Participants commonly mentioned the role of the drugs as a positive or negative one in their life, hence the subthemes 'positive' and 'negative were created under this theme. Moreover, some participants explained the role of drugs in their lives as a neutral one, mixed, or an unknown, hence the third subcategory for this theme 'unknown or neutral'. Furthermore, each individual subtheme included various common themes mentioned by participants, which will be further described. It is important to note that at times it was clear to see that some individuals spoke about the effect of their drug use in general, while some spoke solely on the effects of MDMA on their lives, and some were unclear.

3.2.1 Positive applications (52 references, 4.16% coverage)

This subtheme contains the participants who identified the role their previous drug use currently plays or previously used to play in their lives, as one, which contained positive characteristics and elements. This was commonly mentioned by either describing the variability and usefulness of drugs all together, different drugs explained separately, or only a particular drug, notably MDMA. However, MDMA in particular was commonly the topic of discussion among most of the participants. A diverse range of elements was spoken about in this subtheme. Answers commonly contained various different elements that each individual believed had been effects of their drug use on their lives. Due to complex and multi elemental answers, this category was not divided into smaller subcategories.

However, many common trends could be witnessed in this subcategory. Following is a list of most commonly mentioned uses of MDMA:

- Enhancement of social skills
- Enhancement of love and appreciation for music
- Optimization of fun
- Therapeutic aspects

Participants regularly mentioned that they 'would not take it back' and had 'no regrets'. Moreover, social factors were a common trend often mentioned by participants. An improvement in communication and social skills, and making strong friendships were commonly spoken about by the participants as effects that drugs, most commonly MDMA, has had on their lives. An example of this is participant 20 who mentioned happiness, forming strong friendships, as well as having a strong mental composure due to experiences with drugs:

> *I would not be the happy person I am today. My drug use has created some of the strongest friendships I ever expect to experience. My mental composure is infinitely stronger because of the experiences I've had due to drugs (Participant 20)*

Another participant spoke about their experience as a happy one, particularly in terms of MDMA improving their sociability skills and helping with connecting with people. Moreover, this participant also asserted that they would not change a thing if they had to go

back, a statement, which could regularly be seen, as previously mentioned. This participant wrote:

> *I was introduced to the substance by a friend and it was love at first drop. I was a bit of an introvert and MDMA helped me open up and experience things that I've never experienced before. I was able to share my emotions and meet people. It was really helped me see the world and music in a whole new light.*

They continued in another section:

> *I feel that my use had nothing but positive outcomes and it helped me connect with people in the most amazing way. If I had to do it all over again, I wouldn't change a thing. (Participant 34)*

Enhancement of the clubbing experience and love for music and optimization of fun were also factors commonly mentioned. Participants often spoke about MDMA in particular enhancing the clubbing experience and music, furthermore helping them find their love for music and particular genres. A participant described this experiences and its link to finding love for certain genres of music as:

> *MDMA relates directly to music in my experience. It helps you love music that you may not otherwise love, and it opens you to exploring more of everything. Love becomes more tangible while using, and you have tremendous sense of empathy and belonging during the roll. (Participant 22)*

Participant 32 also mentioned experience with the ‘dance scene’ through MDMA, as well as a positive social impact:

> *MDMA introduced me to the dance music scene which is now my life. I met so many wonderful people who are my friends. I found a music and a scene that I love. (Participant 32)*

Participants also commonly mentioned therapeutic roles and influences that drugs, most notably mentioning MDMA, played on their lives, such as overcoming social anxiety, defining a perspective on life, personal growth and development, open mindedness, finding harmony and happiness, giving purpose to life, a better understanding of self and others, finding a balance in the mental and emotional self and emotional management, finding contentment with life, and teaching happiness and love. One participant explained their experience with MDMA in particular as a tool to balance the mental and emotional self, letting go of mental clutter, as well as altering their views of reality for the better:

> *I believe it helps me to balance my mental and emotional selves and remain aligned with that same view of reality that I first experienced. It helps me to let go of the mental clutter that clouds my vision, and keeps me focused on what is truly important. Without MDMA, I would have been a very frustrated and confused person. My views on reality would not be as peaceful or loving, and I would not have accomplished nearly as I have since I began my journey. (Participant 53)*

Mind opening, being taught happiness and social interaction, and love for life were reported. Moreover, participants commonly mentioned open mindedness and finding love and happiness in life in general. An example of this was participant 92 who spoke about their MDMA use and its influence on changing their perspective in life, human interaction, happiness and love for life in general:

> *…MDMA has heavily influenced my perspective on life and relationships with other people. It opened my eyes to the many possibilities of happiness and true social interactions…It has left me with an incredibly positive mentality and a love for life. Before MDMA, I used to always worry and be depressed about certain past events in my life but now I appreciate that I am alive and able to interact with others. Words can not describe how you feel on MDMA and the impact it had on you afterwards… (Participant 92)*

Moreover, it is important to mention that some participants specifically mentioned drug use being used as a tool to target and overcome particular issues rather than being therapeutic in general. For example, Participant 77 mentioned their drug use being a tool to overcome social anxiety, which is a common issue often mentioned by participants. One wrote:

> *My drug use was a tool for me to overcome social anxiety and connect to various (and diverse) groups of people. I was able to make new friends, build long-lasting relationships, and even gain access to various career opportunities which I took great advantage of. (Participant 81)*

It is also notable that a few participants mentioned that the drug scene is much more peaceful, with no violence, compared to the drinking scene. The participants who mentioned this factor also mentioned other positive aspects that they identified drugs played in their lives. For example, the following participant, touched on the fact that the 'drug music scene' is a nice one filled with love and dance rather than fights, as well as social and therapeutic aspects of MDMA that they identified and recommended:

> *The drug music scene was much nicer than going out drinking, no fights and everyone is there for music, loves each other and wants to dance. Such a lovely crowd and a great time in my life. Made some life-long friends, most I don't speak to anymore though. Using MDMA in the bedroom was also fun; it's the ultimate couple's therapy drug. Nice, nonjudgmental and honest chat, and waves of erotic euphoria. Highly recommended. (Participant 41)*

3.2.2 Negative (9 references, 0.78% coverage)

Some participants identified the role of drugs on their lives as factors and characteristics, which were identified as negative ones. These participants generally wrote in an overall negative tone while stating problematic factors, which had temporary or lasting negative influences on their lives. Creating a temporary escape by pushing the problems aside and blocking out stressors, or being used as a temporary coping mechanism was the factor that was most commonly mentioned as one of the negative factors. It is important to note that negative effects were commonly associated with drugs collectively rather than MDMA in particular, only a few participants referred to MDMA in particular as a temporary tool in order to escape from problems and negative feelings. The following participant is an

example of someone who described his or her use as a ‘catalyst for my self-destruction’, while describing that drugs collectively helped them set their problems aside:

> *My drug use was the catalyst for my self destruction. It verified the position of being a lazy prick and not giving a fuck about anything. It’s terrible when I think about it; I break down when I think back on my 3 years of abuse. The role they played was to push all of my problems in a corner. The drugs were the hand I would put over those problems. XTC made me feel happy. I never felt happy before, and this chemical did. It was the only thing I could think about at some times. (Participant 75)*

Moreover, participants mentioned other negative roles that drugs had on their lives, such as legal issues, being the source of their anxiety, damaging and controlling life. The following participant spoke of decisions, made due to drugs, which ended up being life damaging, while stating how now they had moved on and were healthier now post-drugs:

> *Even though I have moved on to live a very healthy and clean life I believe I made some decisions at the time which damaged my life, that being said, I have been away from any drugs for over a decade and I have a great life. (Participant 7)*

3.2.3 Other (18 references, 1.69% coverage)

This subtheme highlights the participants whose answers were identified as neutral influences, or ones that were unclear. Neutral influences are identified as participants who have identified both negative and positive influences of drugs on their lives, as well as

those who described the influence as a neutral/non-significant one. Unclear statements were ones in which the participants spoke of factors which could not be identified as positive or negative, or statements which were not necessarily stating roles but rather explaining the experiences. As previously mentioned, neutral statements often included both positive and negative aspects, or predominantly highlighted certain aspects while still mentioning others. Another notable factor mentioned was the notion of change. Some participants mentioned their experiences changing their lives. Change in life is not always definitely positive or negative, and sometimes it is just change, although it is known to commonly promote personal growth. Participant 1 spoke about her drug use as a turning point in her life, which she stated, has made her who she is today. In her statement, she explained these experiences as a turning point in which she changed and realised who she did not want to be in life. She explained this by writing:

> *I see it as embarrassing, however I also see it as a huge turning point in my life. I dropped out of school to do drugs, to make friends. After a while and working as a chambermaid I realized that I was better than getting high all the time. I didn't want to be someone people called stupid. I wanted to make something of myself. I wouldn't change what I did because they make who I am today. (Participant 1)*

Moreover, as previously mentioned, a few participants spoke about their experiences as mixed experiences. An example of this is the following participant who speaks of both good and bad times, mentioning open mindedness and finding new views on the world, as well as negative effects on their education and job:

> *There were good times and bad times. I think it has opened my mind up and broadened my views and opinions. I remember after the first time taking MDMA I viewed the world in a completely different way, very much for the better. It was a good feeling. I used to be a heavy user and if affected my life badly. Dropped out of college, had some terrible jobs that I couldn't hold down. (Participant 29)*

Additionally, a few participants spoke in tones that could not be identified as positive, negative, neutral, or a change, but rather informative statements on their views on drugs or MDMA in particular as a whole. For example, participant 5 spoke about MDMA's affects and the comedown, and how it should not be used:

> *MDMA depicts life as a moment of euphoria, with a long comedown. To a rational person, this drugs should not be considered a permanent source of excitement or ecstasy. (Participant 5)*

In summary, positive applications were far more commonly mentioned compared to the negative aspects of MDMA on one's life. Specific uses of MDMA most commonly included an enhancement in social skills, appreciation and love for music, optimization of fun, and therapeutic applications. Positive applications were very commonly specific to MDMA (although other drugs may have specific effects), however, the negative effects were more about drugs collectively and not so much MDMA focused. The most commonly reported negative factor was creating a temporary escape.

4. Changes in drug use Pattern

Question: How has your drug use changed? (Do you consider yourself to have quit/calm down? To what extent did you have to do things for your drug use to change?)

This question was designed in order to understand changes in the drug use pattern of the participants. The question consisted of two parts, a part asking individuals if they considered themselves to have quit or cut down, and the second one focusing on actions and changes that were made in order to change drug use patterns, in order to get a deeper understanding of how and why individuals' drug use patterns changed. Although the questionnaire was particularly designed for individuals who had quit or cut down MDMA use, a few individuals reported not having ceased or cut down. Moreover, some participants, simply answered yes, referring to the fact their drug use has changed, while others went into more details while explaining the changes in their drug use patterns. Three subthemes were identified and created in regard to participants who had answered yes; quit, cut down, and unclear. Furthermore, the second part of the question explored actions, which were taken in order to change these drug use habits. Most participants described how or why they had made changes in their drug use habits. The theme How refers to steps and actions which were taken for an individual to alter their drug use habit. The subtheme Why refers to the driving forces and the reasons behind the decision to make a change in one's drug use patterns. When describing how, five subthemes were identified and created which the participants most commonly mentioned. These five subthemes were: lifestyle change, naturally, finding a motive, just stopped, and professional help. When describing why their habits had changed, participants spoke of 5 subthemes, which were lifestyle change, growing out of it, not the same anymore (affects and quality), bad experience, and family or

loved ones. Below is a table demonstrating the mentioned themes and subthemes. Each theme and subtheme will be further discussed.

			Yes		
What:	Quit	Cut down	Unclear		
How:	change	Naturally	Personal and social identity	Just stopped	Professional help
Why:	change	Growing out of it	Not the same anymore: a. effects b. quality	Bad experience	Family or loved ones
			No		

Table 10. Explanation of question 4's themes and subthemes

4.1 Yes (80 references, 4.57% coverage)

Individuals who answered yes to identifying a change in their drug use patters, commonly mentioned three factors: What (if they had quit, or cut-down), How (how they made these changes), and Why (what were the factors contributing to making the decision to make these changes). The answers to these questions and the factors mentioned and involved will be further discussed below.

4.1.1 What (80 references, 4.57% coverage)

Participants, who had identified a change in their drug use patterns, were divided into three subthemes: quit, cut down, and unclear. Each individual subtheme was created in order to include the participants who had stated their current situation.

4.1.1.1 Quit (22 references, 1.21% coverage)

Participants who mentioned quitting and not being a drug user anymore were included in this category. It is important to note that this subtheme is formed based on participants' own belief and mentioning the quitting factor. Moreover, participants often mentioned 'completely quitting' in their statements, however, a few also mentioned occasional substance or alcohol use following their statement. Participants either mentioned drugs as a whole or MDMA in particular. Moreover, some participants also mentioned the time it had been since they quit. The following participant spoke about having quit drugs, but recently started drinking, as well as smoked a joint, which they mentioned regretting:

> *I quit everything, but I recently started drinking again because I can't deal with the social stress of not drinking. Smoked a joint this last Saturday as well for the first time in 6 months. Felt like shit, not gonna do it again. (Participant 75)*

Moreover, some participants mentioned having quit but the possibility of going back to MDMA use in the future.

> *Like I say, yes, I've pretty much quit. If any appears from a reputable source and I'm in the right situation (e.g. no kids about), I'd do it again in a second. (Participant 79)*

4.1.1.2 Cut down (41 references, 2.48% coverage)

Most participants who had mentioned a change in their drug use patterns identified under this particular subtheme. Individuals mentioned cutting down or calming down compared

to the past, while some including further details such as being open to drug-induced experiences in the future, or that they did not buy anymore and would only take when MDMA was offered. Furthermore, some participants stated that they would still consume MDMA if they were sure of the quality. An example of this is participant 45, who stated that they have considerably calmed down, and defined this on the basis of no having a problematic drug use pattern, and later goes on to explain that they would still use MDMA as long as it was from a reliable supplier:

> *I have "calmed down" considerably, which is to say that I still use but not to the extent that the use is problematic. That said if I could I would still very much prefer to use MDMA if I could obtain a reliable quality supply. (Participant 45)*

Other participants discussed their current state concerning different substances, most commonly mentioning MDMA, cannabis, and alcohol. An example of this is Participant 55 who described having calmed down while including details about the current regularity of consumption of cannabis, alcohol, MDMA, mushrooms, and Vyvanse:

> *I have calmed down an amazing amount. I smoke weed and drink only at parties, and have shrooms and MDMA for festivals and "vision quests". I occasionally use* Vyvanse *to assist with homework. (Participant 55)*

Moreover, other participants mentioned reasons for their 'calm down', such as responsibilities, or 'giving my body a chance to recuperate'.

4.1.1.3 Unclear (17 references, 0.88% coverage)

This section consisted of participants who had only answered yes, confirming that they had quit or cut down their drug use, or not necessarily identifying which one in particular or mentioning quitting and cutting down at the same time. Moreover, some participants gave more details about their current state of drug use, by mentioning a certain frequency or different drug use patterns and different frequency among different substances. The following participant confirms the change in their drug use pattern and states that their current drug use of 'hard drugs' is far from addiction. They also explain their consumption patterns for cannabis, tobacco, alcohol, and hallucinogens:

> *Yeah I'm not into hard drugs anymore. I mean, I do a bit of coke every so often but that's only hard from an addiction and damage potential, it doesn't get you fucking wasted. I don't smoke weed, tobacco and really get drunk. I don't mess with hallucinogens or anything like that anymore, I've seen it all. (Participant 41)*

Moreover, some participants mentioned not wanting to rule out ever doing it again, albeit having quit/calmed down momentarily, such as the following participant:

> *I have quit/calmed down for the moment, having not touched any drugs for the past 2 weeks. (Participant 62)*

Another example of a participant who was placed in this category is participant 43, who mentioned being on a long-term break from MDMA, but did not identify with any of the previous subthemes:

I consider myself on a long-term break from MDMA. (Participant 43)

4.1.2 How (53 references, 5.76% coverage)

This subtheme explored and expanded on the ways individuals quit or cut-down on their drug use. Following confirming a stop or a reduction in their drug use patterns, participants spoke of the driving forces, the intentional, unintentional, and natural forces that contributed to their quitting or cutting down. Five subthemes were identified in respect to all of the responses of the participants: change; naturally; personal and social identity; just stopped; and professional help. Each subtheme will be further discussed below.

4.1.2.1 Change (13 references, 1.62% coverage)

This subtheme includes participants who identified a change as the moving force behind their cutting down/quitting process. Changes in social circles and outings were commonly mentioned. A change in social circles could be separation from people and the social circles one was previously involved with. A change in outings was commonly described by participants as reducing the frequency of outings, and in some cases an isolation from raves, clubs, and MDMA associated locations in general. The following participant described the experience of socially isolating him/herself as well as explaining their views on MDMA and psychological addiction:

I had to isolate myself from people in my social circle to get away from drugs as it was easier to become involved with drugs by association. In terms of psychological dependence, for me there was none, I even quit smoking tobacco after ten years with

little effort. If someone is motivated enough to do something i.e. not take MDMA then it is not hard. (Participant 3)

Another participant mentions 'breaking friendships' and looking at himself in order to change:

I had to break a few good relationships and look myself in the mirror a lot to finally change. (Participant 70)

Moreover, a change in outings and attendance of social events was at times accompanied by the mentioning of alternative activities, finding new hobbies, which were not compatible with MDMA, or putting the focus on something else, such as school and homework. One particular participant mentioned 'just being done with that lifestyle' and expands on this notion by explaining how yoga 'took over' their life:

Didn't take much, I was just done with that lifestyle. I also started practicing yoga which completely took over my life in a positive way. (Participant 7)

The next example is an individual who mentioned restricting their outings:

I had to restrict my night outs. There wasn't any point going to raves anymore or clubs sober. I had to remind myself of the great time I had with it. How lucky I felt. And accept that I could not take it again, at least for a long time. (Participant 10)

4.1.2.2 Naturally (16 references, 1.61% coverage)

Some participants described the quitting/cutting down process as a natural process, and one that they did not need to put much effort into. Individuals in this subtheme commonly expanded on this natural process in different ways, such as stating that they did not have to do anything or make any big changes, that it was a natural process, that it happened through the evolution of life experiences, with time, and stopping by itself. One participant described how their drug use changed naturally through the evolution of life, while stating that addiction has never been a particular problem for them:

> *My drug use changed naturally through the evolution of life experiences. I have never had any kind of addiction problems, and even smoked cigarettes for 18 years without becoming addicted. I quit 8 months ago and have never had a craving since. Once, back in 2001, I caught myself liking the feeling of methamphetamine a great deal. That was indication enough for me not to continue it as a habit. (Participant 53)*

It is important to note that a few participants described their experience as a gradual one, as it was often mentioned that use slowly and gradually lessened. Participant 56 described the quitting process as 'slowing down', while mentioning getting tired of the recovery period and neurotoxicity concerns as contributing factors:

> *Quitting occurred naturally. Simply grew tired of recovery period and unbalanced trade off of intense temporary pleasure for consistent discomfort over a far greater*

length of time. Use slowed until stopped entirely. Concern over neurotoxic effects also contributed. (Participant 56)

4.1.2.3 Personal and social identity (9 references, 1.04% coverage)

Frequently while participants discussed the 'how' of their quitting/cutting down process, they mentioned personal and social identity as being motives for quitting or cutting down. One motive was identity. Additionally, identity was expanded on by participants in terms of having to convince oneself of self-worth, realizing whom they really want to be, and deciding that they wanted to be a certain way. Another common motive mentioned was the encouragement of family and friends, as well as getting into a new relationship. The following participant highlighted finding a motive through convincing him/herself of their self-worth, parental encouragement, as well as discussing the adverse effect of the negativity, of their mother, as well as health problem that followed post and during drug use:

I had to convince myself that I was worth more than what people were calling me (druggie, slut, dope whore, etc.). My father also encouraged me to better myself, constantly reminded me that I could be better, and do better. My mother constantly belittled me and made me feel worthless about the drug usage which led to more drug usage. I did however, check myself into the hospital when I was 15/16 after I lived in that drug house. Because when I stopped doing the drugs, it caused me to be sick all the time. I was hospitalized for 2 weeks, but under the alias of bulimia, which I was also going through around the same time as the drug abuse. (Participant 1)

Another participant described the connection of identity as a motivator to the change in their drug use patterns, while sharing the techniques they used and highlighting exercise as a main first step:

> *I think the best thing I did to change my drug use was to look at the type of person I wanted to be and actually write out those statements like "I am an Athlete", "I am an Artist", etc. And doing drugs where (for example) it will be difficult to wake up in the morning through that lens. But if I worked all day, and I ran 5K in the morning, then I don't mind having a few beers with friends that evening. And as I accomplish certain goals, the satisfaction of seeing hard work pay off is better than one night of fun that leaves me feeling worst the next day. Although even getting to that point where you see a 'future self' can be difficult if you have depression and are taking drugs to escape. Mostly though I would say exercise was the first real step I took from what was my 'rock bottom'. (Participant 42)*

Moreover, participants also explained that seeing what happened to other people, learning the altering consequences, and learning about possible side effects and health issues became motives for them.

4.1.2.4 Just stopped (9 references, 0.84% coverage)

A few participants expressed how they 'just stopped' consumption. Moreover, these participants commonly mentioned how there was no quitting process, while mentioning going 'cold turkey' one day, as they had lost the drive to use. Furthermore, some

participants mentioned still having cravings especially while in a rave/concert environment. Participant 9 spoke about not going through a quitting process, and described still getting cravings and not abstaining from drugs completely:

> *There wasn't really a "quitting" process, I just stopped taking them for a while, and now sometimes if I feel like I do. I tell myself to slow down a little and control my impulses more, but don't deny myself drugs completely. (Participant 9)*

Another participant expanded on how they have dealt with their cravings at music events such as concerts:

> *Certain things like a concert will make me crave drugs. But after making myself go sober a few times to prove I could do it I don't think about it anymore. (Participant 19)*

The following quotation illustrates the experience of just stopping as reported by a participant who mentioned the drive not being there anymore:

> *I didn't really have to do anything. One day the drive to do it anymore just wasn't there anymore so I didn't. (Participant 73)*

4.1.2.5 Professional help (2 references, 0.26% overage)

The fifth and final subtheme within how individuals quit/cut-down their drug use was through professional help. Two participants mentioned getting professional help in order to

quit/cut down. One participant reported needing to get professional help, explaining that they used to be an ex-addict and expressing their views on correct MDMA use. This particular participant mentioned getting professional help it as an aid to quitting Ketamine use:

> *As an ex addict, I sought professional help and was in therapy for 6 months to curb and eventually quit my Ketamine use. However, I do believe that MDMA when used correctly and responsibly is no more harmful than drinking 4 beers down at the pub. (Participant 85)*

Another participant mentioned getting professional help, saying:

> *I had to admit I had a problem and get professional help. (Participant 90)*

4.1.3 Why (36 references, 4.37% coverage)

Participants who identified as ones who had now quit or cut-down their substance use, often highlighted another aspect, which consisted of factors which contributed and eventually led them into making this decision or for this to happen. This theme explored the reasons and the driving forces behind the conscious or unconscious decision to quit or cut-down. The analysis revealed five reasons why participants commonly quit or cut down on use: Change, Growing out of it, Not the same anymore (a. doesn't feel the same, b. quality dropping), Bad experience, and Family or loved ones. Below is a detailed explanation of each subtheme.

4.1.3.1 Change (14 references, 1.79% coverage)

Changes were most commonly identified as being due to career, education, location, or relationships. Participants often spoke about new responsibilities, which occupied their life, such as finding a new full-time job, needing to function at work, and getting busy with school. One participant described their calming down process being caused by responsibilities such as having a job and attending to their hobbies, as they explain MDMA prevents one being productive. Moreover, they explained that they would still take MDMA if they had a better paying job:

> *I have calmed down a little bit compared to when I first started using MDMA, but that's because of other responsibilities that must come first. Like having a job, saving money, or doing your hobbies/passions. If I had a better paying job I would probably still be using MDMA every weekend. My drug use hasn't really cause any problems in my life, because I know that it's not ok to do those things all the time, I wouldn't be able to be a productive member of society if I was on MDMA all the time, everyday. (Participant 57)*

A few participants had mentioned a change in location to be a key change in their life, which had led them into quitting or cutting down. Individuals with such stories cited moving to a country with strict drug rules, moving to a place with fewer nightclubs, and simply moving away from the environment that previously encouraged drug use. Moreover, some participants also mentioned getting in or out of a relationship, and having friends who had all settled down as changes that affected quitting or reducing use. A participant described the experience of being abroad which eventually lead to thoughts of taking a

break or quitting. They also mentioned ending a relationship with a partner who was a drug-addict as a contributing factor:

> *A major catalyst in gaining new perspective was the time I spent abroad, so approx. months dry from drugs. I drank a lot, but didn't do drugs. Being away from the people and away from the life I had been living gave me insight into how bad my partying ways had become. When I came back even though I still had pretty serious drug use over the next year or two, I wasn't as satisfied anymore and I talked and thought a lot about taking a break or quitting. A major factor in decreasing my drug use was ending my relationship of four years with someone who was a drug addict. I think to some degree I just grew out of it. I started wanting more for myself than depression, hangovers, and money spent with no tangible gain. (Participant 33)*

4.1.3.2 Growing out of it (11 references, 1.29% coverage)

This included participants who spoke about being tired, have done enough, getting out of their system, learning to respect drugs, and being at a phase in life where they no longer had a desire for drugs. Moreover, a couple of participants had mentioned age and becoming 'mature' as a reason for their loss of interest in drugs. The following participant explained no longer getting excitement out of getting high, and went on to speak about having a child as a turning point in their life, as well as no longer being able to afford to waste money:

> *I honestly don't feel the desire to roll or trip anymore. It doesn't excite me like it used, though if they were put right in front of me, who knows? I had a kid that was the turning point. I can't afford to waste money. (Participant 86)*

Another participant mentioned the factor of age having an effect on their outings and drug use by stating:

> *I'm in my late 30s and don't go clubbing/festivals very often now so my "drug honeymoon" is well and truly over. (Participant 68)*

The following participant highlighted 'learning respect' for drugs as a factor for the changes in their drug use habit:

> *I learned to respect hard drugs and use them for special occasions. Pick your poison they say… (Participant 31)*

4.1.3.3 Not the same anymore

Some participants described drugs not being the same as being a factor for making alterations in their drug use habits. This category was divided into two subthemes: a. Didn't feel the same anymore, b. Adulteration.

a) Didn't feel the same anymore (3 references, 0.35% coverage)

This subtheme highlights the experience of individuals who reported that MDMA was not the same anymore. This included the effects wearing off with frequent use, and its strength decreasing, also experiencing adverse effects. The following participant described their experience of the loss of euphoria post initial use:

The reduction in drug use was a progressive decrease, as its consumption was used only as a recreational device every once in a while, after the initial euphoria and novelty wore off. (Participant 5)

Another participant stated the adverse effects, which resulted in them on having no choice but to stop MDMA use:

I no longer use MDMA because it does not work on me and makes me feel cold and drained. I had no choice but to stop. (Participant 17)

b) Adulteration (2 references, 0.23% coverage)

The drop-in quality of drugs was another reason mentioned by a few participants. Difficulty in finding a reliable source of good quality drugs as well as a fear of bad quality drugs were contributing factors mentioned by the participants. A participant mentioned no longer having trust explaining that they no longer know what is in the drugs. Another participant explained that good quality drugs are difficult to find and the risk is no longer worthwhile:

The drugs I was being sold were no longer quality, pure drugs. Pure chemicals are extremely difficult to find on the street, and I don't believe the risk to be worth the reward when consuming unknown substances. (Participant 20)

4.1.3.4 Bad experience (4 references, 0.43% coverage)

A few participants mentioned a bad experience as a reason for changing their drug use pattern. Bad experiences included getting into trouble with the law, having a bad high, or

hitting a crisis. Participants in this subtheme commonly mentioned a negative turning point in their life, which led them to a decision to make a change. Some participants spoke about their negative experience with MDMA in particular, while others spoke about drugs as a whole, or excluding MDMA. One participant in particular mentioned getting arrested and spending most of their money, while stating that this never happened on MDMA in particular:

> *I was alcoholic so spent all my money on alcohol and had many arrests (never on MDMA). (Participant 11)*

Moreover, another participant spoke about hitting a state of crisis on MDMA in particular:

> *It's embarrassing that I had to hit a state of crisis before I woke up to realizing that MDMA has no longer acting as positive force for me. (Participant 43)*

4.1.3.5 Family or loved ones (2 references, 0.27% coverage)

This subtheme includes the participants who mentioned family or loved ones as a factor in the changes in their drug use. The participants in this subtheme mentioned family and relationships as incentives for changes in their drug use, whilst one mentioned that the stop eventually came from him/herself, and the other participant mentioned having previously stopped due to a past relationship, but taken drugs again since the relationship has ended, although not to the same extent. The following participant described their experience as:

I stopped mainly because of an ex-girlfriend but have done it again since the relationship ended but never to the same extent. (Participant 2)

The other participant described their experience of admitting their drugs-use to their parents as the only help, and a benefit to their livelihood, while stating that ultimately the stop came from himself:

My parents could tell something was up with me after coming back from university whilst being on drugs and carrying them on whilst I was at home. I told my parents about everything I took, which really came down to honesty about the whole thing. I used to lie quite a lot as a kid, generally about the smallest things apparently that not what you're meant to do that, definitely helped. Since I spoke with them about the drugs I took I have benefited in every aspect of my livelihood. I didn't need any help outside of home but still things got pretty weird coming out of the drug world and living without them. The stop did come from myself though, as I wanted to carry on taking them I would have done so I'm quite stubborn in that respect. (Participant 13)

4.2 No (10 references, 1.54% coverage)

When asked if participants considered themselves to have quit or cut down, a few participants answered no. Often participants who answered no to this question did not answer the second part of the question as it did not apply to them. Individuals responded no stating that they had quit just for now as circumstance had forced them to, that they were safe with drugs or that they had never been heavy users so they do not see a reason to, that

they were still consistent, that they liked MDMA, or that they used it occasionally so no changes were needed. The following participant stated that they take more drugs than ever, while describing their experiences with prescription pain medication and heroin:

> *NO, I take drugs more often now than I ever thought I would previously. After a two-week binge on prescription pain medication like Vicodin and Perocet, I began lusting after heroin. This for me was a wake up call for opiates, and I decided right then and there to stop using if these desires had suddenly arose. The withdrawals for the next few days were mild but they made me grateful I had chosen to stop using. (Participant 71)*

Moreover, some participants stated still having some time left until they would quit. A participant described their drug use as:

> *I haven't quit, I've been pretty consistent, I've still got a couple years left in me. (Participant 44)*

Another participant explained making the mental step to quit, but stated that they did not consider themselves to have quit as they have not been sober for long enough:

> *While I believe I've made the mental step to quit, I can't really say that I've quit until there is some time between now and the last drug-use. (Participant 101)*

In summary, the majority of participants reported a change in their drug use patterns, most commonly reporting a cut-down in their use rather than a complete stop. How these changes happened was most commonly linked to being through a natural process and without much effort, although a minority of people stated making intentional choices and making change through a change in the social circles they are associated with. Furthermore, change was also reported as the main cause of why people's drug use habits changed, for example a new job or location, might cause a change of drug use patterns.

5. Changes in user's life

Question: What is your life like now compared to how it was then? (How do you feel MDMA and other drugs have changed you? Tell us the best and worst aspects of your life while using MDMA.)

This question was designed to grasp a better understanding of how drugs can change a person. It was to understand how individuals felt they had changed, when they looked back and compared their lives now to before. The question focused particularly on MDMA, asking participants to expand on the best and worst aspects of their life while using it. Most participants stated both the best and the worst aspects, while sectioning off their answers by positive and negative signs. Moreover, a few participants stated they had only experienced positive or negative aspects on MDMA on their lives. The analysis of this question yielded four themes: Positive changes; Negative changes; Negatives compared with positives; and Neutral. Positive changes included 12 items: Appreciation of being sober; becoming a better person; euphoria and happiness; feelings and emotions; fun; life and mind changing; music appreciation; sociability and bonding; spirituality; therapeutic; self; other. Furthermore, the Negative changes were of five types: Negative feeling and side effects;

bad highs, comedowns, and hangovers; addiction; conflict with others; other. The neutral category does not contain an item list.

5.1 Positive changes (93 references, 9.59% coverage)

Positive changes refer to the positive ways in which participants had identified MDMA had changed them, as well as the best aspects of their life while using MDMA. Some participants clearly stated these aspects by mentioning that they were positive, while other ones referred to changes, which were identified as positive changes by the researcher. These changes were identified through the following categories: appreciation of being sober; self-growth; euphoria and happiness; feelings and emotions; fun; life and mind changing; music appreciation; sociability and bonding, spirituality; and therapeutic. Each individual subtheme will be further discussed below.

5.1.1 Appreciation for being sober (5 references, 0.68% coverage)

Some participants mentioned finding a newfound appreciation for living a healthy lifestyle and being sober post frequent use. Participants in this subtheme mentioned finding appreciation in living a healthy lifestyle, particularly having a good diet and exercising, as well as being happy sober and the realisation that the did not need drugs in order to be happy. The following participant mentioned appreciation for being clean, while exercising and having a clean diet, as well as stating that they no longer suffered from depression, and perhaps drug use had been a part of journey to get them where they are today:

> *Changed me in a way that I realize how much I appreciate being clean and exercise and have a clean diet. I was struggling with depression those years so I was pretty*

> *miserable overall. When I look back I'm just glad that I have evolved to who I am today. I feel great and no longer suffer deep depression. Perhaps it was part of my journey to get me to where I am now. (Participant 7)*

The next quotation came from a participant who wrote about MDMA and magic mushrooms giving them a positive outlook. Furthermore, they discussed how MDMA taught them about the power of drugs as well as finding authentic happiness in not using drugs:

> *In a positive term, MDMA and specifically magic mushrooms have given me positive outlook. MDMA specifically has given me the admiration for the power of drugs. It is a drug I respect, and use only in special circumstances. It has made me appreciate being genuinely happy without drugs use. It made music become a massive part of my life, putting on a certain song can change my mood for the better in a second. (Participant 55)*

5.1.2 Self-growth (9 references, 0.92% coverage)

This subtheme includes participants who mentioned factors that included an element of self, such as learning to be true to self, opening up with self, getting an understanding of self, finding true self, understanding and focusing on who one wants to be, becoming a better person, and finding comfort in one's skin. The main idea raised by participants in this subtheme was learning and getting to know themselves through their MDMA experiences, which some mentioned led them to other positive experiences and accomplishments. Moreover, mental development, becoming a more loving person, and becoming more

sympathetic towards others were the positive changes that participants identified as affecting them. Participant 45 spoke about developing an understanding of self, which led to a therapeutic experience that assisted in dealing with the death of a child. This participant mentioned therapeutic effects of MDMA, as well as learning and understanding emotions, which are other subthemes, however, they highlighted the experience of finding an understanding of themselves as a leading factor to the other positive factors that affected them:

> *For the most part I found my use of MDMA overwhelmingly positive in that it actually facilitated obtaining a better understanding of myself as a human being and assisted me in dealing with trauma from my childhood and the loss of my daughter. It was interesting how the come-down process actually increased my ability to cope with negative feelings and depression. Understanding that bad feelings (depression) come and go i.e. feelings are in fact temporary and not fixed. (Participant 45)*

Another participant explained being able to open-up to themselves as:

> *I was able to open up with myself, it's a really good thing because I'm a type of person who doesn't open up to no one and tend to hold everything to myself. (Participant 78)*

The last example is a participant who explained being able to be their true self as:

Best: You are yourself, the true yourself, what your brain thinks you are. That's what MDMA does to me. (Participant 21)

A participant stated becoming a more loving person, by helping them shed the cold and crass ego. They state that these changes were due to MDMA alongside other psychedelics. They explained these changes as:

They've made me a more loving person, I used to think it was cool to be a cold and crass person who shut people out due to my own ego, however MDMA in part with other psychedelics helped me shed that ego. (Participant 95)

Another participant spoke about becoming a better person and expanded on this by explaining their helpfulness towards others at raves, as well as becoming more emotionally understanding and open, both towards others and with him/herself:

It's definitely made me a better person. When I go to raves now, I see people that might be having a rough time while under the influence and I know how to help them. The last rave I went to I think I spent half the time out of the crowd just helping people get to water, the bathroom, their friends, or a cab home if they're too burnt out. On an emotional level, it's definitely made more aware of the kind of baggage people can carry and just how well they can hide it. I've become better at talking to people about their or my emotions and issues. (Participant 93)

5.1.3 Euphoria and happiness (4 references, 0.12% coverage)

Participants often spoke of euphoria and happiness experienced due to their MDMA consumption. It is important to note that participants spoke of these aspects both in the aspect of feelings experienced during consumption, as well as the influence of experiencing them in their lives in general. These experiences were explained in various ways, some spoke about the euphoria, happiness, and the joy experienced while under the influence, some explained the effects of experiencing such euphoria and happiness while being high on their life post consumption, others explained that their experiences showed them how happy it is possible to be, becoming happier due to the good memories, as well as becoming a happier and more positive person in general. The following participant is an example of an individual who highlighted feeling of euphoria and its effect on their night and having a good time:

> *As a drug in itself MDMA gives me a very euphoric feeling which allows me to fully let loose and if everybody is having a good time and enjoying themselves then it just emphasizes how good of a night you are actually having. (Participant 15)*

The next participant is an example of someone who spoke about their experiences allowing them to experience extreme emotions. This participant stated that experiencing extreme elated near euphoric feelings, as well as extreme lows of being worn out the next day due to MDMA consumption, gave them a unique perspective on life and happiness:

> *MDMA has change me by allowing me to experience what it feels like to become insanely elated and near euphoric and flipside of feeling weary and worn out the*

next day. I believe having experienced those extreme highs and lows has given me a unique perspective on life/happiness and whatnot. (Participant 4)

Another participant explained that MDMA consumption introduced them to the possible maximum levels of happiness, and this being a driving force for learning to achieve these states without MDMA:

Growing up as a teenager, I had a shitty life and shut down, and MDMA showed me the extent of which I could be happy. Just feeling that the state was possible drove me to learn how to do it on my own. (Participant 83)

5.1.4 Feelings and emotions (6 references, 0.41% coverage)

This subtheme was created in order to include participants who described MDMA experience bringing a positive change to their lives, which involved feelings and emotions. Participants in this subtheme often explained that MDMA helped them to get a better understanding and become more in touch with feelings and emotions. These experiences were explained in various terms, such as becoming more expressive with feelings, development of understanding of sensations, and learning to identify and feel emotions. Participant 18 is an example of someone who explained becoming more in touch with their emotions, hence becoming more empathetic towards other users as well as others, as an influence of MDMA:

MDMA put me more in touch with my emotional side and created a stronger empathy for my fellow users, as well as humanity as a whole. (Participant 18)

Another participant wrote about their experience of MDMA helping them to open up and feel emotions as an introverted person:

> *To some extent MDMA has changed my outlook. I'm fairly introverted and cold person, so in some ways it has helped me open up and feel emotions on a level I'd not have experienced otherwise. I believe it has helped alter my perspective in some ways that are subtle yet positive. I don't entirely regret having used this substance. It's something that I believe was certainly worth trying, at least a few times. (Participant 24)*

Understanding what sensations one is looking for in life, which aids with identification of emotions, even when not using MDMA is the factor, which the next participant stated as the influence of MDMA:

> *It helped me understand what sensations I was looking for in life, in general. This is tremendously helpful in identifying emotions and their triggers, even when not using. (Participant 22)*

5.1.5 Fun (13 references, 0.72% coverage)

Some participants spoke about the fun aspect of their MDMA consumption as the positive factor in their lives. Individuals spoke about having the best nights of their lives while using MDMA, as well as having fun with friends, and MDMA being an enhancement to their outings and a source of enjoyment. The following participant described such

experiences as the best nights of their life, as well as at times having to drink excessively in order to take away some negative feelings:

> *Personally I've had some of the best nights of my life whilst under the influence of MDMA and at my worst I've had to drink till I pass out to just take the feeling of insecurity away. (Participant 15)*

A participant described their experience as really fun, describing it as 'unifying in the grandest sense' due to everyone being on drugs, having the same mind-set, and listening to music:

> *Partying was really, really fun. There is something inexplicable about a group of people on drugs with the same mindset listening to loud repetitive music. I wish more people would experience it. In a word, it's unifying in the grandest sense. The energy is tangible and the connection between people is extreme. This is all due to drugs. The rave scene is founded on drugs and it should not be ashamed to admit it. (Participant 20)*

Another example is participant 28, who described the best aspect of their live while using MDMA the fun and love they experienced, which is particularly special to them due to having mild depression and not getting to experience these feelings often:

> *Best aspects of my life on MDMA is the fun and loving feeling which someone with mild depression and anxiety doesn't get to feel often without it. (Participant 28)*

5.1.6 Life and mind changing (15 references, 1.43% coverage)

Participants commonly spoke about MDMA changing their views on life for the better. They spoke about becoming more open minded, becoming more open to people and ideas, finding new views and appreciation for life, having a clearer mind, and having a life changing experience in general. Some participants gave examples of how these changes influenced their lives, such as participant 25 who spoke about MDMA opening their mind and making them make the most out of life, particularly by going on holidays and travelling more often:

> *Good, doing MDMA made me want to see more of the world, it opened my mind to all of the good things that I could be doing and I now go on holiday often and make the most of my life where as before I was kind of boring. (Participant 25)*

Another participant spoke about MDMA opening their mind, and allowing to connect socially while at a dark stage in their life. They also spoke about going too far with the drug and suffering from physical depression as a result, but being able to pause their heavy use:

> *MDMA open my mind and connected me to some of the most strange and amazing people. It gave me the freedom I needed when I was at a dark point in my life. I also went too far and found how heavy use can create a physical depression. But unlike other drugs, I was able to pause, see what was going on and change my ways. It would be different if I got that lost with Xanax, Meth, etc. (Participant 100)*

Participant 49 spoke about how MDMA changed them for the better, by opening their eyes to the brighter side of life, as well as the remaining happy post consumption while referring back to the memories even despite being depressed from lack of serotonin:

> *I think that MDMA has changed me for the better by opening my eyes to the brighter side of life. I was not very happy before I started using but have been ever since. The best aspect is that while I was often depressed from the lack of serotonin the next morning I would remain happy for a week or so afterwards just from always thinking about the last rave I was at. (Participant 49)*

5.1.7 Music appreciation (4 references, 0.12% coverage)

This subtheme was created in order to include participants who spoke about MDMA and its positive influence on their music preferences. Participants spoke about the music factor in terms such as music sounding better, a change in their music preference, and finding a new appreciation for music. Individuals stated music sounded better both while under the influence, and post-consumption. The following example is an individual who spoke about the positivity they experienced in the sound of music post-consumption:

> *Music sounds better sometimes weeks after my usage. (Participant 57)*

A few participants spoke about a change and a newfound appreciation in music preference. An example of this is participant 87 who spoke about their newfound appreciation for the genre of house music:

Given me a much greater appreciation of house music. (Participant 87)

5.1.8 Sociability and bonding (27 references, 1.67% coverage)

Participants often referred to sociability and bonding aspects of MDMA when speaking about the positive aspects of the substance on their lives. This subtheme includes participants who mentioned an enhancement in sociability, friendships, and bonding, both during the night and in their everyday lives. Some participants mentioned MDMA 'bringing them out of their shell' and allowing them to open up and feel closer to people. Moreover, others mentioned feeling more sociable, experiencing unity, making new and lasting friendships, as well as strengthening existing friendships. The following participant is an example of a participant who mentioned becoming more sociable and opening up to people, and being able to transfer this in their lives while no longer consuming:

Best, made me very sociable, being able to talk to anyone, open up to anyone…I've been able to transfer that though to everyday life. (Participant 35)

Another participant mentioned communication, in the sense of non-verbal communication as:

MDMA gave me insight into how to connect with someone non-verbally to a much higher extent. (Participant 22)

Participant 7 spoke about making life-long friends through experiences with MDMA. This was commonly mentioned by participants, and usually explained as strong relationships

due to the enhancement of sociability, bonding, and different feelings experienced, which brought a better understanding and bonding among individuals. This participant also mentioned feeling empathy due to MDMA consumption and how they think it has affected them:

> *I have lifelong friends that I think I wouldn't be as close to without MDMA as a shared experience, and those special nights that we were able to bond on a different level. Some of the empathetic thoughts and feelings I've experience while on MDMA I do think have had an impact on me today, and I think I'm a much kinder person today as a result. (Participant 7)*

Another participant explained how MDMA strengthened their existing friendships by allowing them to have deep talks and have better connections:

> *MDMA has brought me and my friends closer together. We have had massive deep talks while on MDMA, bringing to light things that aren't working out in out friendships and how we need to fix them, and just generally loving each other. The power MDMA has to make us feel all connected is so weird and indescribable but that's definitely the best thing MDMA has done for me. (Participant 62)*

5.1.9 Therapeutic (22 references, 2.01% coverage)

The therapeutic subtheme was created in order to highlight individuals whose experiences included having a healing and therapeutic element. Statements from this subtheme had stronger meanings than singular or temporary emotions; they commonly consisted of a

combination of other subthemes, as well as new elements at times. Moreover, they were often accompanied by a therapeutic and healing tone. Participants commonly identified previous issues, most commonly depression and anxiety, along with using terms that described a therapeutic and healing process, by such as a cure, overcoming, or simply helping. Furthermore, destroying barriers, learning acceptance, changing personalities, and letting go of fears were other terms individuals used to describe their experiences. The most commonly mentioned factors experienced by individual included a combination of self-confidence, seeing things vividly, feeling happy, finding joy and contentment in life again, confronting emotions and changing thought process, becoming a whole person, happy to be alive, becoming a better person, curing repressed memory, overcoming social anxiety and depression, destroying social barriers, putting away traumatic experiences, letting go of fears and opening up, becoming more empathetic and less uptight. The following participant explained MDMA being a 'cure' for repressed childhood sexual abuse memories, and allowing them to thrive as a person:

> *MDMA cured either something that was a repressed memory, or a self constructed memory of sexual abuse in my childhood past. I have been assured by my siblings that this was indeed repressed memory of child sexual abuse on me by an older family member. By dealing with this so quickly and easily, I was able to dig deeper than could be done with conventional talk therapy, heal, and thrive as creative person. (Participant 58)*

Participant 85 described their experience as being therapeutic in terms of letting go of fears, as well as gaining confidence:

> *MDMA helped me open up to people, and also let go of some self-conscious fears I had. Two positive examples: I had a fear of dogs that I overcame when spending time with a friend who had a massive Rottweiler while on MDMA. One weekend on MDMA with these dogs resolved a fear I had since childhood. Second, as a bigger guy, I was ashamed of my body and would not take my shirt off in public, even at the beach. Several sessions with MDMA at the beach with my friends and that fear was also overcome. (Participant 85)*

The next example is a participant who wrote about being able to contextualize their negative feelings and become stronger from them while under the influence of MDMA:

> *Even though I knew it was the chemistry taking place in my body and brain that was producing these emotions, I was able to put negative, traumatic experiences from my past in the context of how I felt while on MDMA, which in turn allowed me to come to terms with them, or even draw strength from them. (Participant 81)*

Moreover, a few participants mentioned spirituality as a positive experience. Individuals who mentioned spirituality described it in the context of having a spiritual experience, which caused positive change in one's life, having visual experiences, as well as finding happiness and a spiritual connection. A particular participant described as going through a spiritual metamorphosis through their MDMA consumption, which lead them to becoming more empathetic, approachable, and more emotionally available:

I feel like I went through a spiritual metamorphosis. I once went to a counsellor and spoke about how I didn't appreciate my mum and other things that came as a result of breaking up with my ex-girlfriend. I cried, but now I tell my mum I love her every day. My new empathy for it makes me a more approachable person. When people have problems, I can usually speak from experience and offer ear to listen. The initial steps to becoming more emotionally available for my loved ones came from the new dimension that MDMA offered me. It also helped me become more prevalent in my friendship group as I wasn't the guy who judged anymore. (Participant 38)

Another participant described MDMA as being a positive force, which has helped them find happiness and spiritual connections:

MDMA overall has been a very positive force in my life. 90% or so of my experiences have been positive. It's helped me find happiness and spiritual connection at times. (Participant 43)

5.2 Negative changes (70 references, 5.46% coverage)

Negative changes include the negative ways that individuals expressed MDMA has changed their lives, as well as the worst aspects of their lives while using MDMA and other drugs. Similar to the positive aspects, some participants clearly divided the negative aspects through the use of clear wording, while others stated factors, which were identified by the researcher as negative aspects. Negative changes are comprised of five subthemes:

Negative feelings and side effects; bad highs, comedowns, and hangovers; addiction; conflict; other. Below is a further discussion of each subtheme.

5.2.1 Negative feelings and side effects (44 references, 2.90% coverage)

Participants commonly mentioned negative feelings and side effects as one of the main negative aspects of their MDMA and other drugs consumption. Moreover, some participants mentioned experiencing these factors during consumption, while others reported having long-term side effects. It is important to note that some participants mentioned these factors being linked to specifically to MDMA use, while many related them to their drug use as a whole or mentioned the side effects not being a result of their MDMA use. Participants mentioned experiencing various different negative feelings and side effects, such as feeling soulless, unproductive, laziness, stagnation, lack of awareness and self-control, awkwardness (when MDMA was mixed with cannabis), depression, anxiety, stress, seeing the worst in people, feeling like a robot (becoming emotionless), loss of hobbies, becoming touchy and argumentative, becoming suicidal, having memory loss, brain functions slowing down, down regulation of reception, and neurotoxicity. Furthermore, some participants reported suffering from problems of teeth grinding, back pain, a low immune system, as well as becoming severely underweight. While some participants mentioned one or a combination of symptoms, some participants from this subtheme just mentioned having 'negative side effects'. Below is an example of a participant who had reported experiencing stress as a negative side effect from mixed drug use (MDMA and MDA). They further discussed the stress being a consequence of heavy and chronic use:

As a whole though, MDMA and MDA have had a negative impact on my life, more negative than any other substances by far. During the time period I was using it added huge stresses to my life, both as direct consequences of using too heavily as well as the side effects of chronic use. I obviously ended up getting through everything, but in retrospect it would have been much better and much easier to have abstained. (Participant 24)

The next participant referred to anxiety as a negative factor experienced, while stating that MDMA was responsible and later stating that it was due to other drugs:

MDMA gave me anxiety, both while on it and not under the effects of alcohol in general.

They continued:

Worst aspect is anxiety, if you're coming up and don't know what to do with yourself. But the major anxiety trips are usually result of a drug that isn't MDMA, thus not relevant to this question. (Participant 28)

The next participant is an example of an individual who expressed experiencing physical side effects due to MDMA use. They mentioned back pain, which is not a well-known side-effect of MDMA:

Worst aspect for me was the back pain post MDMA use. (Participant 12)

Another participant mentioned becoming touchy and argumentative due to heavy and frequent MDMA use:

> *Now for a bad story: When taking large and frequent doses of MDMA, I would become very touchy and argumentative with my family. Seeing I was out almost every night, it affected my relationship in a negative manner. Fortunately they are good people, and supported me throughout. (Participant 85)*

5.2.2 Bad highs, comedowns, and hangovers (14 references, 0.87% coverage)

Participants often spoke about having a bad high, comedowns, and hangovers as the negative aspect of their MDMA consumption. Bad highs refer to individuals, who had a bad high, or a 'bad roll', due to over-indulgence or unknown substances mixed with MDMA. Moreover, some participants spoke about their comedowns as being difficult and the worst part of the experience, reporting problems such as losing consciousness and lack of sleep. Hangovers were the most common downside spoken about, participants referred to feeling tired and worn out the next day. The following quote highlights a participant's experience of having a bad high, due to the unknown substance present in the pills consumed, as well as low feelings post-consumption:

> *I haven't really had any "worst aspects" of my life, other than feeling down after some nights of use, and the one time I took two pills which turned out to contain MDMA and some unknown substance, which put me in a state where I was asleep in my head/blacked out but my body was still functioning/walking/talking. I was*

blacking out and waking up in random places with my friend, not knowing how I got there or what the fuck was going on. I was in no control and if I hadn't had my friend looking after me that night, I almost would have certainly walked in front of traffic and got myself killed, get into a fight with a stranger or just wander off into the unknown and who knows what could have happened to me. (Participant 62)

Another participant described the experience of having bad comedowns in the following words:

Some bad situations include heavy come-downs where I would lose consciousness for a few seconds. (Participant 6)

'Tuesday blues' was a term used by a few participants referring to the following day after MDMA consumption, where individuals commonly describing having a hangover and low moods. The next participant stated that the negative aspect of their MDMA use were the 'Tuesday blues' which were occasionally felt:

The bad aspects of MDMA have definitely been the "Tuesday blues- the lack of serotonin following a big session has affected me at work, and also contributed to my anxiety at various times. Feeling scatter-brained and unable to enjoy the day can suck, but just as often I won't be feeling this way after a session. Not being able to sleep has made some nights pretty bad. I consider these bad side effects to not outweigh the positives. (Participant 77)

5.2.3 Addiction (4 references, 0.24% coverage)

This subtheme was created in order to include participants who mentioned addiction as the worst part of their MDMA experience. Individuals who were placed in this category specifically used the term addiction in order to describe the experiences. Two participants spoke about addiction within their group of friends as well as themselves. Others described issues with self-control and becoming addicted in order to avoid comedowns. A participant described the experience of being highly addicted as:

> *Worst-Made me feel really uncomfortable when high, made me feel ashamed of myself. Became highly addicted, dependent on getting high to feel welcomed with my friends, that my friendships were based on the drugs, which they were. (Participant 1)*

Another participant described their experience of consuming more and more in order to avoid comedowns:

> *The addiction of taking more just to stop the come down and then feeling worse and worse. (Participant 29)*

Addiction played a negative aspect in the life of participant 96, who mentioned having an addiction to various different substances:

> *The worst part is self control and addiction. I have issues with addiction to a lot of things and won't ever touch highly addictive substance. (Participant 96)*

5.2.4 Family (3 references, 0.21% coverage)

A few participants mentioned a lost connection with family and closed ones as a negative aspect of their drug use. Participants usually explained this by mentioning the stigma of being a drug user distancing them from family members, as it would often force them not to be honest about what was happening in their life. Participant 96 explained a suffering in family ties due to the partying lifestyle and drug use:

> *However, my academic career and familial ties suffered as a result of my excessive partying. Because of the stigma surrounding drug use in the US, I would often have to lie about my whereabouts and activities to some friends and family to avoid being judged or confronted. (Participant 96)*

Another participant discussed not being able to speak to family members about their life due to their reputation of being a 'druggie':

> *Having a reputation as being a druggie, not being able to talk to family about what I'm going through. (Participant 33)*

5.2.5 Other (17 references, 1.22% coverage)

This category consists of other negative changes that were mentioned by the participants, which were less frequently mentioned, or mentioned just once by a particular participant and did not fit into the precious common changes mentioned. Participants in this category referred to various different changes as the negative aspects of their MDMA use. Two

participants mentioned it being a drain on the bank account, while two more of the participants spoke about the substance quality as a factor. Other negative factors mentioned by individuals included: over-sexualisation, building a tolerance, realization of the fragile self, time consuming, fear of authorities, less joy in life, a waste of time, unhealthiness, and recklessness, and wanting to do more. The following participant described the negative experience with getting the right quality of drug, and the risk and the consequences that follow with misunderstandings, such as ruined friendships:

> *The bad is when you get a substance from someone you're taking a risk and sometimes it goes bad. I have had long friendships end over misunderstandings. (Participant 73)*

Another participant described having negative experiences due to having different beliefs from the dealers. They expanded on this experience by explaining being exposed to the world of other addictive drugs due to the fact that it was more profitable for the dealers:

> *The people I got it from did not have the same beliefs as me. To put it simply I would be a hippie. Be kind to everyone and help the world wherever you can. The dealers would sell whatever made money so I came in contact with heroin and other drugs that had very addicted users. It's a downer when you are trying to buy something to have a party and other person in the house is trying to trade a ring (probably a relatives) for a small amount of heroin. I was always propositioned about buying these other drugs. These drugs were much better sellers for the dealer*

because people need them every day not a few times a month maximum. (Participant 19)

The following participant mentioned building a tolerance as a negative aspect of their MDMA use:

Worst: knowing my next dose won't get me high, only cure the hangover. (Participant 40)

Money is a factor mentioned by a few participants while describing other negative factors of their experience. The following participant mentioned unhealthiness, spending too much money, as well as trouble and fear of authorities as the negative aspects of their experience:

Short term, it felt extremely unhealthy, I smoked a LOT of cigarettes when I was rolling, and spend way too much money on it not mention dealing and constantly having run ins with police and undercovers. Very stressful when you have a close call, or the police show up. (Participant 94)

5.3 Negatives compared with positives

This section was created to further explore the participants who identified drugs playing a negative role on their lives. In total, nine participants reported negativity caused by their drug use on their lives. These participants could be divided into two groups: ones that stated being addicts or excessive users, whose overdoing habits caused them different types of problems (such as health or financial problems), or those who spoke about the role being a negative one, but stated positive factors as well, stated the experience being an

experimental one, or stated that they would do it again. This participant is an example of the first group, who spoke about being addicted, while explaining that if he had limited his usage it would have been beneficial:

> *I was an addict. I was using MDMA to seek happiness and block out the stresses in my life. If I had limited my usage more I think it would have been purely beneficial to my mental health; along with therapy; however I abused the drug and suffered because of it. (Participant 96)*

The following participant is an example of someone from the second group who explained the experience as a very negative one, but stated that he overall enjoyed it and would do it again, just not extensively:

> *I certainly see my drug use as a hindrance to my younger life (19-22 years old). I am very glad I didn't start before 19 years old. I think ecstasy (MDMA) was the source of any anxiety I've ever felt. I didn't know what it was until I had taken MDMA a few times. I've taken psychedelic mushrooms; dextromethorphan (cough syrup; psychedelic at higher dosages); cocaine; alcohol; marijuana; nitrous oxide; salvia divinorum; and several others I may not remember as well as unknown drugs that were put into pressed pills. Now; I take far less. Cocaine every few weeks if someone has it around; otherwise just alcohol when I go out and I'll smoke some weed once every few days. Overall I've enjoyed them and will do them again. Extensive use can be harmful to one's goals if they wish to accomplish a lot of things but fortunately for drug users they don't usually want to accomplish much. I*

am/was borderline or beyond borderline addicted. But if I'm truly an addict; it is not to the extent that I see others who would not acknowledge the possibility of addiction or simply don't care. I never did drugs every day; possibly 3/4 weekends for a year. I don't regret it but I probably would be better off not having done that. (Participant 28)

5.4 Neutral (9 references, 0.96% coverage)

When asked how individuals felt MDMA and other drugs have changed them, and to describe the best and the worst aspects of their lives while using MDMA, some participants mentioned not being sure it had changed them, not particularly being changed, or remaining exactly the same. The participants in this category are those who mentioned the experiences being neutral to them. Moreover, some mentioned no change while expanding and mentioning some positive and negative aspects. Participant 56 is an example of an individual who mentioned the experiences not particularly changing them, while the expanded and explained that the experience taught them about different levels of pleasure, which are not possible to be experienced without chemicals:

Have not particularly changed, other than simply having known a level of chemically-induced pleasure typically higher than the threshold of any natural experience. This does not reduce the level of joy gleaned from other activities, and there is no great desire to need to over achieve that level of pleasure again, being that it comes with such a great price. If rolling without crashing or destroying brain cells were possible, would probably reconsider quitting. (Participant 56)

Another participant described their life as being not any better or worse, while explaining that most of the negativity that came with their experiences was due to the alcohol being consumed simultaneously, while mentioning that overall this has been a good experience, especially due to the fact that it was all experienced at a later age:

> *My life isn't any better or worse now, it's always changing. I did some embarrassing/damaging things on the nights I used MDMA in conjunction with alcohol but that was mostly the influence of alcohol and my inexperience with it that led to those things. Apart from that it was all good times, never did stupid things like drove under the influence, I never missed work, never fuck up any friendships…I think experimenting with drugs as an adult years after college instead of as a child has been a good experience and I don't regret it at all. (Participant 63)*

Another participant's neutral experience is described by expressing uncertainty whether if it was the drug that had changed them or just growing up in general. They continued by mentioning that drugs have being influential in their judgment towards the justice system:

> *I can't definitely say whether drugs have changed me, or whether it was simply growing up that changed me. I believe to a certain extent drugs made me question the validity of the justice system and treat the government and generally the law with suspicion. I do not really understand the last part of the question. (Participant 101)*

In summary, positive changes which were made in individuals due to MDMA and other drugs were more commonly reported as direct changes of MDMA in particular, whereas the negative changes were more commonly related to drugs collectively (although some mentioned MDMA in particular). Positive changes included more long-lasting influences such as an improvement in social skills, having therapeutic factors, as well as becoming more open-minded. Negative influences most commonly included negative feelings and side-effects, which were related to drugs collectively, as well as strictly MDMA by some (some short lived and some long-lasting), as well as bad highs/come downs/hang overs (a short-lived effect), which was more commonly linked to MDMA.

6. Advice

Returning to the core themes, Advice is the sixth and last main theme. The question relating to this core theme was: What advice would you give? (What would you tell someone who wants to take MDMA? What advice would you give to someone who wants to cut down or quit MDMA?). The idea of this question was to further discover the advice that the participants would give to an individual who would want to take MDMA, and for someone who would want to cut or cut down their MDMA consumption. Results were organized and categorized into two main themes: Trying and Quitting/cutting down. The analysis revealed 10 sub-subthemes, which highlighted the advice that the participants would give to someone who wanted to try MDMA. These subthemes were: right people and environment; don't; don't mix, dosage; educate, know what you are getting; moderation; right state of mind and mindfulness; hydration; and other. Furthermore, the data identified six subthemes within the quitting/cutting down theme. These subthemes were: lifestyle change (distancing from association, and replacement), self-reflection and

finding motives and goals, just stop, professional help, tapering down and using for special occasions, and other.

6.1 Trying (100 references, 9.29% coverage)

Trying refers to the advice that participants would give someone who wanted to take MDMA. There were 10 categories formed within advice for taking MDMA, nine of them being the most commonly identified subthemes (right people and environment, don't, don't mix, dosage, educate, know what you are getting, moderation, right state if mind and mindfulness, and hydration) and a category called other which consists of other advice which was mentioned by participants but did not fit into the other categories. Below is a detailed description of each theme with quotations from participants in order to highlight and personalize individual data.

6.1.1 Right people and environment (25 references, 1.41% coverage)

Right people and environment refers to participants who commonly mentioned being around the right people and in the right environment when taking MDMA. Participants commonly mentioned these two factors, in combination and at times one or the other. Being around the right people was referred to in various different ways, such as being around safe friends, close friends, friends with previous experiences, having sober friends around, surrounding yourself with good people and vibes, and surrounding yourself with people you care for. It is important to note that participants mentioned being around the right people in both the sense of having experienced people who could guide you, as well as being with loved ones, as this enhances the experience. Moreover, participants explained being in the right place by using terms such as being in a place with the right vibes, a place

with peaceful psychedelic vibes, a place with safe and a comfortable environment, a rave or a concert, a safe place. A couple of participant also mentioned the importance of having an exit strategy and somewhere safe to go just in case. One participant advised others on taking MDMA in peaceful setting, while encouraging others to try it:

> *Consider doing it in a peaceful, psychedelic setting. But do it. I encourage people to try it. I think it's a very, very positive force with incredible therapeutic applications. (Participant 43)*

Participants commonly mentioned the comfort factor when referring to the environment where MDMA should be consumed. A rave, a concert, or psychedelic settings are all different settings that were referred to as the ideal setting. Moreover, two participants advised others on taking it in an 'overwhelming environment'. Even though the choices of words are not exactly similar, the explanation of each individual's ideal place seems to refer to an ideal comfort place according to the situation and the individual's characteristics. For example, the following participant mentions being in an overwhelming place as they explain it could be helpful in order not to get stuck in their own head (providing more comfort), as well as advising being around close friends who are also taking MDMA:

> *I would tell them to go to a rave or a concert or somewhere where they can be distracted, and with close friends who are also taking it. For me MDMA (or any psychedelic) is a little hard to handle sitting in a room by myself because you're left to your own thoughts. Some people swear by this, but not me. I like to be in an*

overwhelming environment where I don't have a chance to be stuck in my own head. (Participant 57)

One participant described the importance of being around people who cares for in the sense of enhancing the experience of MDMA:

They should be around people they care for as well, as that greatly enhances the feelings of ecstasy causes. (Participant 71)

Another participant highlighted the importance of being with trusted people in terms of being in a good mood and being looked after:

Who wants to take it: Do it with people you trust when you are in a good mood.

They continued:

Use the buddy system. Rolling people are great at looking after one another but tend to neglect their own needs. Remind each other to drink water every now and again and don't wander off alone no matter how great it feels to walk and listen to music. (Participant 47)

6.1.2 Don't (3 references, 0.25% coverage)

Three participants advised others not to take MDMA. These participants cited issues such as addiction due to impurities of MDMA, possibility of overdose and other side effects, as

well as MDMA not being safe as reasoning for the advice given. The following participant advised others not to try it, as they state could be addicting and harmful due to the fact that pure MDMA is no longer existent:

> *It'll probably be one of the most fun experiences you'll ever have- but you'll end up liking it so much that there's a big change you'll become addicted/close to. So if you've never done it, I suggest not doing it. It's also extremely bad for your body; pure MDMA doesn't even exist anymore. No one really knows what these pills have been cut with. (Participant 46)*

Another participant stated that they would advise one to take other drugs that are safer than MDMA:

> *I would tell someone who wanted to take MDMA that they should consider taking something else instead. There are better and safer substances than MDMA. (Participant 24)*

6.1.3 Don't mix (9 references, 0.11% coverage)

This category refers to participants who advised others not to mix MDMA with other drugs and alcohol. Participants most commonly mentioned alcohol as a substance not to be mixed with MDMA, stating that it should not be taken before or at the time of consumption, except for one participant who stated that alcohol is ok to consume within certain levels of drunkenness. Others gave advice not to take cocaine and 'other drugs'. One participant

advised staying away from everything, while specifying how alcohol could ruin the experience of MDMA before it even starts:

> *Don't mix anything. Alcohol could kill your roll before it starts. (Participant 47)*

Another participant mentioned staying away from everything but alcohol, as long as its consumption is within certain levels:

> *Don't start doing other drugs after the MDMA besides alcohol and but don't go beyond a 6-7/10 level of drunkenness. (Participant 104)*

Another participant advised others not to mix MDMA with other substances until they were experienced with the drugs:

> *Don't mix substances until they have experience with both drugs. (Participant 89)*

6.1.4 Dosage (20 references, 1.05% coverage)

Participants commonly gave advice about the dosage that should be consumed when using MDMA. Most advised taking a small dose the first time, while others advised specific dosages to be taken. Participants also mentioned making sure the dosage is appropriate, knowing your limits, calculating the dosage, staying within doses, not re-dosing until peaking, and not doing more than one is comfortable with. A couple of participants also mentioned knowing what you are getting and testing your MDMA before consumption, in combination with advice on the dosage of consumption. One participant advised others to

not take big amounts of MDMA their first time and wait and see what they are comfortable with before taking more:

> *Because it is your first time I wouldn't take a serious amount first of all. If I was new to a drug I'd only have a miniscule amount at first to see what I am going to experience and if I am comfortable with it then I would take a bit more. (Participant 15)*

The next example is a participant who gave similar advice in terms of starting with a small dose, as well as advising others to be aware of individual differences:

> *I would tell someone that wants to take MDMA that everyone has different body chemistry and there's no one guaranteed effect/reaction to it. So start very small (like a half standard dose). (Participant 63)*

As previously mentioned, some participants referred to specific dosages when advising others on how much MDMA should be consumed. Dosages varied in quantity, ranging from 100 mg, 100-120mg, 100-150 mg, 130 mg and adding 40mg an hour later, 150 mg, and 500 mg. The following is an example of someone who advised a dosage of 100-150mg for someone who is trying MDMA for the first time:

> *Take small dose for your first time between the 100 and 150mg range. The first hour of the experience is called the come up which may be over stimulating. (Participant 88)*

The next participant is an individual who advised a much higher dosage compared to the previous example:

> *Take ½ gram and just go about your night. (Participant 47)*

6.1.5 Educate (18 references, 1.17% coverage)

This category refers to participants who advised others to have awareness and an education about both the drug and its side effects, as well as learning how to handle situations that may be caused due to the drug consumption, such as a bad trip. Participants very commonly mentioned that one should research everything about MDMA before consumption. Moreover, some participants mentioned particular websites as possible sources of information, most commonly rollsafe.org, and others such as Erowid Vault, pillreports, bluelight, and ecstasydata. Educating oneself included researching and gaining awareness of factors such as side effects, pre- and post-supplements, healthy dosage, and safety aspects. The following participant advised others on researching the drug and gaining an understanding of healthy consumption:

> *Do your research on the drug. I believe in completely understanding a drug before taking it and understanding healthy usage. Know how much is too much, and limit yourself under that. (Participant 96)*

Another participant highlighted the importance of researching before consumption:

RESEARCH anything you are going to take. It's amazing how few people do even a 5-minute Google of drugs they want to take. This is most important. (Participant 66)

The next participant is an example of an individual who advised others on following instructions from the www.rollsafe.org website:

I would tell them to follow the instructions on rollsafe.org and they should be good. (Participant 92)

6.1.6 Know what you are getting (34 references, 1.65% coverage)

Common advice given by participants to someone who would want to do MDMA was to know what you are getting. This refers to both buying the substance from a reliable source as well as testing the substance pre-consumption in order to ensure purity and quality. Some participants particularly highlighted the importance of having a reliable and trustworthy source, some emphasized the importance of testing your drug, and some mentioned both, while all mentioned these actions to be done in order to ensure one is getting good quality MDMA. The following participant highlighted the importance of testing pills, stressing that crystal MDMA has a higher chance of being pure compared to pills:

If you're going to take MDMA, make sure you test your pills as I've found there's a higher chance of getting pills cut with bad shit than crystal MDMA cut with bad shit. I've found 9/10 times that crystal MDMA has had much better effects compared to pills. (Participant 62)

Participants very commonly mentioned test kits as a tool to be used in order to ensure purity and quality of MDMA. Participants often suggested that people who would like to take MDMA purchase these kits and use them to test their substance before consumption. Participant 94 stresses on the importance of testing pills and everything else with a test kit:

> *TEST. YOUR. PILLS. Actually, fuck it, test everything you have. Marquis/Mecke reagents tests. There is nothing worse than finding out you did some BK-MDMA instead of the real deal and having it burn the hell out of your nose and throat, or overdosing. Test it, test it, test it. Yell at your dealer if he sold you fake shit and don't go back. Test. Your.* Drugs. *(Participant 94)*

The following example highlighted the importance of having a reliable source, and even knowing someone who has tried the substance before taking it:

> *I would advise someone to not try MDMA from purchased in the street or a club. Know who it is being bought from and know someone you trust that has taken it. These days, too many people have tried it or do take it and there are too many bad MDMA suppliers (from what I've read and heard). (Participant 23)*

Similarly, this participant also spoke about the importance of having a reliable source that has actually tried their own MDMA before, as well as advising others not to buy any at raves:

> *Buy from a trusted source who has tried the specific batch before. Don't buy at raves- you could be buying dangerous bunk that isn't even MDMA, or buying from an undercover cop. (Participant 99)*

6.1.7 Moderation and not overdoing it (26 references, 1.35% coverage)

Moderation was a key word commonly used by participants when giving advice to someone who would like to consume MDMA. Participants frequently advised others to keep their MDMA use in moderation and not overdo it or do it too often, at times suggesting to keep it for special occasions or not doing it more than once a month. Some participants expanded on this by mentioning that overindulgence can lead to negative side effects and damage to health, as well as making the drug 'lose its magic'. Participant 33 highlighted the importance of moderation and its healing properties, as well as staying away from the drug if one has a history of mental illness:

> *Advice to someone who wants to take it: MDMA can be a lot of fun and even healing if used in moderation. Moderation is KEY though. If you have a history of mental illness including mood disorders or schizophrenia or addiction, I would highly not recommend using MDMA recreationally because I've seen a million times the negative affects it have on people's lives. (Participant 33)*

Moreover, participant 29 also highlighted the importance of moderation in their advice to someone wanting to take MDMA:

I would say yes take it, it is an experience everyone should have in their lifetime. BUT learn from the mistakes I've made and don't do it to the excess. Everything in moderation. (Participant 29)

The next example is a participant who suggested using MDMA on special occasions and on a monthly basis, in order to keep it manageable and avoid addiction:

Keep it for special occasions. Someone who does MDMA every week I would consider an addict, as that's how I was at first it spiraled out of control. Once a month is manageable, and can still be considered "recreational". (Participant 31)

6.1.8 Right state of mind (6 references, 0.48% coverage)

Making sure one is in the right state of mind was mentioned by some of the participants. Moreover, staying away from the substance in case of mental health issues is and being mindful of your state of mental health as well as being mentally strong are factors mentioned by participants. The following example is a participant who mentioned the importance of being in the right headspace and not having any mental health issues:

Make sure you are in the right headspace and are not dealing with any immediate mental health issues. (Participant 77)

The next example stated the importance of being in the 'right headspace' and reduction of negative side effects by:

To ensure that they are in the right head space and to take measures to reduce the negative side effects of the MDMA use. (Participant 4)

6.1.9 Stay hydrated (14 references, 0.30% coverage)

Participant commonly advised others to stay hydrated. Some went into details and explained ways to avoid dehydration while others mentioned the need to make sure one is hydrated but not over hydrated, and others simply reminded potential new users to make sure they drink water. The following example is someone who highlights the importance and benefits of drinking water while giving some tips on carrying water throughout the night:

I say learn to drink a gallon of water a day. But especially for the day you want to take MDMA. Too many people go extremely dehydrated, but also people in general are dehydrated compared to those who gym a lot.

They continued:

Make sure to always have water. I carry a camel back, which is inconvenient, but never as bad as being thirsty and intoxicated and having to wait in line or find water. I probably drink more than a gallon at the event itself. I find that if I'm peeing clear the entire night, I feel less tired compared those who complain about back soreness or fatigue during the events. I feel more clear headed and less clouded or zombie looking when I've eaten right and drank a lot of water to counterbalance the amount of alcohol and MDMA I take. (Participant 104)

The next participant mentioned the importance of drinking water by mentioning the loss of liquid while sweating, as well as a suggested amount of water to be drunk on the hourly basis while under the influence of MDMA:

> *You will lose lots of liquid through sweating. Make sure you drink at least 500ml every hour of the roll. (Participant 88)*

6.1.10 Other (21 references, 1.13% coverage)

This category consists of the advice given by individuals, that was not commonly mentioned and did not fit into the previous categories. This includes various factors highlighted by individuals, including not making MDMA as an escape, being careful, as it could be a slippery slope, maintaining a connection with reality, chewing gum, hugging others, and eating clean and taking supplements. Moreover, a few participants mentioned that they did not know what advice they would give to someone who wanted to take MDMA. The following participant spoke about the importance of maintaining a connection to reality in order to avoid MDMA acting as an impediment:

> *It is one of the most life affirming things you will do in your life. MDMA is a drug like and drug if used to excess it can mask reality it can be a delicate balance to achieve to obtain the enhanced perspective that MDMA can provide while maintaining a connection to reality. It's important to maintain your connection to reality otherwise MDMA is no longer an enhancement but an impediment. (Participant 45)*

Hugging others is advised by a couple of participants. Participant 32 advised others to have fun and hug others:

> *Have fun and hug lots of strangers. (Participant 32)*

The next participant advised someone who is taking MDMA to eat clean and take supplements:

> *Eat clean and drink things like orange juice and take supplements like 5htp afterwards. (Participant 59)*

6.2 Quitting or cutting down (88 references, 7.19% coverage)

The second part of the question asked the participants what advice they would give to someone who wanted to cut down or quit MDMA. This theme was divided into six subthemes based on the advice given, five being the most commonly mentioned advice: Lifestyle change; Reason; Just stop; Professional help; Taper down and special occasions, and the sixth category (other) containing other factors mentioned which were more unique and not fitting into the previous categories. These categories highlight unique components of the advice that would be given to someone who wants to quit or cut down their MDMA use, told in different ways yet often having many themes in common.

6.2.1 Lifestyle change

This subtheme refers to participants who advised others to make a lifestyle change in order to quit or cut down their MDMA use. Participants commonly mentioned lifestyle change as an effective way and many stated it was what they had done themselves as a way for quitting or cutting down use. It was identified through two questions that arose from this subtheme a. Associated scenes and b. Hobby or replacement.

a) Associated scenes (27 references, 1.95% coverage)

Distancing yourself from scenes associated to MDMA was a lifestyle change regularly mentioned by participants as an effective way to quit or cut down MDMA use. Moreover, these scenes were commonly identified as clubs, raves, festivals, parties, certain friends and groups of people, or the scene in general. These scenes were often referred to as triggers, places, and events, which are associated with and promote MDMA use. Moreover, some participants mentioned the dissociation accompanied by putting the time and the money elsewhere instead. Participant 4 advised others to distance themselves from circumstances associated with MDMA use, which would trigger cravings:

> *I would advise them to switch up the circumstances that might trigger their cravings for use and to distance themselves from the elements in their life which are associated with MDMA use. (Participant 4)*

The next example is someone who mentioned staying away from associated scenes such as concerts, parties, festivals and raves and to spend their money on other hobbies instead:

> *Get away from the scene. Stop going to concerts, stop going to parties, stop going to festivals, stop going to raves. It's really not that hard. Have a little self-control, spend your money on hobby, gym, or some good food and do something else. (Participant 94)*

Participant 62 similarly spoke about staying away from clubs, festivals, and parties in order to avoid temptations to consume MDMA:

> *If you want to cut down/quit MDMA and are having a hard time doing so, the best piece of advice would be to just stop going out altogether, or at least stop going out for a few weeks. MDMA isn't something you take at home or anywhere outside of nightclubs/music festivals/parties so there would be no temptation to take it. (Participant 62)*

b) Hobby or replacement (13 references, 0.96% coverage)

Some participants highlighted the importance of finding a hobby or a replacement in the process of quitting or cutting down MDMA use. Some mentioned finding a new hobby or a replacement in general, while others suggested certain activities to replace MDMA use, the most commonly mentioned exercising. Others mentioned meditation, going to the library, drinking coffee, and finding a new hobby or replacement things in life that are fulfilling and channel the urge of MDMA use into other aspects of life. Participant 78 spoke about discovering activities that are fulfilling without the use of drugs:

I would advise someone who wants to cut down to find things in their life that are fulfilling without drugs. (Participant 78)

The next example is a participant who mentioned finding new hobbies such as sports, in order to replace previous ones:

As to someone who would like to quit, I would just recommend they find new hobbies. There certain activities or locations that MDMA is common. Instead of going to a music event, a bar, a club or a festival, I would take them hiking, rafting, snowboarding etc. You just need to help them find another thing they enjoy. This isn't heroin. (Participant 100)

The next participant advised others to find healthy hobbies such as exercising and going to the library:

Quit. Start working out instead and follow a clean cruelty free diet. Meditate, and make good friends. Ditch the club and go to library or the gym. Find healthy hobbies. (Participant 7)

6.2.2 Reason (12 references, 1.04% coverage)

This theme was created as finding a reason to quit or cut down was mentioned by some of the participants. Finding a reason refers to participants who suggested that one should self-reflect and find reasons for wanting to quit or cut-down. Moreover, this category also consists of participants who suggested telling others of their experiences in order to make

them want to quit or cut down, so in a sense, educating them and giving them reasons for wanting to quit or cut-down their MDMA use. Such participants commonly mentioned informing others of their bad experiences and the possible consequences so that others are aware of the negativities and could make the right decisions. This particular participant spoke about the importance of connecting to the reasons for wanting to quit, as well as imagining and believing in finding sobriety:

> *If someone wants to cut down or quit, I would tell them to really connect with the reasons they want to quit. For me quitting was a natural process of outgrowing the effects, but also I moved on to wanting a new experience of life that was beyond what drugs could give me. You have to imagine what you want, and believe, and KNOW it is possible to get there. Even know that you will eventually get there just by setting the intention alone. Understand what it is that the drug is giving you that makes you want to take it and develop a plan to gain that in sobriety. Also know that once you can give it to yourself, you will feel more satisfied, not to mention more confident in your own power. (Participant 82)*

The next example is a participant who stated that they would educate others of their negative experiences and the risks and dangers involved:

> *I would NOT give any to someone who wants to cut back/stop. I would tell them that yeah it's fun but there is a high risk of danger and tell them my horrible experiences with it and if they still take it they are risking their life. (Participant 36)*

6.2.3 Just stop (14 references, 1.01% coverage)

Just stop refers to participants who advised others to 'just stop' if they would like to quit or cut down their MDMA use. Moreover, some participants advised others to just stop without much expansion, while others suggested going cold turkey, as explained by some, a route taken by them. Some participants mentioned the non-addictive characteristic of MDMA, stating the process of just stopping is much easier. An example of this is participant 47 who wrote:

> *Just stop. It isn't physically addictive. There are no withdraws or side effects of quitting no matter how much you've taken on a regular basis. It's MDMA not cocaine, (Participant 47)*

Another participant mentioned Ecstasy not being physically addictive, hence making it easy to just quit:

> *To quit I would simply say quit, ecstasy is not physically addictive and you CAN simply stop indulging in the drug. (Participant 59)*

The following participant stated that going cold turkey was how they quit their MDMA use and that it is the easiest way. However, they state that in the case of people with low willpowers, then a distancing one from the people and circumstances is the next way forward:

I'd say cold turkey is the easier way out, but it's anecdotal. I simply stopped and didn't think twice about it. Other people don't have the same willpower and I understand that, so I'd recommend a change in scene, friends, etc. Or to drink less, as being drunk will lower their inhibitions in trying to stay clean. (Participant 26)

6.2.4 Professional help (7 references, 0.48% coverage)

Some participants mentioned getting professional help as an aid for quitting or cutting down MDMA use. Moreover, some participants in the category complemented this piece of advice with a note that such help should be sought in case it was needed, something that they believed was not very likely. An example of this is participant 57 who advised others to attend NA (Narcotics Anonymous) meetings or a rehab, but stated that they doubt such help would be needed in the case of MDMA due to its non-addictive character:

If someone is trying to quit I would tell them to start going to NA meetings or even to rehab, and to tell the people closest to them about their problem. Although in all the time I've been doing MDMA and all the people I've met, I never really heard of anyone becoming addicted to MDMA or any psychedelics (other than a slight dependency on marijuana for daily users). (Participant 57)

Another participant similarly stated the same facts as:

I would not give advice to someone re-quitting. Just do what they have to do and seek professional help if needed. I do not think MDMA is addictive so I don't see anyone having any problems. (Participant 32)

The next example is a participant who suggested seeking professional help, however, strongly advised being careful that it was not recorded in one's medical record:

> *For someone who wants to quit, I would advise seeking help from a professional and I would make sure this is not going to be tagged on to your medical record. As medical records are put online and made available, this will only have negative impact moving forward, should it be known you've taken it and have a problem. (Participant 23)*

6.2.5 Taper down/ use on special occasions (6 references, 0.42% coverage)

Tapering down, or dedicating MDMA use to special occasions only, was another advice given by some of the participants. A couple of participants mentioned their own experience of tapering down as an example, while others mentioned trying to not use it as often and saving it for special occasions only. One particular participant advised cutting down and using MDMA once every three months, along with having a healthy lifestyle. Participant 99 advised others to 'just suck it up and do it', while they explained that they themselves tapered down their use, therefore making it easier for them to quit:

> *I don't really have advice for someone who wants to cut down or quit MDMA other than to just suck it up and do it. Probably easier said than done for some people, but it was easy for me to slowly taper down usage so I don't have experience with having a difficult time stopping. (Participant 99)*

The following example suggested cutting down MDMA use to special occasions only, and suggesting that such consumption would allow making a memory of each indulgence:

> *As for cutting down on use, I would challenge them to take it only in special occasions, making memory of each use. (Participant 55)*

6.2.6 Other (14 references, 1.28% coverage)

This category was created in order to highlight the other given advices, which did not fit into the previously mentioned categories. Participants in this category mentioned various different influential factors as advice for someone who would like to quit or cut-down their MDMA use. Some applauded, and motivated potential quitters by saying: *"You can do it."* (Participant 21), while others mentioned the importance of having willpower, making a conscious effort, or having a good support system. Some mentioned the fact that MDMA is not addictive, not pretending that quitting is a difficult thing to do, if one wants to really quit they will, just throwing it away, and suggesting to attend events sober. Two participants mentioned not having any advice to give, and one participant mentioned that he would advise someone not to stop until they are older and have responsibilities. This participant mentioned not pretending that it is a difficult thing to do:

> *If you want to quit or cut down, then quit or cut down. Don't pretend to yourself and others that it's difficult. And don't draw upon the misfortune of others to justify why you'd rather do MDMA than drink I think the term addiction is thrown around far too loosely in this liberal age. (Participant 38)*

The next example is a participant who mentioned the non-addictive characteristic of MDMA and stating quitting tends to happen naturally with the drug:

> *I would tell them that it's not an addictive drug-most users tend to halt use naturally anyway-if they want to quit, they probably will. (Participant 89)*

Participant 64 mentioned attending events in a sober state, a unique tactic suggested, which was not commonly mentioned by any other participants. However, they continued by mentioning tapering down MDMA consumption in order to find more joy in each use, something that was previously mentioned by other participants:

> *To cut down, try going to events sober. Space out your use so you can enjoy it more when you do. (Participant 64)*

Participant 102 advised others not to quit or cut-down their MDMA use until later in life when they needed to deal with career duties:

> *Don't stop till you get older and have to deal with jobs. (Participant 102)*

In summary, assuring the quality and purity of MDMA (know what you are getting) was the most common advice given to someone who wants to take MDMA. Participants advised others on testing the substance and ensuring a trustworthy source when purchasing. It was also commonly advised to keep it for special occasions and not to overdo it (once a month being the most commonly mentioned). A change, either by distancing oneself from

associated scenes related to MDMA, or by finding a replacement, was the most commonly advice given to someone who wants to quit or cut-down their MDMA use. This was followed by just stopping or going cold turkey, if one would like to make these changes.

4.3 Summary

This chapter looked at the results of the data collected through the online questionnaire. The first of the chapter presented some demographic information, such as age, ethnicity, and living situation, as well as information about their favourite drugs and their recent consumption patterns. The second part of the chapter focused on the main qualitative data of the study, which was obtained through the open-ended questions of the online survey. Two overarching themes were identified: Harm reduction and Function and pleasure, which will be further discussed in the next chapter. The data was presented and discussed in terms of 6 questions: Journey; Polydrug use; Role of drugs during consumption; Changes in drug use pattern; Changes; and Advice. Furthermore, themes, subthemes, and sub-subthemes under these questions were introduced and discussed individually. The next chapter will discuss these results at a broader level.

Chapter 5: Discussion

5.1 Introduction

This chapter discusses the research question in light of the results of this study and their relationship to previous literature. Results particularly reflected on positive applications of MDMA, namely enhancement of pleasure and therapeutic applications, as well as harm reduction, and a discussion of the nature of quitting and cutting down MDMA use. This discussion is then linked to the theoretical and practical implications of the study and some recommendations for future research studies. Finally, limitations of the study, such as data collection issues and problems resulting from the research design are discussed.

5.2 Review of the results and relationship to previous literature

5.2.1 Overall findings

The aim of this study was to understand MDMA use and pathways into and out of use. This research was designed not only to focus on people's drug use, but also to explore how MDMA fits into the context of people's everyday lives. Although some participants described addiction, mostly this was the result of polydrug use rather than MDMA 'addiction'; therefore, this research's focus has been on non-addictive drug use and ways to enhance these experiences or let go of them if necessary. The study explored non-addictive drug use and why and how people stop or cut down the use of MDMA, given that it is highly enjoyable but not generally used in an addictive pattern.

The results highlighted harm reduction, function, and pleasure enhancement as important overarching themes for the participants. MDMA was generally used functionally in specific settings to enhance specific types of events or experiences. Most commonly, the setting was

a rave, club, or other event involving music. MDMA enhanced intimacy and social bonding, as well as being used by some participants as a cognitive enhancer and therapeutic and meditation aid, which helped them to think and feel differently. Many described positive psychological and social effects of use that continued when not using, and often lasted until the present day.

Participants were diverse, coming from various geographical locations, educational, and socioeconomic backgrounds. Most identified as former heavy MDMA users. They told stories about their individual MDMA journeys, writing about various aspects of their lives and placing MDMA within the context of their lives.

Frequent or heavy use comes in various quantities and frequencies of consumption and is not described in the same language as heavy use of other drugs, such as cocaine or heroin. Typical heavy MDMA use or addiction described by participants was much less frequent than more addictive drugs, and it was commonly a weekend dose or a three-day binge at a festival once a month, which closely aligns with previous MDMA research (Hammersley, Ditton, Smith, & Short, 1999). Moreover, when addiction was mentioned, different language was used as compared to speaking about other drugs. MDMA users explained their drug use in some familiar terms, such as experimental, recreational, or being an addict. However, overindulgence was the most common term used by participants to explain heavy use, which does not seem like a stereotypical way of describing drug use, but rather a term more commonly used for describing over consumption of less 'dangerous' substances (such as food, for example). Moreover, mindful, normal/casual were also other terms used, which were also not stereotypical drug language, but rather hinted at a more informed and deliberate type of use, although there are and always have been serious and informed users

of other drugs. These particular choices of words suggest that generally MDMA is not a drug of dependence (EMCDDA, 2015a). Even after quitting, some participants looked back at MDMA use as a positive experience that changed their life and their identities for the better, typically playing an active role in forming identity and sense of self-growth. In fact, positivity was the most commonly observed tone in the participants' answers, especially in the context of the role of drugs in the consumption period, as well as changes made in a person due to their drug consumption.

Magical first experiences laced with discovering a new love for music and benefiting from therapeutic characteristics of MDMA, was how many described their initiation into MDMA. Attending various music-related events and using MDMA more frequently in order to enhance these experiences and benefit from the newly discovered therapeutic benefits commonly followed after the initiation. Moreover, these experiences often carried a life-changing long-term impact. The main findings of this study focus on the ways individuals used MDMA as a tool for enhancement of pleasure as well as therapeutic benefits. These findings seem to support Race (2009), who suggests that 'chemical use' can be simultaneously pleasurable, therapeutic, and part of a lifestyle. MDMA use often falls into the background while the new feelings and experiences become possible through its use. These new feelings and experiences are sometimes short-lived, lasting only the night, but sometimes are long-term and life-changing. Pleasure with the use of illicit drugs is seldom explored; yet these pleasures and benefits are significant.

These feelings are important especially in terms of impacting people's perception and memories of the drug and the phases of heavy use in their lives, often making them reflect

back on great times, with life-changing long-term effects, that individuals do not regret, and even recommend that others experience.

MDMA journeys were not all necessarily a finished phase, or a part of participants' lives that was over and done with. It was common to see people speak of a change in their consumption because it did not feel the same anymore, lives had changed, or that they would still take it if the opportunity arose. The individuals who spoke about having completely stopped or having experienced much more negative experiences were commonly those who spoke about their drug use as a whole, stating that the given issues may have been a result of their polydrug use, which is a finding in line with previous MDMA research (Hammersley et al., 1999). As a whole, most heavy users reported a cut down in their use rather than a stop, which demonstrates people's openness and interest in the drug, even after periods of heavy use, something not commonly seen with heavy users of other drugs.

The rest of this section is divided into three parts with respect to the main findings of this study, which will be further discussed in the context of this study as well as their relation to literature reviewed in Chapter 2. The first part discusses the applications of MDMA use, including enhancement of pleasure and therapeutic attributes. This is followed by harm reduction methods, and quitting/cutting down is the last part of this section, where individuals' experiences and advice are described.

5.2.2 Function and pleasure enhancement

Positive applications of MDMA are mentioned much more frequently than negative ones, and the negative ones usually allude to drugs more generally (Parker et al., 1998). In this study, socialising, optimising fun, appreciation of music, therapeutic applications, and life-

changing benefits are what MDMA users typically mention as the positive applications of MDMA. Short-term pleasure lasting through the night, while enhancing one's functionality (such as having the energy to dance all night), as well as long-term benefits (such as changing someone for the better) are all effects and applications of MDMA use. The next sections will discuss the most notable positive applications and benefits of MDMA as reported by our participants and their relation to literature.

5.2.2.1 Enhancement of pleasure

It was no surprise to find research participants repeatedly referring to MDMA use as enhancing the night and maximising the fun. Our data suggest that happiness, euphoria, and being able to stay awake and 'dance the night away' are common effects experienced while using MDMA, findings that are very much in line with previous research (Panagopoulos & Ricciardelli, 2005).

MDMA use acts as an enhancement of people's lives and does not change their routines and daily activities. In this sense, using MDMA in the context of people's livelihood is an important factor to point out. People often described being functioning individuals with careers, just like non-drug users, who also attend music events and consume MDMA recreationally. The importance of this lies in the non-addictive factor of MDMA, as it is rare to hear of MDMA having taken over someone's life. People chose to use MDMA for a three-day festival because they saw how it could be an instrument for meeting their desired needs, such as having the energy to stay awake and party or for understanding and enjoying the type of music that is being played. Moreover, people often explained how they 'keep it for special occasions', patterns which are not typical amongst other drug users, such as heroin users. For example, few heroin users 'choose' to utilize heroin once a month for a

special occasion, although controlled users do exist (Shewan & Dalgarno, 2005). MDMA is used as an instrument to enhance one's abilities as well as adding pleasure to the night, but it supports the other events rather than being the primary focus. Research done by Mandler (2016) states that nightlife workers in particular, use psychoactive drugs to enhance their abilities to perform their jobs, as it adds to their productivity by allowing them to become more social and stay awake. Our study suggests similar findings, although it is focused not on a particular group of users (nightlife workers in this case), but rather on MDMA users in general.

More importantly, it is not strictly MDMA's chemical characteristics that allow users to experience these feelings. That is, MDMA is not a magical potion, which turns any night into a highly pleasurable night, but rather it is the experience and the context in which MDMA is being used that allow these characteristics to blossom. Although most participants spoke about being energetic and dancing the night away while enjoying social interactions, a few participants spoke about using MDMA as a form of meditation, which highlights the importance of the context in which MDMA is being used. Duff (2008) similarly states that sociability, productivity, and pleasure are not necessarily results of the chemical itself, but rather the result of what the chemical-infused body does. He highlights the significant impact of the space, such as a large nightclub playing electronic dance music, and performance, such as dancing or socialising with strangers, contextualising the pleasure being experienced.

The frequent mention of clubs and music-related events is compatible with previous research linking MDMA use and clubbing closely (Palamar et al., 2015). MDMA users typically tell their stories in the context of the club scene, while finding a new love for

music, especially electronic dance music. Their clubbing experiences are infused with sensations, music, and chemicals, and the significance of music in these experiences is visibly highlighted in their stories. Music is felt and understood, and often becomes a central point in people's MDMA stories. Moreover, the new-found appreciation of music is not typically one that ends with the night, but rather is a significant positive outcome, or a lasting benefit, which continues to be a part of the individual's life. The commonly mentioned appreciation of music plays a pleasurable and therapeutic role for most, as some mention hearing the same songs long afterwards and being able to experience the positive feelings again. The next section will further discuss the therapeutic benefits that individuals experience.

5.2.2.2 Therapeutic

Therapeutic benefits of MDMA could be seen in various phases and aspects of participants' MDMA stories. Beginning with MDMA use, therapeutic advantages, such as using the substance to become less shy or deal with supressed emotions, are factors that attract some individuals to begin their MDMA journeys. Furthermore, therapeutic benefits are motivators in the shift to more frequent use, as individuals continue to take comfort and continuously benefit from them, namely being able to conquer social anxiety and depression. Therapeutic benefits of MDMA are also commonly mentioned as positive ways that MDMA caused a change in the lives of individuals. Changes, such as gaining self-confidence and an improvement in social skills, were felt to be important for well-being. These findings are consistent with previous findings of the therapeutic aspects of MDMA, especially in terms of pro-social and empathetic characteristics such as sociability and closeness (Hysek et al., 2014).

The therapeutic benefits varied in intensity, from dealing with supressed memories of childhood, to becoming more self-confident. Benefits included short-term benefits that helped one become more comfortable, to long-term and meaningful changes made in ones' life. Long-term effects were the most interesting ones, and ones not commonly described by former heavy users of other drugs. Improvement in social skills, becoming more open-minded, and becoming a better person were among the more common long-term effects mentioned. In terms of social skills, participants often wrote about becoming more friendly, feeling love for all individuals, and having the ability to speak to everyone. It is important to note that the chattiness and friendliness is different than when under the influence of alcohol for example, because the conversations are often referred to as deep and meaningful, rather than silly or regrettable, often making an impression in one's mind and containing therapeutic factors rather than next-day embarrassment.

The social benefits experienced are also beneficial in terms of helping individuals who suffered from social anxiety or stated that they were shy and introverted to begin with. MDMA is commonly known for its characteristics of being able to assist with social anxiety (Scott et al., 2013). Moreover, most of these benefits experienced are ones that are long-term. The events and the experiences experienced through MDMA, along with the increased levels of sociability have tendency to form friendships and strengthen the existing ones. Moreover, these friendships are often referred to as long-term and meaningful friendships and not just party friendships.

MDMA users commonly mentioned simultaneously experiencing pleasure and the therapeutic benefits of life-changing experiences, by creating their own harm reduction methods in order to maximise the effects and minimise the risks. Harm reduction can

powerfully be created and instrumented by individuals themselves (Mandler, 2016), a learned experience which cannot be a product of inadequate drug policies such as abstinence. The next section will discuss harm reduction, and the steps that individuals take in order to maximise the previously mentioned benefits, and minimise harm.

5.2.3 Harm reduction

One participant in particular (participant 32) told a story of a night when she arrived at the club and was faced with police search dogs by the door. She described taking the entire amount of MDMA she had at once, along with her friends, in the fear of getting caught, and half an hour later not being able to walk due to the overdose, with her jaw constantly shaking, while her friends were vomiting. Understandably the law means well and is designed to prevent injury, but in a lot of cases, such as the story just told, the policies are causing danger to consumers instead of educating and helping them. Drugs are not necessarily good or bad, harmless or harmful, but drug regulation and policies are focused on teaching individuals the 'correct' ideologies of consumption (Race, 2009). Drug policies are slowly shifting from abstinence towards harm reduction; however, literature and policies based on views of drug use as neurological pathology and drug users as problematic social factors are still dominant and are not always beneficial. A deeper exploration and understanding of the complexity of drug use, and a shift of focus from the negatives to the positives is a useful step in creating a helpful awareness and policies.

Our study frequently showed that MDMA is not necessarily a stereotypical poisonous brain-harming and life-destroying drug, but on the contrary, a tool that aided many individuals both in the creation of the perfect night or achievement of personal growth and long-term benefits. Indeed, there were individuals who stated having experienced negative

effects due to their heavy consumption; however, most of these were due to drug use as a whole, and perhaps those whose drug use was described in a different way from the others (less controlled and cautious). Malins (2004) states that a drug is not naturally bad, it becomes bad when it is harmful to the body and causes problems such as an overdose, and is good when it is benefiting the body and causing pain relief and happiness. The author explains that the body itself has the ability to connect with other bodies and discover new experiences, and that harm-reduction techniques discovered by individuals help to create productive relations, improving one's life. The body is thus an object that becomes functional depending on external and internal influences. Malins (2004) illustrates this with the example of a bicycle and how it could be a piece of art if it is placed in a gallery, but could also be a means of transport if a person starts peddling it. Applied to the present study, Malin's arguments are helpful in explaining how people often refer to and especially advise others on harm reduction techniques in order to take full advantage of their MDMA experiences, rather than the more expected advice a former heavy user would give about other types of drugs, such as making sure to keep away from the substance completely.

Some participants emphasised that they were highly functional and even successful members of the society, highlighting factors such as pursuing high levels of education or having successful careers. This shows that MDMA use is often more of an informed and deliberate type of use, as individuals commonly show trends of having developed their own efficient harm reduction methods. Substance use can be pleasurable and positive, and the consumers themselves have already come up with strategies for harm reduction (Duff, 2008; Race, 2009). Participants repeatedly advised others on educating themselves about MDMA and harm reduction techniques, especially prior to consumption. They referred to websites, most commonly mentioned www.rollsafe.org, which advises consumers on safe

dosages, safe purchasing options especially when purchased from the dark net, the importance of drinking water and taking pre/post supplements, and other harm reduction techniques in order to 'do Molly safely'.

Individuals often speak about and advise others on getting their MDMA tested and getting it from a reputable source in order to assure purity, as impurities are often known to be the cause of negative outcomes. Test kits are often used to test the MDMA before consumption, making sure one has obtained the 'right stuff'. A reputable and friendly source could both ensure quality and provide information about harm reduction techniques (Jacinto et al., 2008). The same applies to polydrug use, which is typical amongst MDMA users (Wu et al., 2009), including the users of this study. Many participants referred to mixing MDMA with various other drugs. When they were asked about polydrug use, the results were complex. The answers varied in content, with some speaking about using other drugs at the same time as MDMA, and others referring to polydrug use within the same time period or within their lifetime drug use in general. However, polydrug use was typically mentioned when giving advice: individuals advised others not to mix MDMA with other substances, in order to maximise the effects of MDMA and to reduce harm. As one participant interestingly puts it: 'Choose your poison', referring to choosing one substance at a time in order to avoid negative consequences.

This study also showed that an individual taking MDMA could in fact do different things when placed in different situations. MDMA affects people differently, and the effects are complex depending on what an individual does with his/her body. Most people stated a preference for dancing and clubbing, but a few stated a preference for staying home, meditating, or socialising and doing creative tasks with friends. Regardless of preference,

the importance of being in the right place and around the right people, as well as being in the right state of mind, was repeatedly stressed by individuals to ensure gaining the full benefits from MDMA consumption. For most people, the ideal place would be a club or a rave amongst friends, without worries in mind. Setting the night right, having an exit strategy, being around close friends, especially ones that have used MDMA before and are familiar with the effects, are some common ways to ensure a safer night. These findings seem to echo the work of Dalgarno & Shewan (2005), who highlight the importance of preparation, awareness, and choosing the right environment in regards to the drug of choice in order to reduce risks of harm and experience the expected effects.

In sum, our study shows that individuals successfully created their own harm reduction methods, ones that helped them maximise the benefits of MDMA. The following will be a discussion on the desire to quit or cut down on use.

5.2.4 But what if someone really wants to cut down/quit?

In general, most individuals made quitting or cutting down MDMA sound like an easy task with not much effort needed, stating that it commonly happens naturally or due to some intentional or unintentional change in one's life. Changes commonly refer to lifestyle changes, which would separate someone from the associated scenes and group of people involved, removing them from the club and raving scene either on purpose or due to life circumstances. These include moving locations, or getting a new job that comes with more responsibilities and does not give one the time to attend these events. In terms of intentional changes, finding a new hobby as a replacement for MDMA use was almost always mentioned. These findings are in line with the research of Verheyden et al. (2003), who identified circumstantial reasons, such as not going clubbing anymore, as one of the two

main reasons for why people stop taking MDMA. However, they identify the other most common reason as concern with mental health, which is not so much in line with our study. Mental health issues were present in our study, but not as strongly and mostly a result of collective drug use and not MDMA specifically.

Moderation is a key word when it comes to MDMA use. Generally speaking, most of the individuals in this study stated that they have cut down rather than have completely stopped their MDMA use. A common trend of pause and resume is seen within individual journeys, and those who have now cut down or paused often say that they are open to taking MDMA again if the opportunity arises. This is in agreement with previous findings of Hammersley et al. (2002), who similarly point out that heavy Ecstasy users go through periods of abstinence, but are often open to future use. Individuals often advise others to take breaks and to use in moderation, which is typical with MDMA use patterns, as users commonly claim the preference of infrequent use patterns (Jacinto et al., 2008). Many MDMA use stories are continuing and infrequent use, and saving it for special occasions seems to be the preference for users (Murray, 2001).

In sum, quitting or cutting down MDMA use often happens naturally. When it is intended, it is mostly due to a separation from the associated scene or the discovery of a replacement, which are the most effective tactics.

Different types of MDMA applications, including pleasure and therapeutic attributes, harm reduction, and the quitting and cutting down process have been discussed. Taking into account the on-going discussion and analysis with respect to understanding MDMA use, we will now discuss both theoretical and practical implications.

5.3 Theoretical, methodological, and practical implications

The discussion has led to conclusions in regard to MDMA use, which can be applied both by practitioners and lawmakers who are hoping to understand the power of MDMA use and raise awareness and education on the subject. In theoretical terms, there has been a significant lack of research that does not frame drug use as a problem. There has been very little focus on abandoning MDMA consumption, and most of the literature is focused on the neurotoxicity of the substance, as well as abuse and enforcement. Such an approach to MDMA use is aimed at battling it as a health problem and addressing public concerns about drug consumption. However, the consumption of MDMA touches upon many other dimensions at the social and personal level of those who consume it. As this study has shown, MDMA can play an important role in the shaping the user's identity. In this sense, this study set out with an alternative perspective and has tried to explore non-problematic drug use in order to fill the mentioned gaps.

At a methodological level, this study provides fresh type of data by applying methods that try to encompass several aspects of the drug user. This holistic approach examines not only the user's MDMA consumption and its effects in a bubble, but also extends our understanding of how MDMA use is situated within his or her life story. As shown in this study, this methodological approach shines a different light on MDMA use and the user's experience.

In practical terms, our study offers new insights to using, harm reduction, and quitting/cutting down non-addictive MDMA use. These findings could be greatly informative and useful for MDMA users. As Hammersley (2011) points out, most intense drug use is often confused with dependency, which can lead to the development of

inadequate interventions. This study's focus was on non-addictive drug use, and the results carry a significant amount of information on harm reduction, which could be beneficial for organisations and harm reduction websites. Moreover, it could be useful in terms of policy-making in regard to non-harmful drug use. The users showed a significant degree of control over their MDMA use, which they had commonly incorporated into a series of DIY and mutual assistance harm reduction methods that drug services need to build on. These methods include: abstaining from polydrug use, being informed about appropriate dosages, keeping the use occasional, and familiarising oneself and learning about MDMA beforehand through online sources. Moreover some other methods which were in line with the work of Hansen, Maycock, & Lower (2001) include: checking for adulteration and using MDMA when in the right state of mind, which help provide a concrete framework for offering insight into harm reduction methods.

In sum, theoretical, methodological and practical implications of the study were discussed. Theoretical ones included filling the gaps in knowledge of non-problematic drug use and changes in consumption patterns of heavy MDMA users, and practical ones include using newfound results, particularly about harm reduction methods, to inform interventions and policymaking. Methodologically, the study contributes by applying an alternative approach inspired by the Life Story Method, which deepens our understanding of MDMA use at a broader level. This study was faced with limitations that may have affected the overall data. In the next section, these limitations will be discussed in terms of problems during data collection as well as problems resulting from the research design.

5.4 Limitations of the study

It should be noted that this study naturally has a number of limitations that affect its overall findings. These limitations result mainly from issues that emerged during the data collection process. In addition, a research design that adopts online surveying as a main data collection method is tied to the instrument's limitations.

5.4.1 Problems during data collection

Some problems arose during the data collection process. The most serious of these was a significant pause in the data collection process due to a lack of participants, which eventually caused a delay in the study.

Reluctance to participate in this study was mainly due to three factors. First, the software design of the computer system on which the questionnaire was listed would not allow questions with various items; therefore, each item had to be listed as a different question. This resulted in a total number of 83 questions, making the questionnaire appear much longer than it really was. Potential participants were initially overwhelmed by the high number of items on the questionnaire's first page and expressed a lack of interest after seeing these.

Second, the sensitivity of the subject matter resulted in a lack of willingness to participate due to the risk of exposure, especially since an illegal activity was the subject of the study. Although anonymity was continuously assured, participants who were being recruited through personal contact commonly expressed worry due to a fear of exposure. Moreover, in the initial stages of in-person recruitment, when initially approached, some individuals

had doubts about the researcher being truthful and suspected her of being an undercover police officer or MDMA dealer.

Third, the absence of an incentive in the form of money or a gift voucher could have been a contributing factor as some may find such incentives to be motivating factors to complete the survey. However, an incentive of that sort could have also attracted more insincerely answered data, a risk that is significantly higher in online survey methods.

5.4.2 Problems resulting from the research design

The online survey method and the subject matter of the research were the two factors resulting in problems in the study. The most notable problem resulting from the research design, which may have affected the nature of the findings, was the use of an online survey. The online survey prevented the researcher from asking participants further questions, as some simply answered ‘yes’ or ‘no’ to particular questions where more explanation would have been valuable. Moreover, the researcher was unable to ask individuals to expand on certain interesting topics mentioned, which, again, would have enriched the data.

Another issue was question no. 2 of the questionnaire, which asked individuals about polydrug use. This question turned out to be a difficult question, as it was already a complicated topic to begin with, and the answers turned out to address the topic in various ways. The question asked about people’s polydrug use, and participants answered the question in various contexts, namely using different drugs at the same time as their MDMA use, using different drugs in general at that point in their lives, or having used different types of drugs within their lifetime. The online survey method prevented the researcher from further explaining and clarifying the question.

On another note, the online questionnaire method did not allow the researcher to go through the transcription process from audio to written text, a step that is significantly useful to the extent that it helps the researcher become familiar with the data. Although the data was read through many times, the transcription process may have been helpful for the researcher, especially given the large number of participants.

The subject matter of the study may have had significant effects on the data. Although the online questionnaire promised individuals more privacy and anonymity, some participants might have held back on disclosing all of their experiences due to a typical fear of exposure in addiction and drug-related research.

In summary, the study was naturally faced with various limitations. In terms of problems during data collection, the sensitivity of the research study, as well as the large number of questions on the survey, were factors which were intimidating to potential participants and discouraged many from taking part in the study. In terms of problems resulting from the research methods, the online survey method was a restricting factor, as it did not give the researcher the freedom to ask more questions and the ability to ask participants to elaborate on certain matters. Furthermore, problems caused by a confusing question could have easily been avoided if interviews were conducted in person. Initial data familiarisation became a more complex process, as transcription was not involved. Taking into account the overall findings, theoretical and practical implications, and the limitations of the study, we will now discuss possible recommendations for further research in the following section.

5.5 Recommendations

The results of this study constitute a foundation for future research to address further aspects of understanding MDMA use and pathways into and out of frequent use. We have

examined MDMA journeys, the process of quitting/cutting down and implications in terms of social aspects and personal benefits. In methodological terms, this could be done by conducting in-depth interviews and investigating research participants' life stories at a deeper level. As much as we have understood with this study based on an online survey, we could understand a great deal more if a face-to-face approach were applied. This is difficult, as we said before, due to issues of illegality and fear of exposure, but nevertheless should be tried. Also in terms of methodology, a systematic ethnographic approach to MDMA in clubbing would likely provide deeper understanding, because it would be possible to study the phenomenon in its naturally occurring setting. Moreover, a study of heavy MDMA use with an emphasis on space and embodiment would be helpful for a further exploration of enhancement of pleasure and functionality of the drug, as well harm reduction methods.

5.6 Final words

The strongest single theme in the lives of the participants has been positivity. Looking back, most MDMA experiences were ones that shaped the identity of the individuals into whom they are today. Most people do not regret these experiences, and often mention ways to make the experiences safer and more valuable. These include making sure of what you are getting (either from a reputable source or testing the drug beforehand), being around the right people and in the right environment, making sure of the dosage and not re-dosing, and taking it in moderation (keeping it for special occasions and taking breaks in between uses). Although a stop or a cut-down in MDMA use is often a natural process, it could be stopped actively by a lifestyle change, such as distancing oneself from the associated scenes and people or finding a hobby or replacement. The findings of this study are particularly fruitful for further studies in order to gain a deeper understanding of experiences of MDMA users.

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Appendixes

Appendix 1: List of websites and forums used to promote the study

Websites and forums:

- Drugs Forum: *www.drugs-forum.com*
- The good drugs guide: *www.thegooddrugsguide.com*
- Bluelight forums: *www.bluelight.org*
- Party Vibe: *www.partyvibe.org*
- The Hip Forums: *www.hipforums.com*
- Experience project: *www.experienceproject.com*
- Urban75 forums: *www.urban75.net*
- Fantazia Rave: *www.rave.org.uk/forum*
- Eve&Rave: *www.eve-rave.ch* (A Swiss forum who contacted us originally on January 12/2016 asking to promote the study on their forum as well as their Facebook page)
- Rollsafe: *www.rollsafe.org*
- Reddit: *www.reddit.com Subreddits: Raves, aves, Drugs, DrugNerds, drugscirclejerk, MDMA, mdmatherapy, EDM, drumandbass, dubstep, electronicmusic, elecricdaisycarnival, DJs,*

Facebook groups (closed and open groups):

- Burning Man

  https://www.facebook.com/groups/burntheman/?ref=group_browse_new

- Burning Man Classifieds

  https://www.facebook.com/groups/burnerads/?ref=group_browse_new

- Rave Together Stay Together

  https://www.facebook.com/groups/RaveTogether/?ref=group_browse_new

- Dubstep

  https://www.facebook.com/groups/526957164006586/?ref=group_browse_new

- Dubstep

  https://www.facebook.com/groups/thedubstepgroup/?ref=group_browse_new

- Dubsteo/Drum'N'Bass

  https://www.facebook.com/groups/1541325382786013/?ref=group_browse_new

- EDM (Electronic Dane Music)

  https://www.facebook.com/groups/edm2012/?ref=group_browse_new

- London Events clubs & Meetings

  https://www.facebook.com/groups/1574502482764769/?ref=group_browse_new

- Nightlife and Brands in the Netherlands

  https://www.facebook.com/groups/673188382781711/?ref=group_browse_new

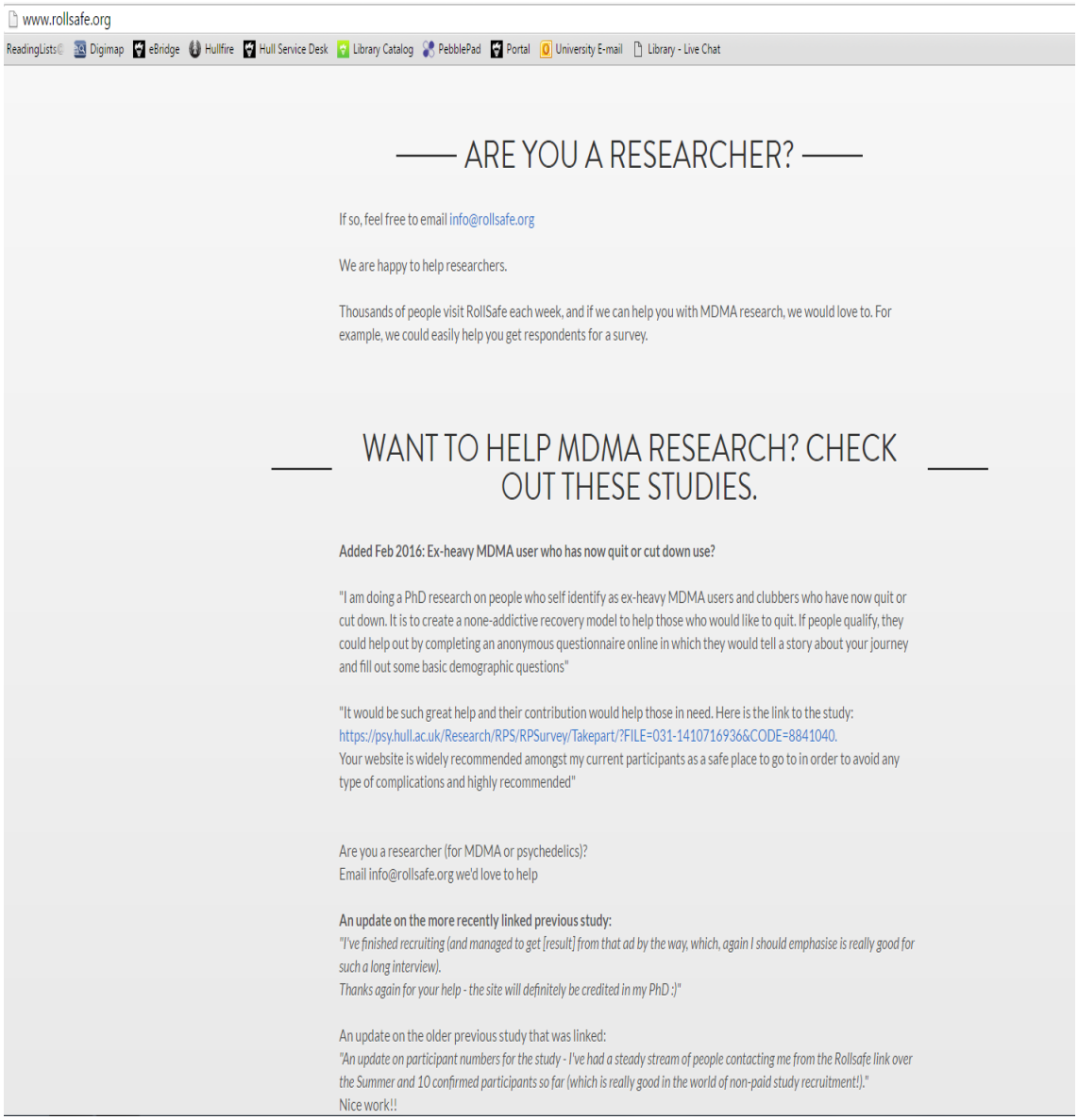
- Worldwide Dubstep and EDM

  https://www.facebook.com/groups/457902507631516/?ref=group_browse_new

- HUU International Students Association

  https://www.facebook.com/groups/HullUniversityUnionISA/?ref=group_browse_new

Appendix 2: Rollsafe advertisement



Appendix 3: Online questionnaire

Age _____

Gender: Male ☐ Female ☐

.Tell me your story (Please tell me the story of your MDMA use from the beginning to now)

.MDMA and other drugs (This question is about your MDMA use, alcohol, and any other drugs that you were taking. How do you see them all fitting in together?)

.We want your views (Looking back, how do you see your drug use? What do you think about it? what role did they or do they play in your life? To what extent do you see yourself as a drug user?)

.How has your drug use changed? (Do you consider yourself to have quit/calm down? To what extent did you have to do things for your drug use to change?)

.What is your life like now compared to how it was then? (How do you feel MDMA and other drugs have changed you? Tell us the best and worst aspects of your life while using MDMA)

.What advice would you give? (What would you tell someone who wants to take MDMA? What advice would you give to someone who wants to cut down or quit MDMA?)

The questions on this page ask some basic details about you

Ethnicity: Choose one option that best describes your ethnic group or background

White

1. English / Welsh / Scottish / Northern Irish / British
2. Irish
3. Gypsy or Irish Traveller
4. Any other White background, please describe

Mixed / Multiple ethnic groups

5. White and Black Caribbean
6. White and Black African
7. White and Asian
8. Any other Mixed / Multiple ethnic background, please describe

Asian / Asian British

9. Indian
10. Pakistani
11. Bangladeshi
12. Chinese
13. Any other Asian background, please describe

Black / African / Caribbean / Black British

14. African
15. Caribbean
16. Any other Black / African / Caribbean background, please describe

Other ethnic group

17. Arab
18. Any other ethnic group, please describe

What level of education do you have?

None	some GCSEs but no A levels	Some A levels	Some vocational qualifications	University or college degree	postgraduate degree	professional qualifications

Where you live at the moment?

At home, with my parents or the other people who brought me up (see the next question)	
By myself in a flat or house	
With my partner in a flat or house	
I share a flat or house with other people	
I live in a hostel, halls of residence or other residential community	
I am homeless and stay with friends or others when I can	
I am homeless and sleeping rough	

Who do you live with*, or if you live independently, who did you live with before you left home?*

(if more than one applies, please tick the one that was for longest)

Both parents	
Mother only	
Father only	
Mother and a stepfather	
Father and a stepmother	
Lived with relatives, not my parents	
Lived with other people	
Lived in a foster home or in care	

How much do you earn?

Less than £150 a week	£151 to £300 a week	£301 to £450 a week	£451 to £600 a week	£601 to £750 a week	more than £750 a week

How many times have you been in trouble with the law?

no more trouble	a caution or warning	a fine	a community sentence	a prison sentence

The next questions ask about your use of alcohol and drugs

If you use drugs, do you have a favourite drug you use?	I don't use drugs	No	Yes
If you use drugs, do you ever do so alone?	I don't use drugs	No	Yes
Do you use drugs because you're bored, lonely or anxious?	I don't use drugs	No	Yes
If you use drugs, do you think a lot about drugs and drug use?	I don't use drugs	No	Yes
Do you plan your day to make sure you can use drugs?	I don't use drugs	No	Yes
Do you need to use more and more drugs to get high?	I don't use drugs	No	Yes
Do you feel irritable or anxious if you don't use drugs?	I don't use drugs	No	Yes
Do you miss your favourite drug if you don't use it for a while?	I don't use drugs	No	Yes

What is your favourite drug? (Write its name, it can be alcohol)_____

Do you think that you are addicted or dependent on your favourite drug?	Not at all	hardly	a little	a lot
Do you think that your use of your favourite drug is out of control?	Not at all	hardly	a little	a lot
Does the prospect of missing a dose make you anxious or worried?	Not at all	hardly	a little	a lot
Do you worry about your use of your favourite drug?	Not at all	hardly	a little	a lot
Do you wish you could stop?	Not at all	hardly	a little	a lot
How difficult do you find it to go without your favourite drug?	Not at all	hardly	a little	a lot
Do you steal or commit other crimes to buy your favourite drug?	Not at all	hardly	a little	a lot
Does the prospect of missing a dose make you anxious or worried?	Not at all	hardly	a little	a lot

Which drugs have you used?	**Write in age when first used below** **AGE**
Alcohol	
Amphetamines (crank, speed, wizz, sulph)	
Cannabis (blow, draw, spliffs, hash, grass, ganja)	
Cocaine (charlie, coke)	
Crack cocaine (rocks, stones)	
Ecstasy (MDMA, MDA, 'E')	
GBH	
Heroin (smack, scag, brown, powder, junk, H)	
Ketamine (green, special K, ketavet)	
LSD (acid, trips)	
Mephadrone (MCAT, Meow Meow)	
Methadone	

Other opiates (such as opium, palfium, codeine)	
Poppers (rush, amyl nitrate, butyl nitrate, liquid gold)	
Psilocybin mushrooms (magic mushrooms, mushies, 'shrooms' liberty cap)	
Solvents (such as glues, gases, aerosols, lighter fluid)	
Steroids (body-building drugs)	
Temazepam (wobblies, mazzies, jellies)	
Tobacco (cigarettes)	
Valium	
2-DPMP (Vanilla sky, Purple Wave, Ivory Wave, Desoxypipradol, D2PM, 2-Diphenylmethlypyrrolidine)	
5-IT	
Have you ever injected drugs?	

The next question asks about how often you have used drugs in the past 12 months. You may not have used a drug at all, or you may have used it in a regular pattern, or irregularly across the year. Circle the number of days that best fits your use, following the suggestions below.

Never	Once	2-5 days **(less than once month)**	6-12 days **(about one a month)**	13-24 days **(about twice a month)**	25-100 days **(once or twice a week)**	101-365 days **(more than twice a week)**

In the past 12 months, on how many days have you used…

Alcohol	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Amphetimines (crank, speed, wizz, sulph)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Cannabis (blow, draw, spliffs, hash, grass, ganja)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Cocaine (charlie, coke)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Crack cocaine (rocks, stones)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Ecstasy (MDMA, MDA, 'E')	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
GBH	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Heroin (H, smack, scag, brown, powder, junk)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Ketamine (green, special K, ketavet)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
LSD (acid, trips)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Mephadrone (MCAT, Meow Meow)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days

Methadone	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Other opiates (such as opium, palfium, codeine)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Poppers (rush, amyl nitrate, butyl nitrate, liquid gold)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Psilocybin mushrooms (magic mushrooms, mushies, 'shrooms', liberty cap)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Solvents (such as glues, gases, aerosols, lighter fluid)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Steroids (body-building drugs)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Temazepam (wobblies, mazzies, jellies)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Tobacco (cigarettes)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
Valium	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
2-DPMP (Vanilla sky, Purple Wave, Ivory Wave, Desoxypipradol, D2PM, 2-Diphenylmethlypyrrolidine)	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days
5-IT	Never	Once	2-5 days	6-12 days	13-24 days	25-100 days	101-365 days

Appendix 4: Sample qualitative data

11-9-2015, 26, Male, German,

I first ingested MDMA at the age of 17. Prior to this point in time I had been exposed to other psychoactive substances but my use of said substances was not excessive. Over a period of roughly three years I ingested MDMA in tablet form semi-regularly (4-5 times per year). I did not use on any regular basis but I did often use in large quantities; sometimes for multiple days in a row. I would say most of my use did amount to binges. I found the effects quite enjoyable. None of my experiences during this period were unpleasant of physically threatening. I did not experience any mental or physical consequences to my use of MDMA that were apparent to me. After this period of use; I went about four years without using MDMA. During this period I rarely if ever thought about this substance. At the age of 21 circumstances were such that I had essentially unlimited access quantitatively pure MDA and MDMA. Naturally; under these circumstances my use became more frequent. Over a period of 14 months I used these substances on average every 4 weeks; often more. I was aware that such patterns of usage entailed significant risk of physical harm. The essential factor in justifying this sort of use to myself was that the substances I was ingesting were certainly much purer than would be distributed on the "street". I knew MDMA in itself is harmful to an extent regardless of purity; but in many things I had poor self control; so it did not take much to justify this to myself. My usage was on average ~350 mg MDMA or ~250 mg MDA in a night. The maximum dosages used in a single session were ~650 mg MDMA and ~550 mg MDA respectively. During this period of high frequency use I did notice tangible consequences to my use. Initially these were small; most notably altered cognition and minor memory deficits. Despite this I did not alter my frequency of use; although at this point I was

escalating in terms of dosage. About six months into this 14 month period; the effects of chronic use became more apparent. These manifested themselves as disturbing neurological phenomenon. I began having intense ocular migraines on almost a weekly basis. These later evolved into full blown migraines with other neurological components. These included intense aphasia; pain; nausea; and the aforementioned visual phenomenon. Prior to this I had not experienced migraines whatsoever. It's worth noting that the ocular migraine visual effects were carbon copies of the visual effects that I experienced with MDA and to a lesser extent MDMA. The similarities were startling to say the least; although nearly from the start I assumed these neurological symptoms were related to my use. During this period I was hospitalized once for acute toxicity after ingesting MDMA; but in this case other substances were involved as well. In light of the overdose and obvious neurological symptoms; my use level of use was obviously not something to be sustained. I sought treatment for my neurological symptoms and heavily scaled back my use of MDMA as well as MDA. Over the next 3 years I used these substances less than 4 times a year. Over about 6 months my neurological symptoms resolved almost complelty. I still experience migraines ~6 times a year; but the intensity is much lower. Despite neurological symptoms resolved; I experienced what I considered cognitive deficits. It's difficult to say if other factors were involved as the perceived deficits were very subtle. In any case; these too resolved totally within a year. At the present; I rarely use MDMA or related substances. I consider 1-2 times a year excessive and have every intention of ceasing use altogether with no plans of starting again in the future. The primary factor behind this decision is the obvious acute and chronic toxicity related to use. Another factor is that as I've gotten older I've found the acute negative effects related with use to be linearly more intense. I'm not sure if this is a function of physical age or of prolonged use; very likely both. Finally;

during this period of very heavy use I simply ran these substances into the ground. Any sense of these experiences being novel was almost completely lost. This coupled with the physical consequences of use made ceasing use a very easy decision.,During the period previously mentioned and currently as well; I take amphetamine; pregabalin; and zaleplon regularly as prescribed. I also take fioricet as needed for migraines; which is only a few times a year. I do not smoke or drink excessively; but do consumed alcohol and tobacco on occasion socially. In the period before; including; and to an extent after the previously mentioned interval of MDMA usage; I consumed other substances regularly as well. Listing all of these would be possibly trivial and time consuming so I will summarize those used very regularly. These included: MDA; MDMA; Mescaline; LSD; and various benzodiazepines. I've never experienced negative health effects as consequence of using other substances on the level I experienced with MDA/MDMA. Honestly I think my previous use of MDMA was mainly a consequence of idiotic hubris on my part. I feel lucky to have gotten away with it as well as I have. Even after my very bad experience with MDMA; I still took mescaline fairly reguarly; on average every three months. I continue to do this up to the current date. I find this substance as or more enjoyable than MDMA and insofar as I can tell it's much more physically benign. I have not noticed any physical or mental issues related to use; but still plan to cut down in the near future as indefinite use of strong psychoactive substances just doesn't seem sustainable.,Drug used has played a fairly significant role in my life in both positive and negative ways. On one hand; it was something that helped cultivate my interest in medical and physical sciences. I went to school and majored in a field of physical the physical sciences and now have a career. I do not believe I would have went down this path had I not experimented with certain substances as I had absolutely no interest in this area before doing so. I have also been

afforded unique opportunities and made good relationships with people as a direct result of drug use. On the other hand; my use has certainly made my life harder at many times. It has often been an added complication and stress to deal with on top of everything else. I am happy with where I am today and to an extent I would not be at this exact point had I not used drugs. As a whole however; my use has made things harder and more stressful. It has also put a strain on certain relationships. I don't consider myself a very heavy user of drugs anymore; nor do I have a really great interest in them. I think I will continue to use substances I consider very safe sporadically; but I don't plan on heavily abusing any substances again. I think that statistically speaking I cannot safely afford to do so.,I consider that I have calmed down very much in my use; very nearly to the point of quitting entirely. I no longer have the desire to try new substances or use known ones more than very occasionally. For me changing my use wasn't hard in terms of being psychologically or physically stressful. It was more a matter of will power and self control; two things which are often not my strong suits. Once I had proper motivation and it was not hard for me to quickly scale back my use. Knowing that continuing to use frequently would very likely have life altering consequences made it easy for me to cut back. The use of MDMA and other substances just didn't have nearly enough benefits to offset the massive risks. Once I had quit for a while; I noticed that things in my life were much better with very infrequent use of safe substance. This just reinforced my decision to stay away from substances that have significant potential to be dangerous and to only use safe substances very sparingly.,I don't feel that MDMA has contributed much that is positive to my life. It's certainly an enjoyable substance to consume; but in a totally hedonistic way. For a few hours it's one of the best feelings in the world; but it's just a temporary escape. In this regard I don't consider it much different than drugs like methamphetamine or cocaine. No

doubt those substances are very enjoyable in their own ways; but I don't think many will claim that using them has done much to benefit their life as a whole. To some extent MDMA has changed my outlook. I'm a fairly introverted and cold person; so in some ways it has helped me open up and feel emotions on a level I'd not have experienced other wise. I believe it has helped alter my perspective in some ways that are subtle yet positive. I don't entirely regret having use this substance. It's something that I believe was certainly worth trying; at least a few times. As a whole though; MDMA and MDA have had a negative impact on my life; more negative than any other substances by far. During the time period I was using it added huge stresses to my life; both as direct consequences of using too heavily as well as the side effects of chronic use. I obviously ended up getting through everything; but in retrospect it would have been much better and much easier to have abstained.,I would tell someone who wanted to take MDMA that they should consider taking something else instead. There are better and safer substances than MDMA. To someone who wanted to quit I would say that they should just do it while they are a head. If they are using on a level that they are worried about their use; it's probably only a matter of time until it catches up to them unless they make changes.

Appendix 5: Ethical approval

UNIVERSITY OF Hull

Dear **Prof R Hammersley**,

Ethics Application Approved

The following ethics application has been approved

Note : This is a resubmitted application

Title	[R] Cutting down or stopping the use of MDMA post frequent use
Classification	Exceptional
Researcher	G Sharifimonfared (g.sharifi@2012.hull.ac.uk)
Principal (PI)	Prof R Hammersley (r.hammersley@hull.ac.uk)

http://psy.hull.ac.uk/Committees/Ethics/Apply/

Regards

Ethics Applications
Department of Psychology
University of Hull.