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# **Trauma Innovations: MDMA as a Treatment Intervention for PTSD**

**by**

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**St. Catherine University and the University of St. Thomas**

**MSW Clinical Research Paper**

**Presented to the Faculty of the  
School of Social Work**

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St. Paul, Minnesota**

**in Partial fulfillment of the Requirements for the Degree of**

**Masters of Social Work**

**Committee Members**

**Lisa Kiesel, LICSW, Ph.D. (Chair)**

**Jim Johns, MSW**

**Sharon Berndt, MSW, LICSW**

**The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a Master's thesis nor a dissertation.**

## Abstract

**Aims:** To examine the evidence displayed across 3 distinct communities (popular, scientific, & clinical) in conjunction with the use of MDMA-AP as an intervention for PTSD.

**Method:** A mixed method synthesis of qualitative and quantitative research.

**Data Sources:** Four databases were searched [1980-Present] for MDMA & PTSD and/or Mithoefer, et al. 2010 specific scientific literature providing forty-two randomly selected articles; YouTube was searched specifically targeting the same criteria to provide forty-two randomly selected videos; 201 LICSW's from Minnesota were also surveyed.

**Results:** From the three datasets, three common themes emerged: (1) attitudes specifically geared toward MDMA-AP; (2) effusive or willful language; and (3) gaps in the research.

**Conclusions:** Scientific literature is neutral to somewhat supportive of more study of MDMA-AP; primary source videos consider the topic highly newsworthy and are generally supportive of more study; LICSWs are supportive of the idea of further study of MDMA-AP.

**Keywords:** PTSD, Psychotherapy, Drug therapy, ecstasy, 3,4-methylenedioxymethamphetamine, MDMA, MDMA-AP

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## Introduction

If you asked anyone you know if they have heard of post-traumatic stress disorder (PTSD), the answer would probably come back as ‘yes’. However, the definition of what it is can be a bit unclear, even to professionals. This is due to the complexity of its symptomatology, how the manifestation of this diagnosis changes over time without treatment, and how it occurs comorbidly with other diagnoses (Briere & Scott, 2015; Cohen, Foa, Friedman, & Keane, 2009; van der Kolk, 2014). The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) has a clear diagnostic criteria for PTSD, but those who specialize in treating PTSD will argue about the variety of symptomatology and the need to break this diagnosis out into further criteria (van der Kolk & Najavits, 2013).

The U.S. Department of Veterans Affairs (VA, 2014a) currently prescribes to four different psychotherapeutic treatment options and three pharmacological options. When evaluating these treatment options, a myriad of conflicting data pertaining to efficacy rates of the current evidence-based treatment for PTSD emerges in the research studies available (Barth, Gerger, & Munder, 2014; Benish, Imel, & Wampold, 2008; Bisson, Kitchner, Roberts, & Wilcox, 2012; Ferenschak, Foa, Gillihan, Halpern, & Powers, 2010; Mills & Hubert-Williams, 2012). One of the leading experts in trauma, Bessel van der Kolk, writes about the overall efficacy rates of PTSD treatments showing a 25% to 30% decrease in symptoms (van der Kolk &

Najavits, 2013). An attributing factor for these differences could be the lack of definition of PTSD as described above.

According to U.S. Department of Veterans Affairs, the current prevalence rate of post-traumatic stress disorder (PTSD) for veterans of the current conflict is 13.8% (Gradus, 2014; Tanielian & Jaycox, 2008) and according to the National Comorbidity Survey Replication, the lifetime prevalence for the general population differs for men and women at 3.7% and 10.1%, respectively (Kessler, Petukhova, Sampson, Wittchen, & Zaslavsky, 2012).

These occurrence rates should raise red flags because the societal cost of PTSD extends beyond the therapeutic intervention of the person suffering from PTSD. A person who has not been exposed to a successful treatment intervention has the potential to have problems with obtaining or sustaining employment, experiencing homelessness, committing a violent act, abusing substances, experiencing divorce, experiencing a decrease in relational support, incurring disability costs, numerous health problems or the completion of suicide and this list is not exhaustive (Franciskovic, Gavrilovic, Jankovic, Kucukalic, Ljubotina, Matanov, McCrone, Priebe, & Schützwohl, 2009). People suffering from PTSD deserve more attention in the research of interventions with higher efficacy rates.

Any therapist who has worked with someone struggling with PTSD can tell you that finding a method of intervention which can keep a client in treatment and produce long standing symptom reduction can be difficult. With this in mind, the purpose of this study is to look at another intervention, MDMA-assisted psychotherapy. In this study, we will look at the progression of the research pertaining to MDMA as a new PTSD intervention and will explore

the sequence of attitude changes in the scientific, social, and clinical realms after its criminalization post-1985 and how this has affected the research after this point.

## **Literature Review**

### **Post-Traumatic Stress Disorder - History & Symptomatology**

Although there has been a great deal of attention given to PTSD in recent years, the disorder is not new. In fact, symptomatology related to this condition has been described in ancient Greek literature through modern literature; it has been described by Shakespeare; it has been described by young soldiers and by old soldiers that experienced the brutality of war; it has been described by survivors of rape, survivors of torture and survivors of other violent crimes; it has been described by natural disaster survivors; it has been seen on every continent and is called many different names like: shell shock, rape trauma syndrome, war neurosis, post Vietnam syndrome and so on. Despite PTSD's ubiquity and longevity, the medical and psychological communities are just beginning to understand what it is, what it does to people, and how to effectively treat it (Creamer, Wade, Fletcher, & Forbes, 2011).

In 1980, the American Psychiatric Association (APA) formally introduced "Post-Traumatic Stress Disorder" as a specific disorder in its third edition of the Diagnostic and Statistical Manual of Mental Disorders (3rd ed.; DSM-III; American Psychiatric Association, 1980). Before this publication, the symptoms described in the DSM-III, and its subsequent iterations, were generally categorized or labeled by the trauma that caused the symptoms. The symptoms of "Shell Shock," for example, were caused by those that experienced mortar shelling during the World War Two; while the symptoms of "Rape Trauma Syndrome" were caused by those that survived a rape assault (Rosen, Frueh, Elahai, Grubagh & Ford, 2010). The arrival of

the DSM-III however, represented the end of an era that separated the symptom cluster by its catalyst event and grouped the symptom cluster under any event that, according to the DSM-III, “is outside the range of usual human experience and that would be markedly distressing to almost anyone” (APA, 1985).

The DSM-III provided a critical paradigm shift in both the permanence and etiology of PTSD. Regarding permanence, the disorder pre-1980 was considered “short term and reversible,” and in its etiology the disorder was “explained in terms of hereditary predisposition, early maladaptive experiences, or a pre-existing psychiatric disorder” (Jones & Wessely, 2007). The implications of this new paradigm meant that these symptoms were not the ‘fault’ of the individual, but indeed the ‘fault’ of the event itself and therefore should be compensated and accommodated possibly throughout one's lifetime (Jones & Wessely, 2007). Another important macro-level function of the DSM-III was to further standardize clinical mental health terminology and symptomatology across professional disciplines. To this point, Spitzer, who is a psychiatrist and task force chair of the third edition, cautioned in the preamble to the DSM-III that the, “diagnostic system was way too inaccurate and schematic to ever be used for forensic or insurance purposes.” This caveat has been left out of all future editions of the DSM. Furthermore, the manual, now in its fifth edition, functions as a primary text for understanding psychopathology in higher learning institutions (van der Kolk & Najavits, 2013).

The DSM-5 places PTSD within the chapter heading of “Trauma and Stressor Related Disorders.” For individuals who are aged seven to adult, the general criteria include:

- (a) exposure to actual or threatened death, serious injury, or sexual violence; (b) presence of... intrusion symptoms associated with the dramatic event(s) beginning after the

dramatic event(s) occurred; (c) persistent avoidance of stimuli associated with the traumatic event(s), beginning after the dramatic event(s) occurred; (d) negative alterations in cognitions and mood associated with the traumatic event(s), beginning or worsening after the dramatic event(s) occurred; (e) marked alterations in arousal and reactivity associated with the dramatic event(s), beginning or worsening after the dramatic event(s) occurred; (f) duration of the disturbance is more than 1 month; (g) the disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning; (h) the disturbances not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition (APA, 2014).

It also allows for the specification of dissociative symptoms (depersonalization, derealization) and any delayed expression (at least 6 months after the event) (APA, 2014).

### **Complex PTSD or Disorders of Extreme Stress Not Otherwise Specified (DESNOS)**

The language within DSM-5 criteria tie PTSD symptomatology to a specific event that occurred at a specific time at least six months prior to onset. This diagnosis is helpful when addressing the needs of specific trauma populations, such as military veterans who served in combat and are able to make a clear link between active duty and the onset of PTSD. However, there is no symptom cluster or comparable diagnosis included in the DSM-5 for individuals who have experienced prolonged exposure to various traumas (van der Kolk & Najavits, 2013). If someone presents with the symptoms of “self-hatred, amnesia, confusion, somatization, dissociation, self-harm, and behavioral reenactments” and their childhood trauma occurred over the timespan of a number of years, their behavior cluster fits only a portion of the criteria for

DSM-5 PTSD criteria (APA, 2014). Because these symptoms may not be tied to a specific event, they are suggested to be treated as a series of unique pathologies (APA, 2014). Clinicians who see high volumes of clients who present with a similar behavior cluster suggest that PTSD is closer to a correct diagnosis – often this is referred to as complex PTSD in the literature or “disorders of extreme stress not otherwise specified” (DESNOS). Van der Kolk submitted DESNOS for consideration for publication within the DSM-5; despite favorable feedback from clinicians regarding its diagnostic utility, DESNOS was dropped in the final rounds of editing (Calof, Dolan & Elliot, n.d.).

### **Effects of PTSD on the Mind and Body**

Advances in neuroscience, interpersonal biology and developmental psychopathology shifted perceptions of PTSD away from a personality and/or trait-based theoretical model into a more neurochemically informed biologically based model (Ochberg, F., 2011; van der Kolk, 2014). It is now known that PTSD affects the whole body in various sequelae depending on the origins and severity of the complex trauma; the combined genetic and environmental risk; and protective factors of the individual. Cognitive behavioral symptomatology known to occur within complex PTSD include: (a) difficulty regulating affect including hypervigilance and/or rapid mood-swings; (b) dissociation, sometimes associated with re-enactments and/or flashbacks; “splitting off” where the experience is stored in limbic or body memory but not in autobiographical or language enabled memory; (c) difficulty establishing or keeping interpersonal relationships; (d) negative perception of self; somatization; and (e) feelings of hopelessness (Calof, Dolan & Elliot, n.d.; Hollidge, 2014; van der Kolk, 2014). Complicating diagnosis further is that PTSD, of all varieties, regularly presents with co-morbidity. Adjoining



medical conditions may include chronic pain, challenges with sleep, respiratory illness, tinnitus, gastrointestinal problems, headache, hypertension, diabetes, and other autoimmune related challenges (Gupta, 2013). Addiction, eating disorders, self-harm behaviors (such as cutting or suicidal ideation), anxiety and depression also commonly co-present (van der Kolk, 2014).

Yahuda (2002) describes PTSD as a condition where the “trauma survivor experiences an inability to get out of his/her mind.” PTSD also directly impacts memory, which is recognized in the DSM-5 criterion B intrusion symptoms (APA, 2014). The DSM-5 classifies intrusions as memories or flashbacks that hold the characteristic of recreating some aspect of the event cognitively or somatically in the individual with PTSD. Van der kolk (2014) describes the manner in which PTSD affects a person’s imagination as being “compulsively pulled back to the past” and they lose the ability to discern people and circumstances objectively. Furthermore, when the limbic brain and amygdala continually activate, based on perceived threat rather than actual harm, the will to engage in life may shift to accommodate these perceived threats. These shifts in automatic mental function are measurable when neuroimaging is employed (Aupperle, Melrose, Stein & Paulus, 2011; Ochberg, 2011; van der Kolk, 2014).

**Neurologically specific effects of PTSD.** The thalamus is responsible for sorting sensory stimuli to either the amygdala or to the prefrontal cortex in the brain (van der Kolk, 2014). If stimuli is perceived to be non-threatening, it travels up to the prefrontal cortex and placed into autobiographical memory. Should a similar stimuli approach the thalamus again, the prefrontal cortex is thought to retrieve the previous stimuli, compare it to the new stimuli and inform the thalamus to sort the new stimuli in a similar manner to the previous (van der Kolk, 2014). If the thalamus received stimuli it perceives as threatening, a signal is sent to the HPA-axis, which

alerts the hypothalamus, pituitary gland and amygdala. The hypothalamus secretes corticotropin-releasing hormone (CRH) which in turn stimulate release of the pituitary based hormones adrenocorticotrophic (ACTH) and beta-endorphin – a pain suppressor which sometimes blocks memory of trauma by “numbing out” perception of stimuli. ACTH creation then stimulates the release of cortisol into the adrenal gland. Cortisol, is affiliated with expression of emotion, learning and memory retention as well as the application of cells within the immune system. Too much cortisol results in hyper-stimulation and low amounts of cortisol deter the stimuli from transferring into the prefrontal cortex for memory retrieval, increasing chances for flashbacks later on. Cortisol also makes the thalamus more receptive toward sensory stimuli. This is a helpful function when the body is in actual danger and has the ability to help or hinder the process of repair afterwards (Dowd & Proulx, 2012; van der Kolk, 2014).

Ochberg (2011) describes magnetoencephalography (MEG) scans of the right temporal lobe of the brains, where the limbic system is located, as hyper-stimulated in individuals with PTSD. Fear centers are more active in people who have been traumatized. The prefrontal cortex also slows down, literally leaving people with poorer access to language skills. Ochberg (2011) suggests that people who have PTSD have a brain that is not damaged, but rather one that “has been injured and there is going to be a recovery period.” Thus, the methodologies associated with successful repair of the brain become extremely important when recovering from the “injury” of PTSD.

### **Current Interventions for Treating PTSD: Prolonged Exposure, CPT, EMDR**

According to the U.S. Department of Veterans Affairs (VA, 2014a), several evidence-based treatment interventions are recommended for PTSD: Prolonged Exposure (PE), Cognitive

Behavioral or Processing Therapy (CBT/CPT), and Eye-Movement Desensitization and Reprocessing (EMDR). They also recommend four specific pharmacological options to treat PTSD. Three of these options are selective serotonin reuptake inhibitors (SSRIs): (a) paroxetine, also known as Paxil; (b) fluoxetine, also known as Prozac; and (c) sertraline, also known as Zoloft and the other is a serotonin-norepinephrine reuptake inhibitor: venlafaxine, also known as Effexor (VA, 2014). They were approved due to the nature of reducing the hyper aroused fear response. However, because they generally only reduce these symptoms and do not alleviate them, it is recommended that a client combines this use with one of the three therapeutic interventions listed above (VA, 2014).

**Prolonged exposure (PE).** The term exposure dictates the primary function of this therapy, it is the engagement of eliciting the client's memory of their traumatic experience (Briere & Scott, 2015). Prolonged exposure (PE) is used primarily in the adult population and is highly utilized by the U.S. military for their personnel (Rauch, Eftekhari, & Ruzek, 2012; Rauch, 2013). It's process includes four main elements: "psychoeducation, in vivo exposure, imaginal exposure, and emotional processing" (Rauch et al., 2012) and is generally is accomplished in eight to fifteen sessions (Foa, 2008). In sessions one through three, the client is oriented with psychoeducation. This educates the client about: their diagnosis of PTSD; their particular symptoms; the specifics of how they respond to these symptoms; any intervention interfering behaviors; treatment procedures; breathing techniques; and to inform of potential distress between sessions (Foa, Gillihan, & Bryant, 2013; Rauch et al., 2012). This education informs the client that any circumventing behavior only conserves their PTSD symptomatology (Rauch et al., 2012).

The following session explains the in vivo portion of exposure which is more confrontational in nature and exposes the client to other individuals, items, or environments which remind them of their trauma (Rauch et al., 2012, Rauch, 2013). This session seeks to reveal their avoidance of these trauma reminding situations and repeatedly exposes them to decrease the fear and anxiety previously experienced (Rauch, 2013).

Then, imaginal exposure session reexamines their emotional responses to the triggers of their trauma, this is done by inviting the client to close their eyes and asking them to revisit the memory as it exists today to identify any emotions, thoughts or details of the experience (Coutinho, Figueira, Goncalves, Pedrozo, & Ventura, 2012; Rauch et al., 2012). This process helps the client to realize that recalling their trauma is not a reliving of that experience (Rauch, 2013). This realization helps them to build a sense of self-discipline and mastery over their fears.

Lastly, the emotional processing segment of this intervention involves the therapist engaging in an open-ended dialogue with the client about their perceptions of the trauma in present day, recognizing changes in thoughts and/or emotions, and an overall assessment of the progress of treatment (Foa et al., 2013; Rauch et al., 2012). These sessions allow the client and therapist to determine an end date or continuation of treatment (Rauch, 2013).

### **Cognitive behavioral therapy and cognitive processing therapy (CBT/CPT).**

Cognitive behavior therapy (CBT) was introduced in the 1960s by Aaron Beck and developed out of desire to better understand the origins of depression (Beck, 2011). CBT treatments usually last four to eight sessions and consists of “orienting the client to CBT; assessing client’s concerns; evaluating cognitions, behaviors, and precipitating situations; goal setting; addressing maladaptive thoughts and beliefs; problem solving; relaxation; ending treatment; and

maintaining the reduction of PTSD symptoms (Beck, 2011). In this treatment, Beck (2011) recommends that the therapist require a completion of homework from the client in order for the internalization of the treatment to take hold.

Cognitive processing therapy (CPT) was developed and born out of CBT in 1988 by Dr. Resick as a “twelve session therapy to be administered in a group, individual or combined setting” (Chard, Ricksecker, Healy, Karlin, & Resick, 2012). In the first four sessions, the focus is on educating the client to CPT, helping them identify how their trauma has affected their lives (i.e. feelings, thoughts, responses to situations), and then they are asked to write a narrative about their traumatic experience including details about the event (Chard et al., 2012).

Sessions five through eight focus on skill building around core beliefs and behaviors and gives the client insight into those areas in which they struggle (Chard, 2011; Chard et al., 2012). After the first eight sessions, the client is introduced to a worksheet called the Challenging Beliefs Worksheet (CBW) which allows them to assess their progress, to challenge their previously held beliefs and to create new thoughts and beliefs (Chard, 2011; Chard et al., 2012). The last four sessions shift the emphasis to the five areas of safety, trust, power / control, self-esteem, and intimacy using the CBW (Chard et al., 2012). The last session allows the client to rewrite the narrative about how their trauma experience has affected their life and compare it to the initial for review (Chard, 2011; Chard, et al., 2012).

**Eye-movement desensitization and reprocessing (EMDR).** Francine Shapiro developed eye-movement desensitization and reprocessing (EMDR) and introduced it to the therapy world in 1989 (Hulbert-Williams & Mills, 2012). The origin of this therapy was completely happenstance with a “flash of insight” and was not based on the foundation of a

specific psychological theory (Hulbert-Williams & Mills, 2012). With this in mind, research has shown EMDR to be an effective therapy in treating PTSD (Barth, Gerger, & Munder, 2014; Briere & Scott, 2015; Craig & Sprang, 2010; Duffy, Herrell, Hoge, Rae, West, & Wilk, 2013; Hulbert-Williams & Mills, 2012; Chang, Chen, Chen, Chou, Chu, Chung, Hung, Liao, & Ou, 2014).

The process of this therapy includes combining a sensation (i.e., eye movements guided by the therapist, auditory tones, finger tapping) with the recollection of the individual's traumatic event (Chang et al., 2014; Craig & Sprang, 2010; Shapiro & Laliotis, 2011). Shapiro & Laliotis (2011) explain the process of EMDR as a way of gaining insight into client's maladaptively stored memories. These memories manifest as the current dysfunctional responses to their situations, a modern-day explanation of the unconscious (Shapiro & Laliotis, 2011).

This process takes place in eight phases starting with (1) taking a client history; (2) educating them about the process; (3) assessing baseline measures, current emotional state, negative beliefs held, somatic manifestations, and eliciting the memory; (4) the desensitization phase which administers past, present and future resolutions to fully allow a natural emergence of memory in whatever form it takes; (5) the installation phase which identifies positive new belief systems and generalizations with the associated memories; (6) the body scan to detect any residual somatic disturbances; (7) closure gives the client a permanency at the end of a session for completion of EMDR; and (8) the reevaluation gives permission to explore any outstanding concerns and gives a comprehensive picture of integration within their community.

### **Efficacy Rates of Current Evidence-Based Treatments**

Many meta-analyses have been published systematically comparing the efficacy and dropout rates of evidence and non-evidence-based PTSD interventions (Benish, Imel, & Wampold, 2008; Bisson, Kitchner, Roberts, & Wilcox, 2012; Ferenschak et al., 2010; Imel et al., 2013). However, as you read through these meta-analyses there are no concrete consistent numbers for the actual efficacy rates of PTSD treatments, short or long-term.

To flush out the actual efficacy rate numbers, we had to turn to individual studies themselves. In a military study assessing CPT for its effectiveness, participants were scored using the Clinician Administered PTSD Scale (CAPS) (Forbes, Lloyd, Nixon, Elliott, Varker, Perry, Bryant, & Creamer, 2012). This study did not report the extinction of PTSD symptomatology, but they did break out the statistics by score. The percentage of participants who recorded a total CAPS score below twenty at the post-treatment point of the study measured 26.9% (Forbes et al., 2012).

Eftekhari, Ruzek, Crowley, Rosen, Greenbaum, & Karlin (2013) also researched PTSD within the implementation of prolonged exposure therapy nationwide in Veteran's Affairs. In this evaluation, they measured decreased symptomatology on the PTSD checklist, which found a 41.4% decrease. In a study out of Sweden measuring EMDR results in a 35-month follow-up, found 60% of their participants did not fit the criteria for PTSD (Aberg-Wistedt, Hallstrom, Hogberg, Pagani, Soares, Sundin, and Tarnell, 2008). However, there are those who would argue negatively about the treatment of complex PTSD with only an eight session treatment method (van der Kolk, Spinazzola, Blaustein, Hopper, Hopper, Simpson, & Korn, 2007).

### **Limitations of PTSD Evidence-Based Treatments**

In the meta-analysis conducted by Bisson, et al. (2012), which centered their focus on military veterans, they assessed studies which included war veterans from the most recent conflict back to war veterans from the Korean war and determined they could only feasibly use twelve out of the twenty-nine originally designated studies due to a lack of data (Bisson et al., 2012). This analysis did not give information about the amount of time since the veteran had been diagnosed with PTSD, nor did it yield efficacy rates. However, it made some observations about the veteran population treatment responses being consistent with the civilian population (Bisson et al., 2012).

Ferenschak, et al. (2010) looked at thirteen studies with 658 participants involving prolonged exposure. This analysis had three criteria for inclusion: “randomly assignment to condition; double blind; and an inclusion of the description of withdrawals and dropouts” (Ferenschak et al., 2010). They concluded there were no significant differences between PE, CPT, EMDR, or cognitive therapy in efficacy rates, however argue that in each therapy a form of exposure is instituted in the client’s sessions leading one to speculate about the role of exposure in each therapy’s efficacy rate (Ferenschak et al., 2010).

### **Introduction of a New Treatment Modality - MDMA-Assisted Psychotherapy**

**What is MDMA?** 3, 4-methylenedioxymethamphetamine (MDMA) is a synthetic pharmaceutical psycho-stimulant chemically defined as a phenylethylamine derivative. This drug is taken most often in tablet or capsule form, but it may also be used as a powder, either snorted or dissolved into drinks before ingestion (Inaba & Cohen, 2011). MDMA is considered clinically most effective between dosages of 60-125 mg. Its effects typically last 4-6 hours with onset of effects after approximately 20 minutes and a peak experience close to midpoint. It is



uncommon to overdose on this drug. MDMA morbidity rates are lower than those of many SSRIs and over the counter pain relievers (Holland, 2001). When used therapeutically, MDMA has been administered as a pill in 75-175 mg dosage. Typically, the subjects start with a lower amount, and after 90-120 minutes, they are offered an optional second dosage of no more than 50 mg (Mithoefer, 2013; Holland, 2001).

MDMA is most effectively absorbed through the gastrointestinal tract. Its chemical structure is similar to naturally occurring phenylethylamines already present in the brain (Shulgin and Shulgin, 2000). MDMA primarily stimulates serotonin neurotransmitters, which is known to regulate sleep, memory, sexual activity, mood, aggression, and pain sensitivity.

**History of MDMA Prior to Criminalization in 1985.** The German pharmaceutical company Merck created MDMA inadvertently in 1912 while developing a drug to help people with chronic bleeding (Holland, 2011). They considered it an intermediate compound in the synthesis of the drug that would eventually become hydrastinine, used in controlling uterine hemorrhaging. The patent for MDMA was filed on Christmas Eve, 1912 and patented on May, 16th 1914 (Holland, 1997; Pilcher, 2008). Patent owners hold a monopoly on their creations for a 20-year period, after which period, the drug may be produced in a generic formulation (Gupta, Kumar, Roy, & Gaud, 2010). As such, the patent for MDMA expired long ago and because MDMA is illegal throughout most of the developed world, there is little financial incentive for pharmaceutical companies to produce MDMA today.

MDMA appears only twice in scientific literature prior to 1953 as a chemical byproduct of other experiments (Holland, 2001). The Army Chemical Center known today as the Edgewood Chemical Biological Center, a chemical warfare research lab for the U.S. military,

included MDMA with mescaline, methylenedioxyamphetamine (MDA) and other lesser-known psychotropics in a 1953 study on chemical weapons. All studies, according to Hartman and colleagues (1973), including testing of MDMA, MDA, DMA, and other psychotropic drugs, were completed only on animal subjects including dogs, guinea pigs, mice, monkeys and rats. Initially these were secret studies and were declassified in 1969 (Holland, 2001, p. 12).

Chemist Alexander “Sasha” Shulgin, refined the synthesizing process that creates MDMA in 1976 (Holland, 2001; Shroder, 2014). In his first published human study conducted in 1978, Shulgin and colleague Nichols described the subjective effects of taking MDMA as, “an easily controlled altered state of consciousness with emotional and sensual overtones” (Holland, 2001, 1978). Shulgin refined and self-tested a multitude of psychedelics during the 1970s and 1980s. He meticulously catalogued and when possible, published his chemical synthesizing refinements per the norms of the scientific community. He created a measurement system, consisting of pluses and minuses to track the cognitive responses to each drug (positive, negative, euphoria etc.) (Sauret, 2010). If Shulgin had a favorable result in his self-test he offered the drug to small groups of people in the community who would use the same system to gauge their effectiveness of the drug. A one-time chemist for Dow Chemical, Shulgin was well acquainted with the scientific community (Holland, 2001; Sauret, 2010). Shulgin & Shulgin (2000) showed how MDMA might be used as a helpful and unique tool to foster a therapeutic alliance. The drug soon caught on in the therapeutic community and has been estimated by Shulgin & Shulgin (2000) and Pentney (2001) to have been used in more than 4,000 therapeutic instances before its’ criminalization in 1985 (Inaba & Cohen, 2011 p. 6.14).

Clinical studies establishing the evidence-based effectiveness of the therapeutic usage of MDMA were not pursued until after the drug was deemed a Schedule I substance by the U.S. Drug Enforcement Agency (DEA) in 1985 under the Controlled Substance Act. This scheduling defined MDMA as a “drug with no currently accepted medical use and a high potential for abuse. Schedule I drugs are the most dangerous drugs of all the drug schedules with potentially severe psychological or physical dependence” (U.S. Drug Enforcement Agency, 2014).

The majority of these pro-MDMA studies have been initiated, sponsored, and/or facilitated in connection with a non-profit research and educational institution called the Multidisciplinary Association for Psychedelic Studies (MAPS) founded by Rick Doblin in 1986 (Shroder, 2014, p. 223). Their mission is to “develop medical, legal, and cultural contexts for people to benefit from the careful uses of psychedelics and marijuana” (MAPS, 2014) While MAPS features studies related to many psychedelic substances, such as marijuana and ketamine, their most clinically successful work is related to the usage of MDMA as a therapeutic intervention tool for people with PTSD. They are currently sponsoring FDA approved clinical trials in more than seven countries and are creating a manual to assist therapists using MDMA with PTSD clients. MAPS assertively suggests that in cooperation with FDA MDMA will be removed from Schedule I status in the U.S. by the year 2025 (MAPS, 2014).

**MDMA-Assisted Psychotherapy Session (MDMA-AP).** Within the manual, “A Manual for MDMA-Assisted Psychotherapy in the Treatment of Posttraumatic Stress Disorder,” created by Mithoefer and colleagues (2013) and accompanying MAPS first FDA-approved clinical trial application, therapists are referred to as “investigators” and clients are called “recipients.” There are ideally two investigators for each recipient and it is suggested this team consists of one male

and one female. At least one investigator should be trained in somatic/relaxation methodologies and both should understand the effects of the drug ahead of any contact with the client.

***Non-drug intervention.*** The intervention begins with non-drug sessions lasting between one to one and a half hours to discuss the recipient's trauma in overview and to describe the effects of the drug as well as answer any questions the recipient may have. It is suggested that an agreement be made between the recipient and the investigators to bring up the trauma discussed in these early non-drug intervention sessions during the MDMA sessions if the recipient does not do so on his/her own. Additionally, a safe word needs to be established so that the recipient understands that it is within their ability to cease any activity at any point, short of discontinuing the effects of the drug.

***MDMA intervention.*** The MDMA-assisted intervention session lasts between six to eight hours and is attended by both investigators and the recipient. While there have been no instances where it has been needed, Mithoefer and colleagues suggest that Basic Cardiac Life Support (BCLS) and Advanced Cardiac Life Support (ACLS) be available in case of emergency. The recipient is offered a therapeutic dose of MDMA, usually between 60-125 mg and a glass of water. They are then offered eyeshades and earphones with music to listen to. Twenty to forty minutes after ingestion, the drug begins to take effect.

The co-investigators are there to provide a safe, stable environment for the recipient while practicing active listening and developing an empathic rapport. Mithoefer et al. (2013) define this attention qualitatively as consisting of: "minimal encouragement, verbal and non-verbal; invitation rather than direction; paraphrasing; reflecting; emotional labeling; validating; reassurance and waiting; allowing participants to come to conclusions themselves." They also

suggest the following phrases to invite non-directive communication: “we encourage you to ...” or “This might be a good time to ...” They also suggest investigators “use the gerund of a word, i.e., instead of ‘breathe’ say ‘breathing’ because it is suggestive rather than directive; [this reflects] back to the participant what they are saying in order to continue conversation without being directive” (p. 6-7).

The effects of MDMA peak at approximately one-hour after ingestion. During this period and throughout the peak experience, investigators work to facilitate the recipient’s insights regarding their trauma by suggesting the recipient “go inside” and examine whatever comes up at a pace that is most comfortable to him or her. Philosophically, Mithoefer describes this approach as similar to how he used to practice emergency room medicine in his early years of practice before he became a psychiatrist:

If someone goes to the emergency room with a laceration, a doctor can remove obstacles to healing (e.g. remove foreign bodies, infection, etc.) and can help create favorable conditions for healing (e.g. sew the edges of the wound close together), but the doctor does not direct or cause the healing that ensues (Mithoefer et al., 2013; p. 8).

In other words, the role of the therapist is to facilitate healing from trauma, not direct it.

***Tailoring the experience, non-judgmentally, to the recipient.*** The subjective experience of each client should be paramount and will likely vary recipient to recipient. Individual preferences should be considered as much as possible pending safety or ethical risk. Some may not want to use eyeshades or music and others may prefer to draw, paint, sculpt or move to express themselves rather than hold a conversation. Furthermore a range of emotional affect may be expressed, ranging from positive to negative. It is imperative the clinicians advocate for the

recipient to share these feelings and related insights in as much detail as possible. Some of these expressions may fall outside the realm of average cognitions, potentially taking on spiritual or magical description. It is important that the investigator not pathologize these responses and instead encourage the recipient to see where these insights may lead them and determine whether or not the recipient feels these insights might bring relief or clarity to their situation.

*Post-plateau.* As the drug wears off, investigators are asked to remind the recipients that they are in a safe place. If possible, they might work with the recipient to remember as much detail from their insight as possible and reflect on the ways in which it might be helpful for them moving forward. This is a particularly important point since experiences during MDMA-AP are typically remembered with good clarity after the session has ended. It is common for the actual application of the insight to not be fully known or understood until the recipient leaves the session.

*After care.* After the MDMA-assisted intervention, the recipient stays overnight at the facility where the intervention occurred. Significant others may sleep with them if the recipient prefers. A therapist is available to them the following day for an optional one hour non-drug follow up session.

*Repetition and conclusion.* There is one more non-drug session in the week leading up to the next of three total MDMA-assisted sessions. The function of these sessions is to determine if the client wishes to continue, to see if they have any questions, and to see if any insights from the session have carried over into the client's everyday world. After three total 6-8 hour interventions and several interceding non-drug one-hour sessions, the therapy is considered complete (Mithoefer, et al., 2013).

**The Effects of MDMA.** The effects of MDMA on thoughts, feelings, and perceptions are its main attraction for clinical application within MDMA-AP (Hockenhull, 2013). These effects are known to include general feelings of well-being, euphoria, happiness, willingness to engage in social activities, increased feelings of empathy towards others and a shift in sensory perception. Generally, the user has a cogent awareness of their surroundings throughout usage; this differentiates the effects of MDMA from other hallucinogenic and psychedelic drugs they are occasionally grouped with on drug use surveys (Holland, 2001; Inaba & Cohen, 2011; World Health Organization, 2001).

MDMA primarily affects two neurotransmitters, serotonin and dopamine (Holland, 2001). MDMA acts as a powerful agonist to serotonin by inhibiting monoamine oxidase or MAO. An MAO is an enzyme that metabolizes neurotransmitters like serotonin in the synaptic cleft. Inhibiting reuptake and MAO prevents the metabolism of serotonin, leaving it in the synaptic cleft longer thereby increasing the duration of the effects. “MDMA is unusual pharmacologically, because it can produce both of these effects at the same time” (Holland, 2001). Regarding dopamine, MDMA has many of the same effects as with serotonin, with a slight twist. According to studies by Nash & Brodtkin (1991) and Gudelsky & Nash (1996), the dopamine release seems to be dependent on the amount of serotonin released by MDMA. Ergo, the stronger the effect on serotonin release produced by MDMA, the stronger the effect on dopamine release produced by serotonin.

Both short and long term effects of MDMA have been noted. Short term psychological effects, which may last for 3-6 hours, may include: euphoria, empathy, clarity, heightened self-esteem, acceptance, intimacy, happiness, open mindedness, and enhanced sensory perceptions

“without causing any depersonalization or detachment of the users from the reality of their environment” (Inaba & Cohen, 2011).

Short term physical effects may include: elevated heart rate, pupil dilation, increased body temperature, dehydration, headache, nausea, jaw tension, teeth grinding, decreased appetite, dry mouth, and tachycardia (Inaba & Cohen, 2011; Holland, 2001; WHO, 2001). While longer-term psychological and physical effects include insomnia, depression, anxiety, and muscle tension. The duration of the longer-term effects may be influenced by a number of factors related to personal genetics and brain chemistry. Rare instances of seizure, stroke, and damage to serotonin producing neurons have also been recorded though these instances, often occurred in animal trials rather than in humans.

In the seminal studies observing the side effects of MDMA on animals, were later discovered to have low rates of reliability, efficacy, and in some cases, were so fundamentally flawed in their methodology and findings that they had to be retracted (Holland, 2001; Pincock, 2003). This was famously the case with Dr. Ricaurte’s (2002) study “Severe dopaminergic neurotoxicity in primates after a common recreational dose regimen of MDMA” (Holland, 2001; Pincock, 2003). Nevertheless, these suspect findings continue to show up in the symptomatology of the literature to this day, much to the chagrin of some members of the scientific community (Shroder, 2014). One professor of psychiatry from the UCLA School of Medicine who had long questioned Ricaurte’s work was quoted as saying that the retraction “really demands a thorough, objective re-evaluation of the whole record of MDMA research going back 15 years” (Bartlett, 2004).



According to Holland (2001), the neurotoxicity of MDMA is dependent on both the dosage and the frequency of use. Studies by O'Shea (1998) and Commins (1987), found that "long term changes occur in rats at doses approximately five to ten times higher than those known to be psychoactive in humans" (Holland, 2001). Holland also talks about studies indicating "that 'binge' use of MDMA carries a greater risk of neurotoxicity than single doses" (Holland, 2001). Many of the animal studies that have been done suggest that repeated use of MDMA, or use of large doses, pose the greatest potential for damaging effects.

Because MDMA is a Schedule I drug, most experiments that have been done on the neurological effects of MDMA have been on animals. Applying these findings to humans is limited for three reasons: (1) it is very difficult to determine the dosage equivalent of MDMA from animal to humans; (2) it is unknown, as with all animal studies, whether MDMA affects the brain processes of animals in the same way as with humans; and (3) the results of MDMA studies vary widely based on the organism tested; such that, it is impossible to know or predict how MDMA might be comparable in human subjects (Finnigan, 1988; Ricaurte, 1988; Logan et al., 1988; O'Shea et al., 1998; Insel et al., 1989; Fredrick, 1995).

Nevertheless, in humans, "repeated or high dose MDMA/ecstasy use has been associated with tolerance, depressive symptomatology, and persisting cognitive deficits, particularly in memory tests" (Meyer, 2013). Meyer (2013) goes on to explain that heavy users of MDMA have neuroimaging scans that indicate neurotoxicity as well as neurotransmitter receptor changes in the frontal lobe, the location of the majority of serotonin receptors. The main problem with these studies is an inability to confirm causality as most of the participants are chronic poly-drug users, and, as these drugs were purchased illegally, there is no way to confirm that such users

were in fact taking pure ecstasy. According to Holland (2001), many street manufacturers producing pills under the name of ecstasy often contain other chemicals like phencyclidine (PCP), Methamphetamine (speed), ketamine, ephedrine, dextromethorphan (dxm). In a survey conducted by Cohen (1995), chronic long term users of ecstasy self-reported symptoms of depression, depersonalization, forgetfulness, joint back and neck pain, stomach pain, headaches, and insomnia (WHO, 2001).

Although there have been numerous studies describing the negative effects of MDMA use, there have been no studies that describe any long term negative effects of two or three single doses of MDMA.

**MDMA-AP Efficacy Rates.** MAPS has sponsored two completed phase 1 MDMA-AP clinical trials in the US and Switzerland: “MDMA-Assisted Psychotherapy for Posttraumatic Stress Disorder” completed September 2008 in Charleston, SC with results published in *Journal of Psychopharmacology* in July 2010; “MDMA assisted psychotherapy found to have a large effect for chronic post-traumatic stress disorder” completed January 2011 in Solothurn, Switzerland and published in *Journal of Psychopharmacology* in February 2013. Both studies were submitted to the FDA with IRB approval within MAPS’ Investigational New Drug (IND) application for MDMA.

There are five additional phase 2 MAPS sponsored MDMA-AP clinical trials in process in the US, Canada and Israel including: a military veteran specific study in Charleston, SC; a study on possible relapse after MDMA-AP intervention in Charleston, SC; a study where health interns (nurse, social worker, therapist) train alongside MAPS trained therapists to complete a Phase 2 MDMA-AP clinical trial for people with PTSD from sexual assault and/or military

experience in Boulder, CO; a phase 2 application of the pilot study from SC on MDMA-AP in Vancouver, Canada; a phase 2 application of the pilot study from SC on MDMA-AP in Tel Aviv, Israel (MAPS, 2014).

This phase 1 clinical study out of South Carolina by Mithoefer and colleagues (2010) provided the treatment methodology blueprint for all studies moving forward. The MAPS web site refers to this randomized, double-blind and placebo-controlled study as their “Proof of Principle.” In it, subjects who were diagnosed with PTSD stemming primarily from sexual trauma, natural disaster and/or witness to violence were screened out for evidence of neurological disorders (such as autism), personality disorders, schizophrenia and evidence of bipolar. Selected subjects included 3 men and 20 women who tried, with no success, multiple types of therapy and pharmacology to relieve the symptoms of PTSD. Given this, the study refers to its’ subjects as “treatment resistant.” The average length of PTSD was 17 years across the group.

Physiological and neurocognitive measures were assessed to determine baseline scores for all subjects and were tracked throughout the course of the study to determine outcomes. This included a rigorous medical evaluation consisting of an electrocardiogram (ECG), physical examination, full panel of bloodwork and urinalysis to track drug toxicology. Blood pressure, temperature and pulse were measured during all experimental procedures.

The CAPS assessment was the primary neurocognitive tool used to establish and determine a DSM-IV adherent diagnosis of PTSD (CAPS <20) over the course of the study. The Impact of Events Scale-Revised (IES-R) and the Symptom Checklist 90-Revised (SCL-90) were also employed throughout the study and used as secondary neurocognitive outcome measures.

The total time for MDMA-AP intervention, from initial screening to completion of the last non-medicated therapy session, was approximately two months in duration. CAPS scores registering below the PTSD criteria threshold were returned within thirty-one days of this period. Study results showed that 80% of all subjects from this pilot study tested below the CAPS score for PTSD criteria. Effectively, their PTSD symptomatology was extinguished. These results held steady for a three and half year period for the majority of subjects, where only a few “relapsed due to new life stressors.” Their results were published in a long term follow up study in the *Journal of Psychopharmacology* from November 2012 (Mithoefer, et al., 2011).

Phase 2 clinical studies sponsored by MAPS will incorporate this same phase 1 randomized, double-blind and placebo-controlled protocols for MDMA-AP while introducing subjects with more types of PTSD such as military veterans and individuals diagnosed with terminal illness (MAPS, 2014).

### **Conceptual Framework**

#### **Diagnosis and Treatment of PTSD Through the Lens of Conflict Theory**

We are first evaluating the PTSD diagnosis through the lens of conflict theory. Conflict theory notes an inequality in the balance of power. The diagnostic criterion for PTSD in the DSM-5 (American Psychiatric Association, 2013) still is not agreed upon by trauma experts (van der Kolk & Najavits, 2013). As mentioned in the above literature review, there is a continued rally around the reclassification of complex PTSD under the DESNOS diagnosis; however, it failed to make it into the latest issue of the DSM-5.

When a diagnosis is not clear, the full extent of the needs within a treatment intervention is also not realized. Another area in which experts still cannot agree upon are those of efficacy

rates and which intervention has the most effective rates (Benish, et al., 2008; Bisson, et al., 2007; Eftekhari, Rauch, & Ruzek, 2012; Hubert-Williams & Mills, 2012). If these conflicts exist within the realm of research, it can be assumed there must be conflicting assumptions in the treatment arena.

### **Discourse of Research**

All relationships including those of a therapeutic nature involve a recognition of power differentials. Within the context of policy related to the usage of MDMA there is a clear differential in the power of the U.S. government redefining this drug intervention as a Schedule I drug, thereby outlawing it in conjunction to further research (Rosenbaum & Doblin, 1991). This power struggle was created when derivatives of MDMA started to become popular as the street drug, ecstasy. This conflict has created a fuel to those who believe this intervention provides greater efficacy rates than the currently held evidence-based interventions for those suffering from PTSD to lobby for permission to continue their research (Hockenull, 2013; MAPS, 2014; Shroder, 2014). The research struggle has been shouldered mostly, if not the only, by MAPS as the lobbyist in this fight for the rescheduling of the MDMA drug. As they prove to show governmental agencies the effectiveness of this intervention, they also have to become allies in order to overcome the monetary hurdles.

This study sets out to answer several questions. The first asks, how has scientific and public perception affected clinical science in the pursuit of MDMA-AP research and the treatment of PTSD? The second question asks, what are the attitudes of licensed clinical social workers in relation to MDMA-AP as an intervention for PTSD and its further research after they are informed it is a psychedelic intervention? Our hypothesis speculates there was and continues

to be biases surrounding MDMA as a credible pharmacological intervention since its inception as a Schedule I drug.

We also contend that the attitudes of licensed clinical social workers, especially those with a chemical dependency background, will not have a favorable attitude toward this intervention because of its street drug counterpart.

### **Methods**

This research was conducted as a mixed methods study. It is composed of qualitative textual analysis of scientific and primary sources and a quantitative survey of licensed clinical social workers. The authors each claimed one of these three areas. Christian focused on scientific literature, Grey worked with primary source video and Sorg addressed the survey. Research design, data collection, findings and analysis were explored and then written up independently by each author. Qualitative data was then submitted to either Grey or Christian for inter-coding reliability checks and quantitative data was examined in consultation with committee chair and co-authors.

The textual analysis pieces of this research project addressed the research question: How has scientific and public perception affected clinical science in the pursuit of MDMA-AP and the treatment of PTSD? To answer this question, the current authors used a textual analysis research design. The text included in this study will be drawn from two broad categories: scientific literature and primary source material originating from popular cultural media.

The quantitative survey portion of this research addresses the question: What are the attitudes of licensed social workers toward the use of MDMA-AP as an intervention for the treatment of PTSD after being informed it is a psychedelic drug?

## **Research Design: Scientific Literature**

**Development.** There are several turning points in the long journey MDMA has taken to get thus far. One main turning point was the first human study of the efficacy of MDMA as a treatment for treatment-resistant PTSD. This study is the Mithoefer, et al. 2010 study titled, “The safety and efficacy of methylenedioxymethamphetamine-assisted psychotherapy in subjects with chronic, treatment resistant posttraumatic stress disorder: the first randomized controlled pilot study.” As a major turning point in the literature, this study will be used as an inclusion criteria; such that any scientific paper published in a peer review journal that directly referenced in Mithoefer, et al.’s 2010 paper will be included in the data to be analyzed.

Another criteria for inclusion in this textual analysis will be any clinical paper published in a peer review journal between 1980 and present day, that is related to the study and treatment of PTSD with MDMA or “ecstasy.” Any papers not related to MDMA or “ecstasy” AND treatment of PTSD will be excluded from the data pool.

**Data Collection.** Several databases were used to collect scientific literature. The databases used to harvest data were: 1. UST/SCU Summon, 2. EBSCO, 3. ProQuest, and 4. Sciencedirect. The search terms within these databases included: A) MDMA and/or ecstasy; B) Mithoefer AND MDMA; C) Mithoefer AND Parrott, D) PTSD was added as a search term to all of the above searches and all of the above collected article’s references were perused for articles not before collected.

The total number of results in each category, after screening out duplicates, were thus: A) 83, B) 68, C) 59. These were combined (210 articles) and a random number generator from

www.random.org was used to pull 20% (42 articles) at random from this overall pool (see Table 3). It was from these 42 articles that the scientific literature textual analysis was conducted.

**Data Analysis Plan.** Overall bodies of data found in each area, scientific literature and popular cultural media, were analyzed for evidence of themes independent from one another and then in relation to one another. Data was sorted into 5 broad categories: (1) mention of neurological damage (apoptosis, neurotransmitter degeneration, myelin degeneration, neurotoxicity, permanent serotonin depletion); (2) mention of MDMA as a psychopharmacological intervention for psychological pathology; (3) mention of explicit Positive or Negative MDMA use; (4) mention of explicit “Schedule I” language; and (5) “Effusive/Willful” mention of emotional reactionary or hyperbolic language.

Category 3, the mention of explicit Positive or Negative MDMA use, was further separated into 5 sub-sections: “For It,” language that explicitly requests more use and study of MDMA as a part of a PTSD intervention; “Positive ,” language that declares overall positive findings but fails to request further use and study of MDMA as a part of a PTSD intervention; Neither, articles that report both for or against language without a request for further action; “Negative,” language that declares overall negative findings but fails to request further action; For and Against It, language that explicitly states how the use and study of MDMA as a part of a PTSD intervention is inherently problematic, dangerous, and or ill advised. Category 5, the “Effusive/Willful” category includes language that exaggerates findings, flagrantly ignores counter findings, or expresses a sociopolitical agenda regarding the use of MDMA, was separated into three categories, none, yes/for, and yes/against.



All scientific literature was collected initially by Christian and was checked for inter-coding reliability by Grey. Data was then examined by Sorg, committee members and research chair for emergent themes and input for analysis and discussion.

### **Research Design: Primary Source Data (Video)**

**Development.** Videos from YouTube were viewed and then transcribed for the purposes of finding popular discussions/representations related to research surrounding the use of MDMA and MDMA-AP as an intervention in the treatment of people with PTSD. This data was sorted into 5 pre-selected categories which were used to differentiate code types. These code types were then grouped into sub-themes reflecting trends present within 3 of the 5 categorical groups and then analyzed for discussion.

**Data Collection.** Searches were limited to the website YouTube on Grey's personal computer. The search term "MDMA PTSD" was used in each instance. Videos appearing singly and within playlists created by other YouTube users were considered for analysis. No filters were applied during the search and videos were retrieved and then edited per inclusion and external criteria (detailed below).

**Inclusion/Exclusion Criteria.** Videos considered for analysis must have been returned as a result of a YouTube search using the exact terminology "MDMA PTSD." Videos must have been created after the year 1980. Videos must also contain spoken text suitable for transcription, feature at least 250 views and must not exceed 15 minutes in duration. All mentions of MDM/MDMA-AP and related spoken text were transcribed and submitted as data to be considered for coding. Text related to PTSD only was not included for transcription. If an

individual appeared in a video but did not speak, the actions of that individual were not reflected in the transcription and were not considered when analyzing data.

***Contextual Data.*** Because this study is interested in how public perceptions affect clinical outcomes, metadata was also collected for each video prior to coding with the intention of providing as much context as possible prior to and throughout analysis. Metadata fields collected from the YouTube page accompanying each video included: a sharable web link; year made; number of views as of the date video was retrieved; video title; video publisher (the individual or entity responsible for publishing the video to YouTube); length of video; kind of video (as defined by YouTube); and description (as written by whomever published the video to YouTube).

***Year Made.*** “Year Made” refers to the year in which the video was created, not the date it was published to YouTube. When this date was not available from within the metadata directly, it was pulled from credits edited into the YouTube video, or retrieved by searching for video specific identifying factors (producer name, etc.) within the Internet Movie Database (IMDB) search engine. If a video presented a year of creation within the video that differed from the one published in the metadata, the year included in the video was used. When no corroborating year reference was available, the year the video was published to YouTube was listed as the year the video was made.

***Role of Speaker.*** As videos were transcribed, the name and when available, the role of each speaker were included within each transcription and eventually within each code. The roles of speakers were placed into the following categories: “Case Study and/or recreational user of

MDMA,” “Researchers and/or advocates for MDMA,” “Web/News Reporter and/or Narrator/VO,” and “Public Opinion.”

The category, “Case Study and/or recreational user of MDMA” was defined by individuals who were subjects in Mithoefer et al.’s 2010 pilot study or supplemental FDA-approved clinical trials, individuals who participated in underground MDMA-AP, and/or recreational users of MDMA and/or the street drug known as ecstasy. “Researchers and/or advocates for MDMA” was defined by individuals who were not natural science researchers by vocation but advocated for MDMA-AP with clinical acumen and/or psychiatrists, therapists, nurses and/or chemists who were somehow connected to the research of psychedelics, particularly MDMA. The category, “Web/News Reporter and/or Narrator/VO” was defined by individuals who reported and/or summarized the information presented in each video. These individuals may be presenting scripted text or speaking extemporaneously during an interview segment. Lastly, “Public Opinion” was defined by individuals not otherwise defined who share their opinion on MDMA-related matters.

*Purpose of Video and Intended Audience.* The general purpose of the video as well as the intended media audience were qualitatively defined by Grey. Possible outcomes in these related categories included: “Documentary feature for television”, “News feature for television – interview,” “News feature for television,” “News feature for the web – interview,” “News feature for the web,” “Podcast for the web – interview,” “Podcast for the web,” “Professional conference video for the web,” and “Promo/fundraiser for the web.” The terms “news,” “documentary” and “podcast” refer to the style and structure of each video as they are generally defined in popular culture. “News” and “documentary” contained increased applications of editing in line with the

storytelling nature of these genres. “Podcasts” were typically single or two camera straight-shots of one person talking or one person interviewing another with little to no editing.

The intended audience for each video was determined by explicit notation in the metadata describing the intended purpose of the creation of the video or by subjective interpretation by Grey. Factors such as editing style and film type contributed to these qualitative categorical discernments. For example, a single camera with no editing and little to no additional lighting for an event at a professional conference was determined to be for the web, whereas, a video with multiple shots and high quality lighting and audio was more likely to be considered for a television audience. The frequency of appearances by individuals who appeared across the video selection group as well as the number of times an entity or individual produced a video was noted as well.

Primary source data was collected between the dates of 1/31/15 and 2/4/15. Two thousand-two-hundred-and-ten (2210) results were returned in the initial search. From this larger group the first 50 videos were considered for analysis per the terms of the inclusion/exclusion material.

**Data Analysis Plan.** This group of 50 included two playlists which were mined for content (BAAHKAST, 2015; Evan Mantri 2015; alexykh, 2015; Sky News, 2015; AsapSCIENCE, 2015a). Of these total returns, 42 videos were assigned a video identity number (VIN) ranging from 1-42 in the order in which they appeared in the YouTube search result. VINS 16, 25-27, 30, 32, 33 and 40 were removed after not fitting analysis criteria. VINS were not reassigned after unusable videos were removed, thus the remaining VINS are not purely sequential (see Table 1).

Selected videos for analysis were entered into a Google spreadsheet accompanied by identifying contextual metadata. Transcripts were created in the order in which they were retrieved from the YouTube search on a separate Google document. Preselected code categories were assigned a color and transcribed text was highlighted to reflect each code category selection. Multiple codes from a single code category were assigned a letter and designated sequentially per the logistics detailed below. One Google spreadsheet tab was used to collect each of the 6 categories of coded data. Sub-themes for each category were determined once all transcription was complete and assigned to one of the pre-selected categorial spreadsheet tabs. Research colleagues Christian and Sorg had shareable access to all data throughout the collection period.

*Codes and Categories.* The same five broad categories used to examine scientific literature qualitatively, were also used for the initial coding scheme for primary source data: (1) mention of neurological damage (apoptosis, neurotransmitter degeneration, myelin degeneration, neurotoxicity, permanent serotonin depletion); (2) mention of MDMA as a psychopharmacological intervention for psychological pathology; (3) mention of explicit Positive or Negative MDMA use; (4) mention of explicit “Schedule I” language; and (5) mention of emotional reactionary or hyperbolic language. An additional sixth category was created for primary source data only to accommodate any themes that might emerge from within any remaining text in each transcript. This broad category was called (6) remaining text.

Due to the ranging nature of content within YouTube, and the inability to tie search criteria directly to Mithoefer et al.’s 2010 pilot study, primary source materials describing usage of MDMA outside the scope of Mithoefer’s FDA-approved clinical study were included for

coding analysis across all categories. This included the possibility of text pertaining to recreational MDMA use and/or unlicensed, illegal and secretive therapies using MDMA sometimes referred to as “underground.”

These categories were further refined accordingly: category (1) “mention of neurological damage (apoptosis, neurotransmitter degeneration, myelin degeneration, neurotoxicity, permanent serotonin depletion)” was to be used only when discussing clinical usage of MDMA, not references to possible neurological damage per use of the street drug (ecstasy or molly).

“Mention of MDMA as a psychopharmacological intervention for psychological pathology” (2) was interpreted as referring to any individual specifying the ways in which MDMA helped that person process some aspect of their mental health. This category may include reference to ecstasy, molly or MDMA provided there was an accompanying reflection on the drug’s utility towards addressing mental health concerns. This category also may or may not reference clinical applications of these instances. Data in this category may include individuals included in case studies describing their experience on the medication and/or clinicians/researchers describing the intended effects of MDMA during intervention. Findings from studies on MDMA/PTSD are also included in this category.

Category (3) “mention of explicit Positive or Negative MDMA use” included a range of positive, negative and/or neutral mentions of usage of MDMA within the clinical setting only. Those commenting on clinical use however, came from varying backgrounds featuring a range of knowledge on how the intervention worked -- from no knowledge to expert knowledge.

“Mention of explicit ‘Schedule I’ language” for category 4 was extrapolated to include any text mentioning the illegality of MDMA and any policies that related directly to that illegality.

Category (5) “mention of effusive/willful language” included texts that may be appropriate for any other category except that it is expressed with a heightened emotional pitch or certainty. This might include sweeping generalizations and/or strong emotional reactions, negative or positive, to MDMA-AP related matters.

*Sub-themes within Coded Categories.* The coded text captured within each of the three categories was further differentiated into emergent themes within each category. These sub-themes did not represent all of the possible sub-themes within each category, but they did represent the most frequently appearing themes. Codes that did not fit into a sub-theme were grouped into the sub-theme category “general” within each code category.

*Code Definition and Refinement.* Segments of coded text were as brief as one sentence in length and other times composed of multiple sentences and/or paragraphs. Their common factor was that each coding segment represented one primary idea reflecting one of the pre-selected coding categories. While it is possible that one code might fit multiple categories, a choice was made by the author to determine the most prevalent category per code and file accordingly. Most codes were spoken by a single individual although in some instances, such as during an interview, two speakers in dialogue were represented within one code. These were coded as “exchanges.” Identities of the speakers of all text were tied to each code and included throughout analysis to ensure that context related to each speaker remained as transparent as possible.

Additionally, sentences seemingly off categorical topics were included within each code if they provided relevant contextual and/or clarifying details for each spoken iteration. If an unclear article was referred to within a coded segment (such as “it” or “they”) and a clarifying sentence was not in proximity to the selected text, the item being referred to (for example, “it” referring to MDMA) would be included in brackets (“[MDMA]”) to show these edits. Furthermore, if segments of text were removed within a coded selection these were marked by an ellipses within brackets (“[...]”). These edits were made as sparingly as possible.

*Video Identification Number (VIN).* Each video was assigned a number at the time of initial selection. Codes selected/created within each video were then sorted according to content. When multiple codes appeared within a single video transcript a letter was added to each data entry to indicate a unique entry. For example, if multiple examples of effusive/willful text appeared in video 1 (VIN 1), the first example of this would be tagged as (1), the next (VIN 1a), the next (VIN 1b) and so on until the end of the transcript was reached and/or no further examples of coded effusive/willful speech appeared in the transcript.

*Inter-coding Reliability Check.* All coding was cross-checked for inter-coding reliability by Christian. Sorg, committee members and research chair were next solicited for general feedback for incorporation of their perspective into the findings and discussion.

*Table 1. List of Videos Included for Analysis*

VIN	Year Made	Producer or Publisher	Title	Video Type
1	2014	The Verge	Ecstatic states: treating PTSD with MDMA.	News feature for the web
2	2014	ReasonTV	MDMA for PTSD: How Ecstasy Is Helping People with Post-Traumatic Stress Disorder.	News feature for the web
3	2013	MAPS	Healing Trauma in Veterans with MDMA-Assisted Psychotherapy.	Promo/fundraiser for the web



4	2012	MAPS	Treating PTSD with MDMA-Assisted Psychotherapy: 3D Motion Graphic.	Promo/fundraiser for the web (animation)
5	2014	skysurfer	Local marine finds healing from PTSD using MDMA therapy.	News feature for television
6	2012	CNN	Patient talks about ecstasy treatment for PTSD.	News feature for television - interview
7	2014	AdamKokesh	MDMA Molly can cure PTSD (that's why it's illegal).	Podcast for web
8	2013	SBS2Australia	Treating PTSD With Ecstasy.	News feature for television
9	2014	London Real	MDMA and PTSD - Rick Doblin   London Real.	Podcast for web - interview
10	2013	TheLipTV	Treat PTSD with MDMA?!	News feature for the web - interview
11	2011	National Geographic	Drugs, Inc. - MDMA Therapy.	Documentary feature for television
12	2010	MAPS	MDMA Psychotherapy - Peter Oehen - Part 1 of 2.	Professional conference for the web
13	2013	BAAHKAST	Psychedelic Psychotherapie - MDMA FOR P.T.S.D. - 2013.	Professional conference for the web
14	2009	Evan Mantri	Agony or Ecstasy? The MDMA Dilemma [UK Channel 4].	News feature for television
15	1994	alexeykh	MDMA physiology.	Documentary feature for television
17	2012	MAPS	Ingrid Pacey: MDMA for PTSD.	Promo/fundraiser for the web
18	2012	MAPS	Andrew Feldmar: MDMA for PTSD.	Promo/fundraiser for the web
19	2014	reset.me	What an MDMA Experience Feels Like.	Podcast for web - interview
20	2010	CNN	Michael Mithoefer MDMA/PTSD Special Segment from CNN.	News feature for television - interview
21	2012	Kaylon Singhurst	Joe Rogan on MDMA (Ecstasy) for PTSD.	Podcast for web
22	2013	MAPS	MDMA-Assisted Psychotherapy for Veterans with PTSD - Rick Doblin, Ph.D.	Promo/fundraiser for the web
23	2012	CNN	Ecstasy being used as PTSD treatment.	News feature for television
24	2014	reset.me	Why MDMA Therapy Works.	Podcast for web - interview
28	2010	Sky News	Professor David Nutt on sky news educates newsreader on MDMA / drugs.	News feature for television - interview
29	2014	AsapSCIENCE	Your Brain On MDMA.	News feature for the web (animation)
31	2010	MAPS	Rick Doblin, Ph.D. Discusses MDMA at Arab/Israeli Joint Conference.	Professional conference for the web
34	2015	MDMA The Movie	MDMA The Movie - Teaser Trailer #1.	Promo/fundraiser for the web

35	2014	The Doctors.	See an MDMA-Assisted Therapy Session.	News feature for television - interview
36	2014	MAPS	MDMA-Assisted Psychotherapy Study Participant Tony Macie Speaks at Psymposium 2014.	Professional conference for the web
37	2014	London Real	MDMA Consciousness - Rick Doblin   London Real.	Podcast for web - interview
38	2013	NeuroSoup	MDMA vs Ecstasy.	Podcast for the web
39	2015	MDMA The Movie	MDMA The Movie - User Interview #1 - Sara Huntley	Promo/fundraiser for the web
41	2015	MDMA The Movie	Is MDMA a Psychedelic?	Promo/fundraiser for the web
42	2013	ABC News (Australia)	Should illegal drugs be used in PTSD treatment?	News feature for television

### **Protection of Human Subjects for Scientific Literature and Primary Source Data.**

Because the qualitative phases of our project are related to analysis of media resources and peer review journal articles, no human subjects were used.

### **Research Design: Survey**

**Survey Development.** The authors of this research have developed a survey designed for the purpose of measuring the attitudes of licensed clinical social workers in regards to the utilization of a psychedelic drug if it were approved for usage in the treatment people suffering from PTSD.

The survey was constructed in a collaborative and iterative process. The three authors developed questions and submitted them to their academic research chair for input. After revising, the survey was reviewed by two licensed social workers well-versed in treating the PTSD population. After receiving this input, another revision was made for the administration of a pilot survey to groups of students in the University of St. Thomas/St. Catherine's University School of Social Work. These final revisions were made in accordance to the responses of the

pilot survey recipients for the submission to the St. Catherine's University Institutional Review Board (IRB) for approval.

After the submission for the survey was approved by the IRB, the survey was entered into Qualtrics with an exclusionary question, "Have you had previous experience treating clients with PTSD?" If the yielded answer is 'no,' then the survey will stop and the participant will be sent a thank you message. If the yielded answer is 'yes,' the remainder of the survey questions will be asked.

**Sample.** We purchased a randomly selected list of 999 potential licensed clinical social workers respondents from a Midwest state's Board of Social Workers listserv. The entire list of potential respondents received an invitation email to participate in the study (see Appendix A). If the respondent chose to participate in answering the survey questions, they were instructed to follow the provided URL giving them access to Qualtrics, which provided them with information regarding the purpose of the survey, an explanation of the informed consent, an explanation of the destruction of the data, a survey completion incentive of entry into a \$50 gift card to a local retail establishment, and the survey questions (See Appendix B). All of the survey emails were sent out starting in January of 2015. In February of 2015, a follow up email was sent asking those who have not filled out the survey to please do so.

The inclusionary features of completing the survey included holding a clinical license in social work and having experience working with clients suffering from PTSD. Exclusionary features included not holding the clinical licensure and not having experience working with clients suffering from PTSD.

**Data Collection.** The data was collected using the program Qualtrics. The survey utilized contained fifteen questions devised to collect information regarding their social work licensure, number of years in practice, if they had professional experience working with clients suffering from PTSD, their professional clinical setting, training in specific PTSD interventions, their professional opinion and ranking of PTSD evidence-based interventions, portion of their client population diagnosed with substance abuse, their education in PTSD interventions, their attitude about the VA's responsibility in developing additional interventions, and their viewpoint about drug intervention in the treatment of PTSD.

**Data Analysis Plan.** All the incoming data from Qualtrics was downloaded onto a password protected computer. Only the authors of this research and their research chair had access to the raw data. It was analyzed using SPSS to find univariate descriptive and bivariate inferential statistical analyses. Frequency distributions and measures of central tendencies were computed for general licensed clinical social worker demographics and opinions about their perceptions about PTSD interventions.

**Protection of Human Subjects.** Each online survey contained an informed consent which will give them the option to opt out or continue on to the survey. Qualtrics compiled the survey responses allowing the respondents to keep their information anonymous.

### **Results/Findings**

Of the five categories initially pre-selected for data analysis, three were determined to be of significant value for their co-occurrence across all three aspects of the authors' mixed methods analysis. The three categories selected for further examination were: (1) mention of MDMA as a psychopharmacological intervention for psychological pathology; (2) mention of explicit

Positive or Negative MDMA use; and (3) mention of effusive and/or willful language. Hereafter, these categories included for analysis in the remainder of this paper will be referred to as “MDMA as Intervention,” “For & Against,” and “Effusive/Willful” respectively.

Codes related to the initial pre-selected categories of “mention of neurological damage (apoptosis, neurotransmitter degeneration, myelin degeneration, neurotoxicity, and permanent serotonin depletion)” and “mention of explicit “Schedule I” language” were present in some capacity and thus, coded within the primary source data set. They were not present in either the scientific data or the survey, however. Similarly, data was coded into the primary source specific category of “other.” As such, these findings are not included in this report.

Data related to the three pre-selected categories will be described, as with data analysis above, independently by each author. These findings will then be incorporated collaboratively into the discussion and results.

### **Findings: Scientific Lit**

Much has been reported about the sociological and physiological effects, dangers, benefits, and possible uses for MDMA. Yet among such reports, there are relatively few peer reviewed journal articles that report the findings of rigorous scientific control trials with human subjects. There are fewer still that report the findings of rigorous scientific control trials using MDMA as a part of a psychotherapeutic intervention. Much of this has to do with the self-perpetuating logical quandary created by the DEA, and their categorization of MDMA as a Schedule I drug. As stated by Smith (2007), “By categorizing MDMA as a Schedule I drug, the DEA has played a significant role in the suppression of research regarding the medical and psychiatric properties of MDMA. The suppression of such valuable information allows for

further control of the substance as its beneficial properties remain empirically unknown” (p. 304).

It was the intent of the current authors to address the available published scientific articles that have found a way to break this cycle by reporting their findings. Analysis focused on peer-reviewed journals that reported MDMA as a psychotherapeutic intervention with humans, within a controlled environment. There were 210 articles that met this inclusion criteria. From this pool, a random number generator was used to capture 20%, or 42 total articles to be analyzed.

Overall scientific literature data for the five core categories have been summarized in Table 2 below. The general scientific literature data breaks down as follows: regarding “Neurological Damage,” 30 out of the total 42 articles, or 71%, mention neurological damage in some respect and 12 (21%) did not. An exemplar of this category is Cuddy (2004); “It [Ecstasy] damages serotonin, dopamine, norepinephrine, and acetylcholine pathways, with degeneration of nerve terminals” (p. 6). All articles met the “MDMA as Intervention” criterion because it was required content for any article to gain admission to the initial data set.

As mentioned earlier, “For and Against” was further separated into five sub-sections: “For It,” 11 of the 42 articles or 26% included language that explicitly requests more use and study of MDMA as a part of a PTSD intervention; “Positive,” 16 of 42 or 38% included language that declares overall positive findings but fails to request further use and study of MDMA as a part of a PTSD intervention; “Neither,” 10 of 42 or 24% report both for and against language without a request for further action; “Negative,” none of the 42 articles selected included language that declared overall negative findings but failed to request further action; and

“Against It,” 5 of 42 or 12% contained language that explicitly states how the use and study of MDMA as a part of a PTSD intervention is inherently problematic, dangerous, and or ill advised.

Exemplars of the “For it” and “Positive” categories come from Mithoefer (2011, 2012, respectively): “These early results provide encouragement that MDMA-assisted psychotherapy may prove to be a valuable treatment for PTSD” and “Should further research validate our initial findings, we predict that MDMA-assisted psychotherapy will become an important treatment option for this very challenging clinical and public health problem” (p. 445, 9). For the “Neither” category, Jansen (1999) is a good example, as he simply reports his findings of three case studies involving habitual users of MDMA.

There were no articles that met the outlined criteria for the “Negative” category and five of the 46 articles (12%) represented the “Against” category. Four of these five were authored by Parrott (2013a, 2013b, 2014a, and 2014b). A prime example of an article meeting the “Against” qualification is Parrott (2007), “To summarize, MDMA has a great deal of superficial charm, but a detailed analysis of its pharmaco-dynamic profile shows that there are many core problems which would need to be answered before it can be concluded that MDMA might be clinically useful for psychiatric patients seeking therapy” (p. 191).

Out of the 46 articles, 13 or 31% used the “Schedule I” language and 29 of 42 articles, or 69%, did not mention “Schedule I,” that is, any discussion of MDMA’s legal status. The last category is “Effusive/Willful.” The “Effusive/Willful” category includes language that exaggerates findings, flagrantly ignores counter findings, or expresses a sociopolitical agenda regarding the use of MDMA. The “Effusive/Willful” category was separated into three sub-sections: “yes/for”, “yes/against”, and “none”.

An example of the “yes/for” subsection comes from Doblin (2014), “To estimate risks based on erroneous, outdated viewpoints that refer to recreational ecstasy and deny benefits based on hypothetical disaster scenarios demonstrate not only poor scientific methodology, but could also delay those patients who might benefit from such treatments the opportunity for enduring remission from a distressing, disabling, and life-threatening psychiatric disorder” (p. 107). An example for the “yes/against” subsection comes from a hypothetical case scenario offered by Parrott (2013a) meant to legitimize his claim that this drug intervention is problematic. He writes of this hypothetical client,

she becomes a habitual user [of MDMA]. However, with reducing efficacy and increasing mid-week blues, her chronic anxiety, depression, and low self-esteem steadily worsen. She is hospitalized after an unsuccessful suicide attempt. The family discovers her diary, which is given to the lawyer. In both cases, the therapist is sued, along with the pharmaceutical company that provided the MDMA (p. 301).

Findings are as follows: 10 of 42 articles (24%) were in the “yes/for” sub-category. 5 of 42 articles (12%) were in the “yes/against” sub-category, 27 of 42 articles (64%) were in the “none” category.

**Table 2. Scientific Literature Reviewed**

Primary Author (Year)	Neurological Damage	MDMA as PTSD Intervention	For It/ Against It	Schedule-I Language	Effusive/ Willful
Allgulander (07)	Yes	Yes	Neither	No	None
Anonymous (10)	No	Yes	For It	No	None
Blainey (15)	Yes	Yes	Positive	Yes	Yes/For
Carhart (10)	Yes	Yes	For It	Yes	Yes/For
Carhart (14)	No	Yes	Positive	Yes	None
Chabrol (13)	No	Yes	Positive	No	None
Clark (15)	No	Yes	Positive	No	None
Cuddy (04)	Yes	Yes	Against It	Yes	Yes/Against
Doblin (02)	Yes	Yes	Positive	No	None



Doblin (08)	Yes	Yes	Positive	No	None
Doblin (14)	Yes	Yes	Positive	No	Yes/For
Evidence (13)	Yes	Yes	Neither	No	None
Jansen (99)	Yes	Yes	Neither	No	None
Jerome (13)	Yes	Yes	For It	No	None
Johansen (09)	No	Yes	For It	No	None
Kirkpatrick (14)	No	Yes	Positive	No	None
Kupferschmidt (14)	Yes	Yes	Positive	Yes	Yes/For
Meyer (13)	Yes	Yes	Neither	Yes	None
Mithoefer (03)	Yes	Yes	Neither	No	Yes/For
Mithoefer (07)	No	Yes	Positive	No	None
Mithoefer (11)	Yes	Yes	Positive	Yes	Yes/For
Mithoefer (12)	Yes	Yes	Positive	Yes	Yes/For
Morten (05)	Yes	Yes	Neither	Yes	None
Oehen (13)	No	Yes	Positive	No	None
Parrott (07)	Yes	Yes	Neither	No	None
Parrott (13a)	Yes	Yes	Against It	No	Yes/Against
Parrott (13b)	Yes	Yes	Against It	No	Yes/Against
Parrott (14a)	Yes	Yes	Against It	Yes	Yes/Against
Parrott (14b)	Yes	Yes	Against It	No	Yes/Against
Piper (07)	Yes	Yes	Positive	No	None
Ramos (13)	Yes	Yes	For It	No	None
Sessa (07)	Yes	Yes	For It	No	Yes/For
Sessa (12)	Yes	Yes	For It	No	Yes/For
Sheerin (12)	Yes	Yes	For It	No	None
Smith (07)	No	Yes	For It	Yes	Yes/For
Stevens (13)	No	Yes	For It	No	None
Stewart (14)	No	Yes	Positive	No	None
Toledano (14)	No	Yes	Neither	No	None
Warburton (04)	Yes	Yes	Neither	Yes	None
Wardle (14)	Yes	Yes	Positive	No	None
Weber (14)	Yes	Yes	Neither	No	None
White (14)	Yes	Yes	For It	Yes	None

Of the five categories initially selected for analysis, three were determined to be of significant value for their co-occurrence across all three aspects of the authors' mixed methods analysis. The three categories selected for further examination were MDMA as Intervention (which was an inclusion criteria for all scientific articles collected), "For and Against," and "Effusive/Willful." While categories "Neurological Damage" and "Schedule I" were present in

some capacity within the scientific data set, they were not necessarily present in both the primary source data and/or the survey data.

Generally, the findings within the review of scientific literature show that MDMA-AP has potential as a psychotherapeutic intervention for PTSD. Findings also show that the street drug ecstasy, with its unknown composition and unregulated manufacturing, has potential long-term and short-term negative side effects. Findings also show there is still a great deal of polarizing rhetoric and intractable viewpoints. On the one hand, there are researchers who dismiss and condemn the use of MDMA-AP as a therapeutic intervention without sufficient data to support their position. On the other hand, there are researchers who heavily promote the use of MDMA-AP as a therapeutic intervention without sufficient data to support their position. Overall, the majority of scientific articles included in this study found insufficient data to support either of the aforementioned positions and simply report their findings.

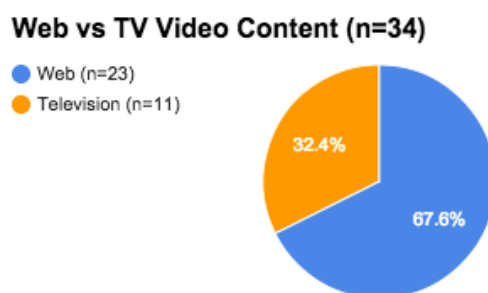
### **Findings: Primary Source Data**

As of April 4, 2015 the 34 videos included for analysis had been viewed 3,302,204 in total. The greatest number of views for a single video was 2,530,215 (AsapSCIENCE, 2015a) and the least number of views was 276 (skysurfer, 2015). Total viewing time for all 34 videos was 3 hours 5 minutes and 38 seconds (3:05:38). This includes data usable and unusable for transcription per inclusion/exclusion criteria. The longest video in duration was fourteen minutes and fifty-seven seconds long (14:57) (alexeykh, 2015) and the shortest was thirty-three seconds long (0:33) (Sfieros, 2015b). These two videos also constituted the oldest and the most recently created/published videos respectively from the data set.

Videos were found originating from seven different countries (United States, United Kingdom, Israel, Canada, Switzerland, Germany, and Australia) with the majority originating from the United States. Videos represented the years 1994, 2009, 2010-2015. All videos were presented in English. BAAHKAST (2015) included metadata in a language other than English, but the spoken text was all English across the data set.

**Intended Audience and Video Type.** The frequency of videos created for the web (n=23) versus television (n=11) audiences is clearly differentiated in Figure 1 across the data set (n=34). There were a little more than twice as many videos produced for the web. While videos such as those produced by TheLipTV (2015), The Verge (2015) and MDMA the Movie (2015) had high enough production standards to easily translate to the those of well to average produced television program, metadata within each video clearly identified these projects as intended for the web.

*Figure 1. Web vs. TV Video Content (n=34).*

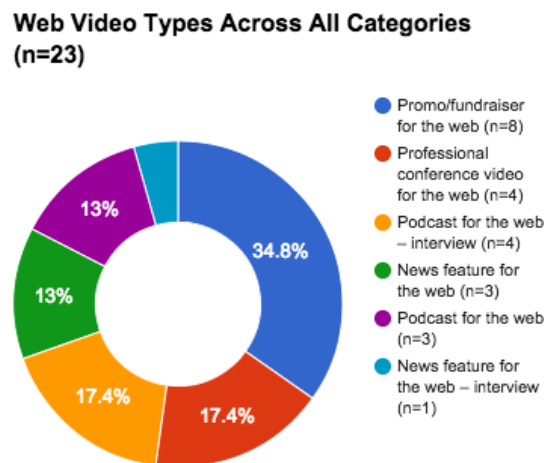


Of the videos (n=23) intended for web audiences, there was a distribution across the following categories: promo/fundraiser (n=8); professional conference (n=4); podcast-interview (n=4); news feature (n=3); podcast (n=3); news feature-interview (n=1). The promo/fundraiser videos all featured outright “asks” for the support of more research and/or funds to continue MDMA-AP research. They also contained primarily psycho-education based content outside of the requested

support. Despite a majority showing of the single category of promo/fundraiser videos, 15 of the 23 remaining videos in this category consist of data that do not feature any kind of promo/fundraising content.

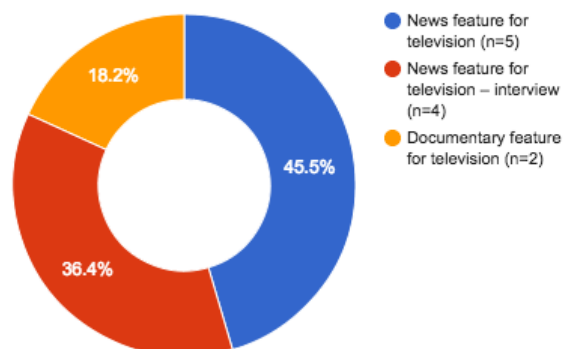
Videos intended for television audiences (n=11) were divided into three categories: news feature (n=5); news feature-interview (n=4); documentary (n=2). Within this media genre, the content was primarily news based with no promo/fundraiser component. Figures 2 and 3 illustrate these findings across the web and television respectively.

*Figure 2. Web Video Types Across All Categories*



*Figure 3. Television Video Types Across All Categories*

**Television Video Types Across All Categories  
(n=11)**



**Frequenters.** Several individuals and agencies made frequent appearances across all of the pre-selected coding categories within the data set. Frequent implies 3 or more appearances in any of the videos. They are listed in Table 3, sorted by frequency of appearances.

Far and away, the most commonly appearing figure/role was the newscaster or web host/pundit, featured in a total of 13 of the 34 videos across. This number excludes the CNN newscaster Sanjay Gupta, who is featured individually in 3 of his own segments on MDMA-AP. Rick Doblin, psychedelic researcher and founder of MAPS with a Ph.D. in public health, appears nine times. Rachel Hope, one of the subjects in Mithoefer’s MDMA-AP PTSD pilot study featured in this report also appears 9 times with case study perspectives. MAPS, as an entity, produced 8 of the 34 videos. Note that some of these same 8 videos feature frequenters included in this list are also included in separate categories (Hope, Doblin, Mithoefer, Narrator/Voice Over [VO]). This overlapping of producer and speaker is also true in MDMA the Movie, which appears three times in this list (Hope, Doblin, Shulgin). Narrator and/or voice over (VO) is featured in 5 of the videos. These voices were both male and female, and in one case, recognizable as was the case with actor Tom Baker best known for playing Dr. Who on the

famously long-running same named BBC produced series. Michael Mithoefer, psychiatrist and MDMA-AP researcher wrote the manual submitted to the FDA for MDMA-AP and leads clinical trials with his wife Annie Mithoefer, RN, appeared in 5 videos. Tony Macie, Afghanistan veteran and research subject in another military focused MDMA-AP MAPS sponsored clinical trial was featured in 4 videos. Finally, Ann Shulgin, psychedelic therapist and wife to Alexander “Sasha” Shulgin, the chemist who re-synthesized MDMA and thus re-introduced it to a new generation of therapists, appeared 3 times in 34 videos.

Outside the heavy rotation of newscasters and narrators peppering this table, MAPS and MAPS affiliated individuals/entities were heavily represented (Doblin, Hope, MAPS, Mithoefer, Macie, MDMA the Movie, Shulgin). This table does not encompass all the individuals who were featured in the transcribed data, of course, just the most commonly occurring ones.

*Table 3. List of Individuals/Agencies Who Appeared in 3+ of 34 Videos*

<b>Frequenter (3+ videos)</b>	<b># of Videos</b>
Newscaster or Web Host (not Gupta)	13
Doblin	9
Hope	9
MAPS	8
Narrator or VO	5
Mithoefer, M.	5
Macie	4
Gupta	3
MDMA The Movie	3
Shulgin, A.	3

**Overall frequencies of codes.** Frequency of the 3 pre-selected coding categories were included for analysis. Overall, two hundred and fifty-five total codes were returned across these

three categories. Their distribution is shown in Figure 4. The codes were predominantly content rich in their mentions of MDMA and its uses for mental health interventions (n=142).

Individuals stating a preference for or against the use of MDMA were the next most frequently appearing (n=76). And examples of effusive and/or willful text appeared the fewest number of times (n=37).

*Figure 4. Codes Across All Three Categories (n=255)*

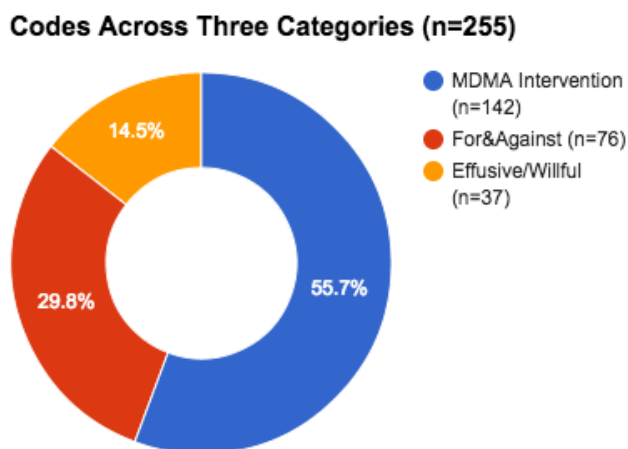
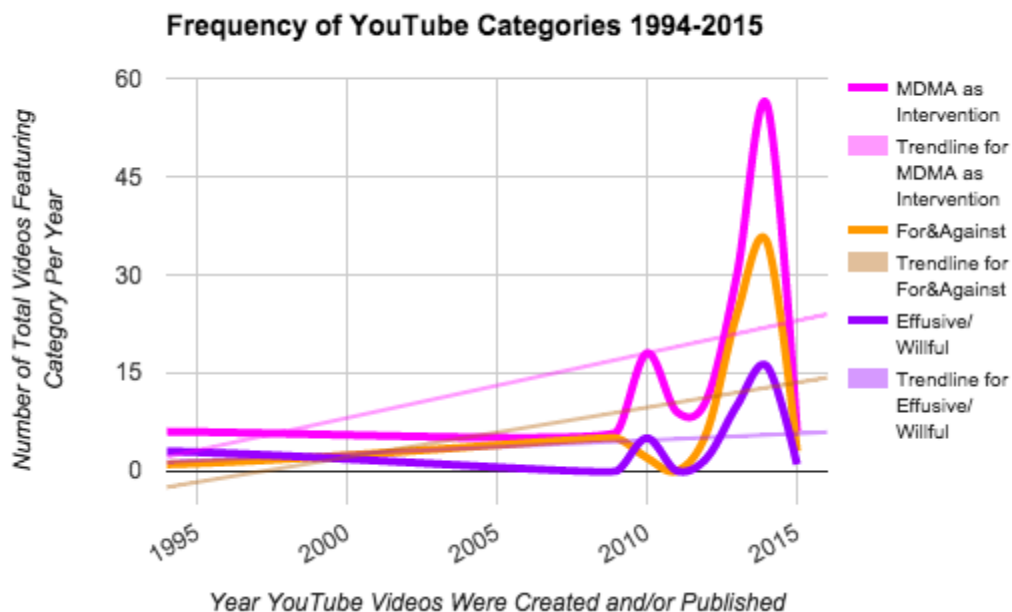


Figure 5 shows the overall distribution of codes per category over time. The videos within the data set spanned the years of 1994 and 2004-2015. As mentioned above and shown in Figure 5, “MDMA as Intervention” was the most frequently occurring code category, “For & Against” was the second most frequently occurring, and “Effusive/Willful” was the least frequently occurring category. This frequency relationship remained constant from 2011-2015 with a short period in 1994 and 2006-2011 where examples of “Effusive/Willful” codes occurred slightly more frequently than “For & Against” mentions of MDMA. There were significant total increases in the number of occurrences in all categories in the years 2010 and 2014. Trend lines

for each respective category clearly show an increase in the number of coded occurrences over this timeframe.

*Figure 5. Frequency of YouTube Categories 1994-2015.*

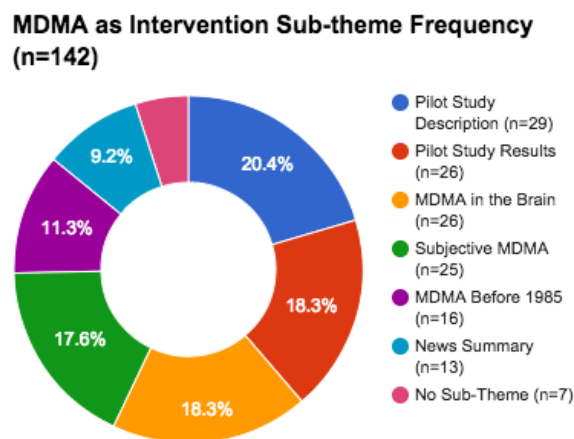


**Findings from MDMA as Intervention.** This category returned the greatest number of codes (142 out of 255 total codes). Overall, these codes shared unified information reflecting either accurate clinical descriptions of MDMA-AP or rational depictions of the benefits of non-clinical usage of MDMA for the treatment of PTSD and/or addressing general mental health well-being. As such, findings in this category include both mention of clinically pure MDMA as well as references to the street drug also known as ecstasy, molly or MDMA. Individuals referencing usage of the street drug and/or application of MDMA-AP with a therapist practicing outside the scope of a licensing board/entity or other formal practice, referred to in this paper as “underground therapists,” were clearly differentiated prior to and throughout analysis.



Six primary sub-themes emerged which included: statements describing of how the pilot study works (n=29); statements describing pilot study results (n=26); statements describing how MDMA works in the brain (n=26); statements describing the subjective experience of what MDMA feels like (n=25); statements describing therapeutic use of MDMA before criminalization in 1985 (n=16); and statements supplied by a newscaster/narrator summarizing MDMA information (n=13). Seven codes fell within this general category but did not fit into any of these sub-themes nor were distinctive enough to warrant their own sub-theme. The total sub-theme distribution of n=142 codes is available in Figure 6.

**Figure 6. MDMA as Intervention Sub-theme Frequency (n=142)**



**Sub-theme: statements describing how the pilot study works.** This category returned the greatest number of codes (n=29) in the category of “MDMA as an Intervention” and was predominated with statements from clinicians describing the results of the pilot study. Many of them were spoken by Mithoefer, who was featured in five (5) of 34 videos, or appeared courtesy of videos published and/or funded by MAPS. These descriptions were accurate to the science as

it was presented in the pilot study and were very consistent across the multiple videos. Here is an example with Mithoefer from VIN 2d:

Our first study that we completed and published was with mostly people with childhood sexual abuse or rape. They all had to have had therapy and medications before and not been helped adequately. And they'd had either two or three eight hour MDMA sessions in our office with both of us, Annie, my wife and I present – co therapists – is the model we use. So we just spend that whole time with them. So we don't give take home MDMA. They only get it under direct supervision (ReasonTV, 2015).

Newscasters, such as Gupta in VIN 20c, also presented data on pilot study:

Mithoefer's pilot study involved 21 patients. Those getting MDMA with therapy saw more improvement in their mental well-being, than patients who got a placebo. Just as important, there were no major side effects. Some illicit ecstasy users run into problems, like a rapid heart rate and depression (CNN, 2015).

*Sub-theme: statements describing pilot study results.* Similar to the previous category, many codes (n=26) related to comments related to the results of the pilot study. Again, Mithoefer appeared in several statements such as this from VIN 1h,

Well, in our first study, basically, in a nutshell, 25% of the people that got the therapy with placebo were basically free from PTSD at the end compared to 83% with MDMA. So, 83% no longer met criteria for PTSD (The Verge, 2015).

Newscasters and pundits, including libertarian, military veteran Adam Kokesh of the podcast *Adam vs. The Man* who alluded to an MDMA-AP study in Canada in VIN 7d: “Due to the success of the Mithoefer study similar trials are underway in Switzerland, England, Australia,

Israel and just last week, after 2.5 years of regulatory inspection and political red tape, 9 grams of MDMA arrived in Canada.” (Kokesh, 2015). Finally, Rachel Hope presented the perspective of a case study who described her own results after being in the pilot study in VIN 1i:

There’s this thing called the CAPs score that rates how sick you are. After this last treatment I came back for my two month follow up to do the CAPs to see what the results were. And [my therapist/clinician] comes back and he says ‘Rachel you don’t have PTSD anymore. You don’t have it’ (the Verge, 2015).

***Sub-theme: statements describing how MDMA works in the brain.*** Outside the subjective general descriptions captured in the subjective experience sub-theme category described below, (n=26) codes reflected the specific mention of how MDMA works in the mind/brain clinical and figuratively. VIN 29 contained a psychoeducation video from the group AsapSCIENCE out of Canada. The video featured an astounding 2,530,215 hits, making it, by far, the most watched video from within the sample. It provided this description via an uncredited narrator:

Despite the negative [side] effects, MDMA is being studied as a potential therapy for posttraumatic stress disorder and anxiety. PTSD patients generally have a decrease in brain communication between the amygdala and the hippocampus, but MRI analysis has shown that MDMA actually increases the communication in these regions (AsapSCIENCE, 2015a).

Doblin described the ways in which MDMA particularly addresses memory and its associations with the fear response in VIN 1c:

If this memory is linked to fear [...]under the influence of MDMA you can bring back the memory and the fear response is dampened down, then when you re-consolidate the memory it doesn't have that fear to it and you've been able to put it in context as then and not now" (The Verge, 2015).

Doblin's clinically informed perspective is echoed by the statement of Sara Huntly, a recreational MDMA user featured in the trailer for Sfieros's upcoming harm-reduction-themed documentary *MDMA: The Movie*. She provided a figurative perspective on how the drug worked on memories and perceptions in VIN 39a,

It felt as if my mind were a jigsaw puzzle and this jigsaw puzzle made of my associations and memories, broke apart. And I was left with all of these loose pieces and knew that the way that it had been fit together before was in such a way that I wasn't happy with where I was in my life[...] And I knew that the only person who had any power to do anything about it was me (Sfieros, 2015c).

***Sub-theme: statements describing the subjective experience of what MDMA feels like.***

There were many coded statements (n=25) describing the subjective experience of how it feels to be on the drug MDMA when undergoing treatment. Some of these were by clinicians who have used the drug themselves and contend that it is imperative for clinicians administering MDMA to also have experienced the effects of the drugs themselves prior to offering MDMA-AP to any clients (Mithoefer, 2013). More often, these descriptions were provided by individuals who were featured as case studies in news stories. Tony Macie, a military veteran, who participated in a phase 1 MDMA-AP MAPS sponsored trial for military veterans with PTSD shared in VIN 42c, "It gave me a really peace of mind feeling, so I kinda had a focus again. And I wasn't so

worried and concerned and living in the past” (Australian Broadcasting System, 2015). Bob Walker, a Vietnam vet, described his experiences with an underground MDMA therapist in VIN 1k thusly,

The first time I did [MDMA], it was just like this blanket of warmth. I just like..felt alive again. I felt in touch with my feelings and stuff and the music was incredible under the influence. And after I did the first session, by myself I felt noticeable...noticeable difference (The Verge, 2015).

***Sub-theme: statements describing therapeutic use of MDMA before criminalization in 1985.*** This sub-theme contained n=16 codes and was populated primarily by researchers who were familiar with the historical context of the study of MDMA. As Doblin, founder of MAPS and one of MDMA-AP’s staunchest advocates pointed out in VIN 1d, “Most people don’t understand that MDMA really began as a therapy drug in the middle seventies and early eighties” (The Verge, 2015). This point was reinforced by Mithoefer, the MAPS funded psychiatrist who was instrumental in the creation of the procedural manual on MDMA-AP which was submitted to the FDA prior to clinical trial approval as well as lead author on the MDMA pilot study from 2010. Mithoefer stated in VIN 2,

In the 70s Alexander ‘Sasha’ Shulgin made some [MDMA] and tried it, experimented with it, and um he and Dave Nichols published the first report of human experience with MDMA. Out of that grew the interest. You know he thought immediately this could probably be used as a therapeutic tool. There were quite a number of psychiatrists, psychologists, other therapists, using it, kind of as a catalyst for therapy in the late 70s, early 80s (ReasonTV, 2015).

Shulgin worked closely with his wife and MDMA-AP underground therapist, Ann Shulgin, to refine and then assist in distributing MDMA prior to criminalization in 1985 (Shroder, 2014). In VIN 13b, Ann Shulgin describes how therapists using MDMA for mental health interventions prior to 1985 intended to apply scientifically clinical rigor to their work:

The therapists who took up [the practice of psychedelic therapy] were using, mostly if not entirely MDMA, because most of them had not tried using these other [psychedelics].

Um, it was a new, unexplored drug so, of course, they were very quiet about it also even though it was not illegal. They all intended to publish eventually. They wanted a certain number of patient hours to give them something to write about (BAAHKAST, 2015).

***Sub-theme: statements supplied by a newscaster/narrator summarizing MDMA information.*** Twenty-one (21) of the 34 videos procured from YouTube were news related with an intended audience of either web or television consumers. From this grouping n=13 of n=255 total codes emerged relating specifically to newscasters summarizing information related to MDMA. These programs took the form of documentaries, news segments, interviews and/or pundits discussing MDMA and PTSD. Sixteen (16) of the 34 videos featured newscasters and/or narrators for these segments summarized data for their viewers. Dr. Sanjay Gupta, newscaster for the American broadcast network CNN was featured in 3 of these 16 videos. His summaries were similar in tone to this one from VIN 20a:

She was diagnosed with post-traumatic stress disorder, but nothing helped her, until she met Doctor Michael Mithoefer who was researching MDMA as a part of therapy.

MDMA, of course, is better known by its street name, ecstasy. [...]When taken, it causes

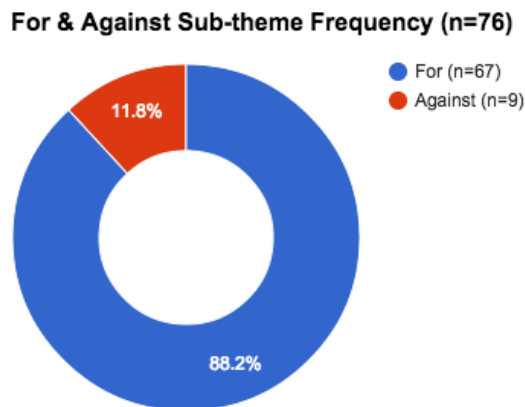
the brain to be flooded with neurotransmitters. Especially serotonin. And that's the key to our moods and emotions (CNN, 2015).

Other featured narrators held non-clinical associations in the field of MDMA or PTSD, such as Tom Baker. For a BBC documentary featured in VIN 15a he described how “the ecstasy molecule, because of its shape, forces neurons to spew out large quantities of one particular neurotransmitter, serotonin, or as it's sometimes called, 5HT” (alexeykh, 2015).

**Findings from For & Against.** This category contains coded statements with “mention of explicit positive or negative MDMA use” including a range of positive, negative and/or neutral mentions of usage of MDMA within the clinical setting only. Those commenting on clinical use, came from varying backgrounds featuring a range of knowledge on how the intervention works from no clinical knowledge of MDMA-AP to professional MDMA-AP therapists/experts.

Seventy-six (n=76) of the 255 coded statements fit this category's definition, including both positive (n=67) and negative (n=9) interpretations of MDMA-AP. This was the second most frequently occurring category within the three categories selected for analysis and it clearly skewed in favor of MDMA as an intervention technique (see Figure 7).

Figure 7. For & Against Sub-theme Frequency (n=76)



**Statements encouraging MDMA-AP clinical research.** Sixty-seven (67) of the 255 coded statements expressed positive to neutral mentions of MDMA-AP. Newscasters and pundits showed up prominently in this category. Brianna Connor, a newscaster for a local Kentucky television network stated in VIN 5c, “[MAPS] is hoping to now expand that study and get more in data in hopes the FDA will legalize this therapy by 2021.” While not personally stating encouragement for the use of MDMA-AP, she is restating and by proxy, propagating MAPS wish to complete their study by 2021 (skysurfer, 2015). Other newscasters interviewed researcher’s on-camera for their thoughts on the viability of MDMA-AP and interspersed comments from the researcher with paraphrased statements encouraging research. Jeannette Francis, newscaster from Australia’s television program *The Feed* did this in VIN 8a with psychedelic researcher Martin Williams in this coded exchange:

Williams: It’s a very interesting question, whether MDMA has been misrepresented or whether it’s been somewhat exaggerated.

Francis Voice Over: Martin wants MDMA trialed on Australian PTSD sufferers.



Williams: The key to the action of MDMA is its ability to open up feelings and emotions in the user.

Francis Voice Over: He also says the results of US study are very encouraging. (SBS2Australia, 2015).

In this exchange, Williams's statements are relatively neutral in content, yet they are bookended by Francis's summary of his endorsement of the study.

Newscasters, such as David Sutton out of the UK in VIN 14d, fashioned narration that incorporated summary information about MDMA-AP, but also included language that bordered on encouragement for the study:

Talk of placebos and randomized controlled trials may be a long way from the drug's current perception among the public but the scientists know that their chances of success in continuing their research depend on keeping the debate as boring as possible (Evan Mantri, 2015).

While it is feasible one of Sutton's "scientist" sources specifically mentioned the importance of keeping the debate "as boring as possible" to ensuring the study's success, no source is identified. As such, it is also possible that this is editorial in content.

Web pundits, such as Adam Kokesh, freely admitted how their personal use of MDMA informed their belief structures surrounding MDMA-AP. Kokesh, also a veteran, underscored the utility of the MDMA-AP in VIN 7c: "So you're shameless [when doing MDMA-AP]. That, I mean, that is huge, huuuuuge in PTSD because there's so much guilt associated, especially for veterans" (Kokesh, 2015).

Annie Mithoefer represents statements expressing the excitement building nationally around the study of MDMA-AP amongst clinicians in VIN 1f:

There is so much enthusiasm from medical students, residents, young therapists that are interested in this field. I mean just in the last four years, I think, the amount of enthusiasm and people wanting to do this and open to it – it's really changed (The Verge, 2015).

This personal enthusiasm is echoed by individuals who participated in MDMA-AP case studies. Rachel Hope, featured in 9 of the total videos was a uniformly positive advocate for the Mithoefer's work. She shared this rather nuanced enthusiasm for the program in VIN 19:

No, I don't think it was a warm fuzzy experience for me. Um, it was transformative. Um, but I will say it was something like getting acquainted with my very, very best self. I mean if you picture who you were on your best day when you, everything lined up and you really in your zone and you accomplish exactly what you—and you're fantastically focused, and you times that times 50 – that's your state of consciousness. You're at your best self. Then, because you set your intention, you get to turn that best self onto your most damaged self. Wow. The inner healer. That's profound (reset.me, 2015a).

Hope was accepted into the MDMA-AP pilot study addressing people with PTSD stemming from sexual trauma. Many of the successive MDMA-AP PTSD pilot studies sponsored by MAPS and led in part by the Mithoefers, related to the needs of military veterans suffering from PTSD. Doblin describes the need for military specific interventions for PTSD, and suggested how MDMA-AP is a viable option in VIN 22:

Veterans who are coming back from the war, many of them feel that the psychological wounds that they are coming home with have not been successfully treated by the

currently available uh, treatments that are offered to them through the VA. That may work for many soldiers, but there are some people for whom the currently available treatments do not work. And I think there's a lot of discontent by veterans who are searching for something else. And MDMA assisted psychotherapy is something that can be helpful when other treatments have failed. And what we're trying to do is work with the Veterans Administration, with the Department of Defense, so they can integrate this as one of the tools among many that they work with vets. And I think if they were to do so, they would have a higher level of um, satisfaction and cures among the vets that they are working with (MAPS, 2015c).

MAPS continues to actively pursue the Veterans Administration for financial backing in conjunction with the third phase of their MDMA-AP clinical trial. Sanjay Gupta, newscaster for CNN discussed the feasibility of this relationship with Loree Sutton, retired Army psychiatrist in this exchange from VIN 23:

Gupta voice over: Now, of course, nineteen people is still just a tiny study. But it is getting attention. Loree Sutton was the Army's top psychiatrist until she retired in 2010.

Sutton: I've certainly reviewed it, and the results look promising. It's like with the rest of science. We'll apply the rigor. We'll follow where the data leads. We'll leave our politics at the door (CNN, 2015a).

Statements encouraging the general scientific merit of MAPS clinical MDMA-AP trials also appeared in this category. Similar to Doblin's statement above in this sub-theme, they stressed the need for pursuit of this intervention despite intervening policy such as this comment from Michael Mithoefer in VIN 2e:

If this is in fact something that can help a lot of people and we're at this stage of research which is, you know, at least twenty years behind where it would be if people, if it had been guided only by science and not by politics and fears and other forces, that's really actually a travesty (ReasonTV, 2015).

*Statements discouraging MDMA-AP clinical research.* While technically representing only a sub-theme within the pool of primary source findings, negative and/or discouraging comments towards MDMA-AP comprised only 9 of the 255 total codes collected. These 9 codes stated either an outright disdain for MDMA-AP or a deep reluctance to introduce MDMA-AP into a therapeutic environment.

Lisette Padilla, web host for web program "TheLipTV," interviewed "people on the street" about their feelings on the efficacy of MDMA-AP. This exchange took place between her and an unnamed male wearing a baseball cap in VIN 10h:

Padilla: What did ecstasy do for you?

Male in baseball cap: Uh...it just makes you feel really, really good and I know that that's not normal, you know what I mean? It had me in a bath tub with my girl for seven hours, you know what I mean?

Padilla: [laughs]

Male in baseball cap: And it seemed like [snaps fingers], it just was like that quick so that's what I'm saying. When, when drugs alter your mind like that and have you doing things that you normally wouldn't do, it's not good (TheLipTV, 2015).

Newscasters for television networks also summarized resistance to the study, such as this unnamed program host from ABC Australia doing a hand off to Conor Duffy's segment in VIN

42, “And there’s a big push on for trials to begin in Australia. But as Conor Duffy reports, unsurprisingly, there’s resistance as well” (Australian Broadcasting System, 2015).

Clinical reluctance towards MDMA-AP was shared primarily by comments from Ron Acierno, psychologist for the Veterans Administration, in VIN 1d:

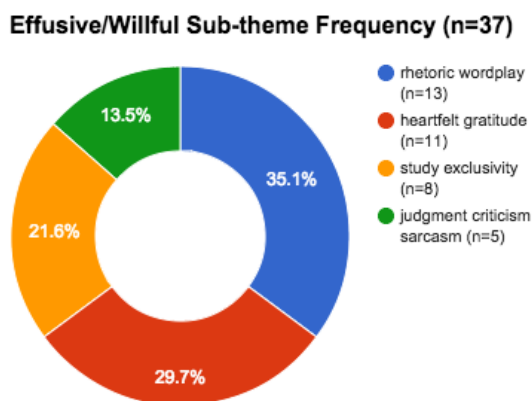
If somebody were to come along with a treatment that has a lower side effect profile, lower attrition, same effect size, easier to do, well then we’ll do that. What I fear though, what I don’t like to see and what basically just pisses me off is when people forego the effective evidence based treatments for the peripheral type treatments that don’t have any real evidence. They don’t have a great outcome and then they give up on any treatment. And that bothers me a lot and that does happen sometimes (The Verge, 2015).

**Findings from Effusive/Willful.** Statements in this category contained effusive and/or willful examples of language regarding the use of MDMA-AP and/or MDMA. They were made by clinicians, newscasters, people who were included in MDMA-AP case studies and even random “people on the street.” Their comments ranged from positive to negative in content. Due to the emotional nature/tone of these texts, all included expressions of strong feelings. Findings in this category include both mention of clinically pure MDMA as well as references to the street drug also known as ecstasy, molly or MDMA.

This was the least frequently occurring category of the three categories included for analysis with n=37 occurrences of the 255 codes total. Four sub-themes emerged: (1) statements using rhetoric and/or wordplay for dramatic effect (n=13); (2) statements with heartfelt gratitude and/or extreme/declarative endorsement for MDMA-AP (n=11); (3) statements with sadness and confusion surrounding exclusivity of MDMA-AP and MDMA-AP in general (n=8); and (4)

statements with sarcasm and/or harsh judgement towards MDMA and/or MDMA-AP (n=5). This distribution is visually represented in Figure 8.

Figure 8. Effusive/Willful Sub-theme Frequency (n=37)



*Statements using rhetoric and/or wordplay for dramatic effect.* Examples of coded text using rhetoric and/or wordplay occurred n=13 times within the data set. As in other previously mentioned categories of coded data, newscasters and narrators were responsible for writing and/or delivering much of the content in news driven segments. Sometimes these were presented as straight-forward interviews without editorial comment. Other times, the scripted segments appeared to almost bait the interview subject, such as this exchange between David Nutt, professor and psychedelic researcher and a newscaster from the UK program Sky News in VIN 28:

Sky News: The difficulty there is, of course, is you've compared the dangers of ecstasy to horse riding.

Nutt: Yes.

Sky News: So you see, uh, what you say falls down a little uh, when you talk about hard scientific evidence with a, if may say, a crass comment like that.

Nutt: Well, obviously you haven't read the paper have you? But, it's not a crass comment. That was a carefully considered analysis. Do you know how many people die every year from horse riding accidents in this country? Well, it's under 30. How many die of ecstasy? Well it's about ten (Sky News, 2015).

Other times, the rhetoric is much more pronounced, such as this narration supplied by Tom Baker in VIN 15b for a BBC documentary,

However good ecstasy makes you feel, it is dangerous. It has killed. But how necessary is it? Can people listen to pounding repetitive music without any drugs and still be ecstatic? If there's more to the experience of the drug, what is it? (alexkyh, 2015).

*Statements with heartfelt gratitude and/or extreme/declarative endorsement for MDMA-AP.* This theme was populated by n=11 codes primarily from people who were included as subjects for MDMA-AP case studies, individuals who used MDMA with underground therapists, and clinicians. Bob Walker worked with an underground therapist to treat his PTSD. He stated in VIN 1a,

It's funny, you know I tell people about this and veterans and stuff like that and it just uh, it goes right over their head. They don't understand it, but I sure did. I picked up on it right away. And you know when it starts...when the word gets out, things will change.

Walker's deep belief in the ability of the drug is perhaps better understood given the context of his assertion that, "I did in three sessions [with MDMA] what I couldn't do in 34 years" in VIN 1 (The Verge, 2015). His gratitude for the intervention was echoed by Nicholas Blackston, subject for the MDMA-AP military pilot study. He stated in VIN 5, "Honestly, looking back on it, [MDMA-AP] was the best decision in my life" (skysurfer, 2015).

Ann Shulgin proposed that MDMA was an unparalleled agent for change for mental health. She shared in VIN 13b:

This knowledge, this certainty, that you are, as a whole, you're dark and you're light, and good and bad, that you are of infinite value, is the greatest gift that anyone can be given.

And so, in this way, the MDMA is one of the greatest things that has ever happened to the world of psychotherapy, of healing of the psyche, the attempting to heal the soul

(MAPS [Catherine C.], 2015).

***Statements with sadness and confusion surrounding exclusivity of MDMA-AP and MDMA-AP in general.*** Many individuals affiliated with the MDMA-AP clinical studies expressed remorse and/or sadness about the exclusivity of the trial offerings. Coded inferences occurred n=8 times across the data set. Annie Mithoefer, MDMA researcher and author of the MDMA-AP pilot study summarized this best in VIN 3a:

Almost all of the study subjects in both studies have said, especially I think the veterans, have said that they're doing the study for themselves but they're also doing it for other veterans. I think we all owe them...to do something for them" (ReasonTV, 2015).

The exclusivity of access to MDMA-AP, combined with this feeling of owing encouraged Tony Macie, military vet and MDMA-AP pilot subject, to become an advocate for the therapy in VIN 36:

So now, that I've got this, I feel motivated to talk. I feel like I need to spread this message because I can take serious every day – it's 23 people [in the military committing suicide] a day! That doesn't just tread lightly with me. I feel that (MAPS, 2015d).



Rachel Hope described her frustration with the scientific community, in general, for not more readily supporting a therapy that made it possible for her to engage in everyday life again. She shared this with web host Amber Lyon for the alternative health web program, [reset.me](http://reset.me) in VIN 24:

Lyon: Ok, so why is it? Why do you think that in six to eight hours you were able to cure 80% of your PTSD symptoms on MDMA when you'd spent a lifetime using other therapies? What was it about these six to eight hours on MDMA, for someone who has never tried psychedelic medicines before that really was able to help you so dramatically?

Hope: I think every, I, that's, the, that's the greatest question you could possibly ask. I think the whole scientific community should be clamoring to figure that out. We, I mean, I want to know, personally. What happened!? Like, no, I mean, it's not like I'm making this up. There's probably entire file drawers of medical like, uh, brilliant doctors, probably like 20 doctors, files on me. For years! And then suddenly it's over?!

Lyon: In six to eight hours.

Hope: Right! So...you know this is, this is mind boggling. The thing that I'm told and I do, and I did experience this, was that the medicine is a very specialized medicine that enhances awareness with reducing anxiety ([reset.me](http://reset.me), 2015b).

Ann Shulgin, who along with her partner Alexander "Sasha" Shulgin, connects to Hope's frustration with "the whole scientific community" by addressing the action of MDMA being changed to a Schedule I drug by the DEA in VIN 13:

In July of 1985, there was a terrible day when everybody I know got on the telephone and called everyone else they knew and told them what they had heard, what the DEA was

trying to do. Uh, many of them, including myself, cried. It was the most dreadful thing. It was as if in the days where there were no antibiotics you had this one magical thing called penicillin and it was like hearing that the government was coming down and going to make penicillin illegal. This is the way we felt about it (BAAHKAST, 2015).

***Statements with sarcasm and/or harsh judgement towards MDMA and/or MDMA-AP.***

Codes reflecting dark humor towards policies and/or negative judgement toward MDMA-AP occurred only n=5 times over the data set. Adam Kokesh, web pundit and military veteran, incorporated editorial comments throughout VIN 7. He also employed some of the strongest examples of sarcasm such as this one from VIN 7e:

Yeah, like that MDMA is gonna jump out and attack your kids! Whoooo! Gotta, we gotta, we gotta make sure everybody is safe. As Feldmar described it to the CBC it's as if the whole of Vancouver was waiting to see this drug arrive and would rob the pharmacy to get it. It's like Fort Knox has been waiting for this drug. And it is pretty good, But not that good (Kokesh, 2015).

Lisette Padilla, web host, encountered a "person on the street" in VIN 10 who delivered multiple damning indictments of MDMA: "I think anybody who takes ecstasy or any kind of drug -- it's not good at all. Period." Her interview subject continued in VIN 10a:

I think ecstasy is just another thing. It's crack cocaine. Addiction. I think it's like heroin addiction. I have no pity for anybody who sticks a needle in their arm and I'll have no pity for anybody that use ecstasy or speed or crank or anything (TheLipTV, 2015).

**Emergence of Themes Across All Coded Text Outside Categorization.** Themes emerged across multiple videos outside of the range of pre-selected categories. These findings

were not planned but appeared with enough frequency to merit mention. These themes included the ways in which policy interacts with research, the manner in which medical grade MDMA were conflated with MDMA/ecstasy the street drug, and the general demographics of individuals featured throughout the data set.

**Policy interacting with research.** Twenty-five (25) of 255 codes initially coded under the pre-selected category of statements related to Schedule I policies contained language discussing the ways in which policy shapes and affects a scientist's ability to carry out clinical research. The majority of these codes were spoken by clinicians and/or newscasters discussing the logistics of navigating a clinical study that featured a highly controlled substance, such as this exchange between newscaster David Fuller and researcher, Ben Sessa in VIN 14a:

Fuller VO: There are two other trials running at the moment in Switzerland and Israel.

Ben [Sessa] and others would like the UK to be next. But the government's dismissal of a report by their own drugs advisory council to downgrade ecstasy, shows that they face a downhill struggle to get the trial licensed here.

Dr. Ben Sessa: It's very difficult to do these projects here [in the UK] because of the government's objections and the classifications of the drugs. Um, we need to look at these drugs with objective medical eyes. Um, and we need to take into account that they, they, they need to be used with caution. But we mustn't let government policy dictate medical research. That is unethical (Evan Mantri, 2015).

David Nutt reinforced Sessa's point during a heated televised interview with Sky News in this code from VIN 28:

I'm quite happy for government to take a moral stance on drugs, as long as they don't pretend they're taking a scientific harm reduction stance! By all means have a moral stance. In a sense they've taken that with, with, with keeping all contraband out of the act. They've said they don't care. That's just—do not ask scientists to produce evidence to justify a moral stance so they can then say, this is science! It must be class B cuz it's lethal when it isn't (Sky News, 2015).

Doblin comments on his supposition on how a drug policy interaction in the US was inevitable in VIN 1: “From [its therapeutic origins in the 70s and 80s] some people realized that they could make a lot of money in recreational settings and more public settings. And so it was just inevitable that there would be a crackdown.” (The Verge, 2015). Interestingly, Doblin refers to himself as a man with a doctorate in public health, who wrote his dissertation “the regulation of the medical use of psychedelic drugs and marijuana” from the Kennedy School of Government at Harvard University. He expands on these credentials in VIN 31:

When I think of myself, I'm not a psychiatrist or a therapist dealing with individual patients but I'm a, uh, public policy person dealing with sick public policies -- trying to find a way for society to come together and bring about a more rational view on public policy (MAPS [Gerardo Kleinburg], 2015).

Policy related codes appeared within the featured categories as well, but were coded under another category that qualitatively appeared more prevalent, such as this exchange between Gupta and retired military psychiatrist Sutton from VIN 23, coded within For & Against:

Gupta VO: Now, of course, 19 people is still just a tiny study. But it is getting attention.

Loree Sutton was the army's top psychiatrist until she retired in 2010.

Sutton: I've certainly reviewed [MDMA-AP], and the results look promising. It's like with the rest of science. We'll apply the rigor. We'll follow where the data leads. We'll leave our politics at the door (CNN, 2015a).

MDMA conflation with MDMA street drug. VIN 15 consists of excerpts from a 1994 BBC documentary on rave culture. It features narration which is fairly sensationalist throughout and rarely explicitly differentiates between the street drug known as ecstasy and the medical grade MDMA. There is a substantial segment in VIN 15b with research scientist Bill Deakins where he describes the neurological effects of MDMA, referring to the drug as MDMA within the psychical setting of his laboratory:

If you imagine my arm as being a nerve terminal, when this becomes electrically active, it releases 5HT. And, um, the way it then does is to suck all the 5HT then up again. So, it sort of dunks it into this cleft, this gap between the terminal and the next cell in the chain, and then sucks it all back up again by a kind of vacuum cleaner action. What MDMA seems to do is reverse that sucking up process and to squirt out 5HT from the nerve terminal. It's like connecting the wrong end of the Hoovering pipe to the wrong end of the Hoovering machine. It's squirting out rather than sucking up 5HT (alexeykh, 2015).

When the narration returns, it addresses the possible reasoning for the release of these neurotransmitters in VIN 15d in voice over:

Scientists have recently begun to speculate why ecstasy does this. As the drug forces the release of serotonin molecules, they go to several different possible landing sites or

receptors. Each of these effects behavior differently. Stimulating one of them, the 1B receptor, seems to encourage repetitive behavior. Although ecstasy stimulates all the receptors, the effect of this one seems to dominate. In this way, ecstasy may have found the part of the brain that makes you want to dance (alexeykh, 2015).

The video continues in this vein, with the scientists referring to the drug primarily as MDMA and the narration and most of the non-clinicians interviewed referring to the drug as ecstasy. The differentiation between the two is not explicitly stated, though it is heavily implied through repetition.

More contemporary examples of this kind of conflation occur in videos featuring newscasters who “hand off” their segment to while introducing the next newscaster. VIN 14 provides a good example:

Could some illegal psychoactive drugs help people suffering from severe trauma? It sounds almost heretical to suggest it, yet 40 years ago hallucinogenic drugs like acid were prescribed by doctors. Now a trial in the US appears to show the partially successful use of ecstasy and MDMA to treat people with post-traumatic stress. Britain psychiatrists at a conference today will have today if there’s a future in it. David Fuller’s report contains some strobe lighting (Evan Mantri, 2015).

The newscaster refers to the substances as “ecstasy and MDMA” rather than simply, “MDMA” or, as Sanjay Gupta clarified in VIN 20a “MDMA, of course, is better known by its street name, ecstasy” (CNN, 2015) but even this clarification ties the two drugs together potentially in the viewer’s mind.

This issue of conflation was so prominent that the entirety of VIN 38, a video program on harm reduction called *NeuroSoup*, was dedicated to differentiating these two substances:

I started to examine the results of the MDMA Facebook survey that many of you went online to fill out – I’d like to thank you all for doing that – but I noticed that whenever I started to examine these results I noticed that 50% of the people that filled out the survey thought that basically MDMA, is the same thing, a synonym, for ecstasy. And so I figured I would do a video just to clarify some of that (Cole, 2015).

To the point of omissions found across the data set, with the exception of four (4) newscasters (Gupta, Connor, and two unnamed newscasters who handed off their segment) and six (6) random ”people on the street” interviewed by Lisette Padilla for “TheLipTV” there was almost no representation of people of color affiliated with MDMA-AP. By all outward appearances, MDMA-AP appears to be a challenge addressed by well-to-do mostly Caucasian individuals. While there is nothing in the transcribed text that implied racial or class bias, visually, the data set was striking due to the dearth of representation of non-white faces.

### **Findings: Survey**

Out of the 999 surveys sent out, 205 individuals logged into the survey and 201 consented to taking the survey. Of this number, 111 respondents completed the survey 100% and 133 respondents completed the survey 90%. Refer to Figure 9 for a complete list of the survey completion statistics.

*Figure 9. Survey Completion Statistics*

**Survey Statistics**

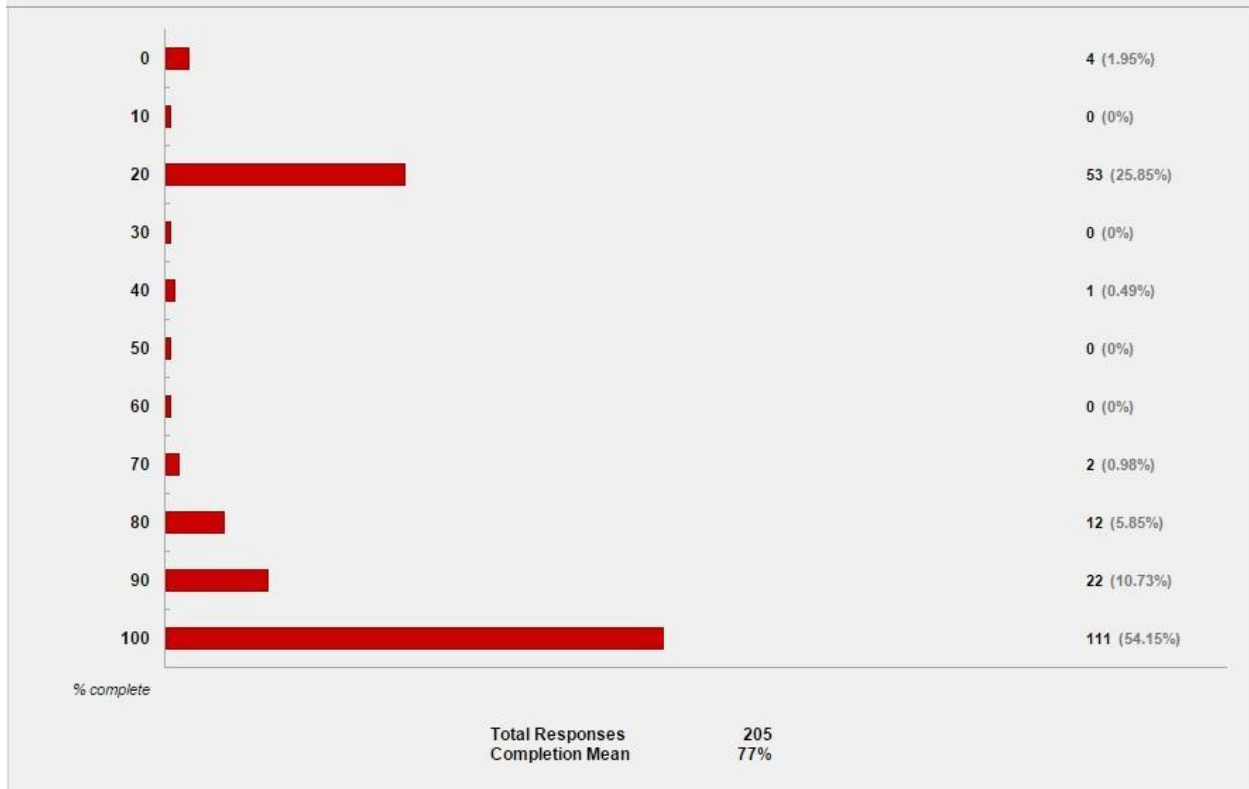


Table 4 reports the professional characteristics of the clinician sample. Out of the 205 clinicians who logged in only 200 consented to taking the survey. The largest category of years of experience in our sample was in the 6-10 year range and second was 11-15 years of experience. Of the 200, only 144 clinicians reported their current population of suffering from PTSD with the “1-25%” category holding the largest value at 56% of the clinicians. This table also reports the largest amount of clinicians working in a clinic setting. We also want to highlight the VA/Vet Center clinician population (5%) due to the significance of the Veteran’s Administration in conjunction with this research.

<i>Table 4. Professional Characteristics of Sample</i>		
<b>Years in social work</b>	<b>%</b>	<b>N</b>



1-5	16%	32
6-10	22%	44
11-15	22%	43
16-20	16%	31
21-25	10%	19
26-30	N/A	N/A
30+	16%	31
Total		200
<b>% of Population Dx. With PTSD</b>		
1-25	56%	81
26-50	29%	42
51-75	10%	15
76-100	4%	6
Total		144
<b>Primary practice setting</b>		
Clinic	32%	48
Hospital	9%	13
Private Organization	16%	23
Residential	5%	7
Non-Profit Organization	24%	36
School	3%	5
VA/Vet Center	5%	7
Government Agency	3%	5
In Client Home	2%	3
Other	1%	1
Total		148

### Survey: Descriptive Statistics

The first descriptive statistic measured the central tendencies of the respondents' attitudes toward the efficacy of the current treatment methods. The research question addressed was: How do licensed clinical social workers rate the current PTSD interventions? This utilized the interval variable, "Current effectiveness," that measured respondents' attitudes toward the efficacy of the current PTSD treatment interventions, as displayed in Table 5. This variable is operationalized with the item: "How effective are the current clinical treatment methods for PTSD? Rate on a scale of 1-5 (1=effective, 5=non-effective)." The possible response options ranged from 1 to 5.

Table 5 shows that 146 respondents completed this question and 50.7% (104) of these respondents believe the current clinical treatment methods for PTSD are very effective and effective. The respondents who believe the current clinical treatment methods for PTSD as ineffective and very ineffective equal 5.4% (11). While 15.1% (31) remain neutral.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	1	.5	.7	.7
	Ineffective	10	4.9	6.8	7.5
	Neither Effective nor Ineffective	31	15.1	21.2	28.8
	Effective	96	46.8	65.8	94.5
	Very Effective	8	3.9	5.5	100.0
	Total	146	71.2	100.0	
Missing	System	59	28.8		
Total		205	100.0		

The next measure used assessed the frequency of the respondents' attitudes toward the efficacy of specific PTSD treatment interventions. The research question addressed was: How do licensed clinical social workers rank the psychedelic drug therapy compared to other PTSD treatment interventions?

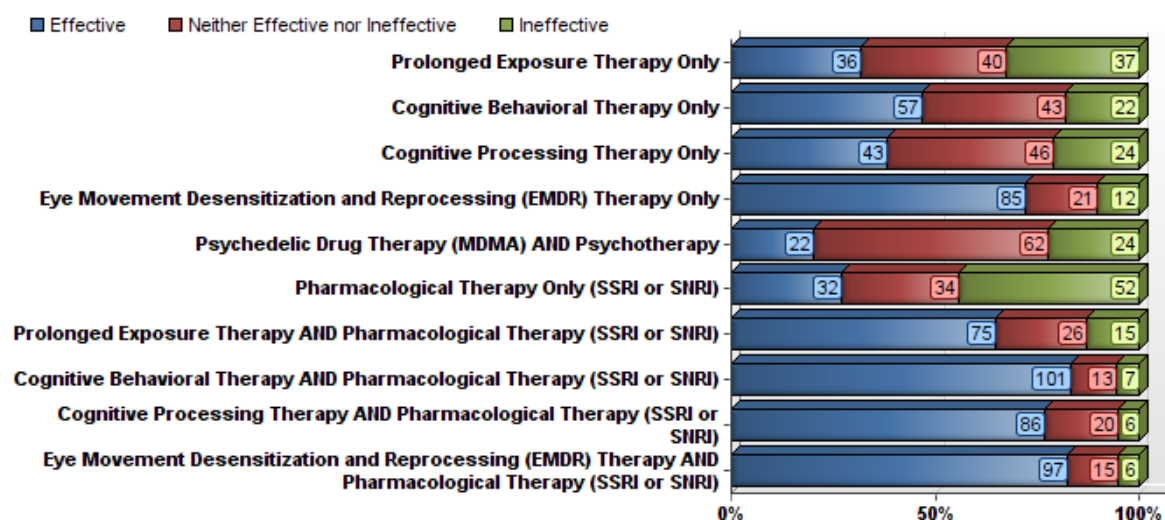
The interval variable, Intervention Rank, measures respondents' attitudes toward the efficacy of PTSD treatment interventions. This variable was operationalized with the item: "Please rank the following PTSD interventions according to your belief about their efficacy.

Figure 10 shows the efficacy ranking by therapy option. The respondents most commonly ranked Cognitive Behavioral Therapy with the use of pharmacology as an effective therapy (101

instances) while ranking the Psychedelic Drug Therapy (MDMA-AP) as effective in only 22 instances.

It is also worth mentioning that while pharmacology only was most commonly ranked as ineffective (52 instances), Prolonged Exposure Therapy used on its own was ranked second in ineffectiveness at 37 respondent instances.

Figure 10. Clinician’s belief about the efficacy of PTSD interventions



We then measured the frequency of the respondents’ attitudes pertaining to further research of MDMA. The research question addressed was: Do licensed clinical social workers believe MDMA should be further researched as a PTSD intervention? This variable was operationalized with the item: “Do you think MDMA sounds like an intervention that should be researched further?” The possible response options were: “yes” or “no”. Table 6 displays the majority of licensed social workers 71% (94) answered this question as “yes” and 29% (39) as “no.”

Table 6. Licensed Clinical Social Workers Response to the Further Research of MDMA as a PTSD Intervention.

Answer	Response	%
Yes	94	71%
No	39	29%
Total	133	100%

### Survey: Inferential Statistics

We wanted to analyze the relationship between the social workers chemical dependency treatment experience and their opinion about the use of psychedelic drug therapy. The research question for the study was: What is the relationship between the respondents' experience with working with clients with a chemical dependency diagnosis and their attitude toward the efficacy of a psychedelic drug therapy? The research hypothesis for the study was: There is a positive relationship between the respondents' experience with working with clients diagnosed with chemical dependency and a negative attitude toward the efficacy of a psychedelic drug therapy.

The first interval variable in this study measured the amount of the respondent's client population being diagnosed with chemical dependency. This variable was operationalized with the question: "Approximately what percentage of your client population has been diagnosed with chemical dependency? Select one." The possible response options are: "1-25%"; "26-50%"; "51-75%", and "76-100%." The second, interval variable in this study measures the respondents' ranking of PTSD treatment efficacy rates. This variable is operationalized with the question: "Please rank the following PTSD interventions according to your belief about their efficacy. Treatment interventions were ranked as "Effective"; "Neither effective or not effective"; or "Not effective." We used the treatment intervention "Psychedelic Drug Therapy (MDMA) AND Pharmacological Therapy.

Table 7 and 7a show the inferential statistics of the relationship listed above. Since the p-value (.646) is greater than .05, the results of this data are not statistically significant. As a result, we failed to reject the null hypothesis that there is no relationship between the percentage of the respondent's' client population diagnosed with chemical dependency and their attitude toward the efficacy of the psychedelic drug therapy.

		Please rank the following PTSD interventions according to your belief about their efficacy - MDMA Assisted Psychotherapy			Total
		Effective	Neither Effective or Ineffective	Ineffective	
Approximately what percentage of your client population has been diagnosed with chemical dependency	1-25%	12	33	9	54
	26-50%	4	13	7	24
	51-75%	2	10	5	17
	76-100%	4	5	3	12
Total		22	61	24	107

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.230 <sup>a</sup>	6	.646
Likelihood Ratio	4.257	6	.642
Linear-by-Linear Association	.354	1	.552
N of Valid Cases	107		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is 2.47.

We then analyzed the relationship between the number of years of experience the social worker has and their opinion about the use of psychedelic drug therapy. The research question for the study was: What is the relationship between the number of years of social work experience of the respondents' and their attitude toward the efficacy of a psychedelic drug therapy? The research hypothesis for the study was: There is a positive relationship between the number of years of social work experience of the respondents' and their attitude toward the efficacy of a psychedelic drug therapy.

The first interval variable in this study measures the amount of the respondents' years of clinical social work experience. This variable was operationalized with the question: "How many years have you been a mental health professional or provider?." The possible response options are: "1-5 years"; "6-10 years"; "11-15 years", "16-20 years"; "21-25 years"; "26-30 years"; and "31-35 years." The second, interval variable in this study measures the respondents' ranking of PTSD treatment efficacy rates. This variable is operationalized with the question: "Please rank the following PTSD interventions according to your belief about their efficacy. Psychedelic Drug Therapy (MDMA) AND Psychotherapy" The possible responses are: "Effective"; "Neither Effective or Ineffective"; or "Ineffective."

Tables 8 and 8a show the inferential statistics of the relationship listed above. Since the p-value (.041) is less than .05, the results of this data are statistically significant. As a result, we reject the null hypothesis that there is no relationship between the number of years of social work experience of the respondents' and their attitude toward the efficacy of a psychedelic drug therapy.

Table 8 shows the largest number of clinicians (62) are neutral in their ranking of MDMA-AP as an efficacious PTSD intervention and this most profoundly correlates with the clinicians with 6-15 years of mental health experience. It is also of note that no one in the 11-15 years of experience range ranked MDMA-AP as ineffective.

<b>Table 8. Correlation Between the Amount of Years Clinicians Have Practiced as Mental Health Professional or Provider and Their Belief About the Efficacy of MDMA-AP.</b>					
		Please rank the following PTSD interventions according to your belief about their efficacy. Psychedelic Drug Therapy (MDMA) AND Psychotherapy			Total
		Effective	Neither Effective or Ineffective	Ineffective	
How many years have you been a mental health professional or provider?	1-5	5	8	4	17
	6-10	3	17	5	25
	11-15	5	17	0	22
	16-20	2	12	4	18
	21-25	4	3	5	12
	30+	3	5	6	14
Total		22	62	24	108

<b>Table 8a. Years in Mental Health Profession and Respondents Belief about the Efficacy of MDMA Assisted Psychotherapy Chi-Square Tests</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.969 <sup>a</sup>	10	.041
Likelihood Ratio	23.519	10	.009
Linear-by-Linear Association	1.310	1	.252
N of Valid Cases	108		

a. 10 cells (55.6%) have expected count less than 5. The minimum expected count is 2.44.

We then analyzed the relationship between the respondent’s viewpoint about the use of drugs not specifically FDA approved for the clinical treatment of PTSD and their efficacy beliefs

about MDMA assisted psychotherapy. The research question for the study was: What is the relationship between the respondents’ attitude toward drug use not specifically FDA approved in clinically treating PTSD and their attitude toward the efficacy of a psychedelic drug therapy?

The research hypothesis for the study was: There is a positive relationship between the respondents’ attitude toward the appropriateness of non-FDA approved drugs in clinically treating PTSD and their attitude toward the efficacy of a psychedelic drug therapy.

Tables 9 and 9a show the inferential statistics of the relationship listed above. Since the p-value (.000) is less than .05, the results of this data are statistically significant. As a result, we reject the null hypothesis that there is no relationship between the respondents belief in utilizing drugs not specifically FDA approved for the clinical treatment of PTSD and their belief about researching MDMA assisted therapy further.

Table 9 shows 92 respondents believe this research should be continued, while only 39 respondents did not. It also shows the largest number of respondents who believed MDMA-AP should be researched also were neutral in their belief about the appropriateness of the use of drugs not specifically approved by the FDA for the treatment of PTSD.

<b>Table 9. Respondents Belief About the Appropriateness to Use Drugs That Are Not Specifically FDA Approved for the Clinical Treatment of PTSD and Their Belief About the Further Research of MDMA Assisted Psychotherapy Crosstabulation.</b>		
	Do you think MDMA sounds like an intervention that should be researched further?	Total



		Yes	No	
Do you think it is ever appropriate to use drugs that are not specifically FDA approved for the clinical treatment of PTSD?	Very Inappropriate	4	10	14
	Inappropriate	12	12	24
	Neutral	50	13	63
	Appropriate	24	3	27
	Very Appropriate	2	1	3
Total		92	39	131

**Table 9a. Respondents Belief About the Appropriateness to Use Drugs That Are Not Specifically FDA Approved for the Clinical Treatment of PTSD and Their Belief About the Further Research of MDMA Assisted Psychotherapy**

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	23.347 <sup>a</sup>	4	.000
Likelihood Ratio	22.712	4	.000
Linear-by-Linear Association	18.600	1	.000
N of Valid Cases	131		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .89.

Due to the prevalence of PTSD showing up in the veteran community, we also wanted to look at any correlations between a respondent’s clinical setting for treating clients suffering from PTSD and their belief about the VA pursuing further research of new PTSD interventions.

The research question for the study was: What is the relationship between the respondent’s clinical setting for treating clients suffering from PTSD and their attitude about the VA testing new PTSD therapy interventions? The research hypothesis for the study was: There is a positive relationship between the respondent’s clinical setting related to the VA and their attitude about the VA implementing testing for new PTSD treatment interventions.

Tables 10 and 10a show the inferential statistics of the relationship listed above. Since the p-value (.235) is greater than .05, the results of this data are not statistically significant. As a result, we fail to reject the null hypothesis that there is no relationship between the respondent's clinical setting and their attitude about the VA testing new PTSD treatment interventions.

**Table 10. The Respondents' Professional Setting For Treating Most Their Clients Suffering From PTSD and How Much They Believe the VA Should Be Testing New PTSD Therapy Interventions Crosstabulation.**

		How much do you believe the VA should be testing new PTSD therapy interventions?			Total
		Strongly Disagree	Disagree	Neither Agree nor Disagree	
What professional setting have you treated the most of your clients suffering from PTSD?	Clinic	5	10	33	48
	Hospital	3	1	9	13
	Private Organization	4	2	10	16
	Residential	1	1	5	7
	Non-Profit Organization	6	3	23	32
	School	1	1	3	5
	VA/Vet Center	2	1	3	6
	Other	7	7	5	19
Total		29	26	91	146

**Table 10a. Chi Square Tests for The Respondents' Professional Setting For Treating Most Their Clients Suffering From PTSD and How Much They Believe the VA Should Be Testing New PTSD Therapy Interventions.**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.411 <sup>a</sup>	14	.235
Likelihood Ratio	17.859	14	.213
Linear-by-Linear Association	7.272	1	.007
N of Valid Cases	146		

a. 15 cells (62.5%) have expected count less than 5. The minimum expected count is .89.

## **Discussion**

This research has continued the dialogue surrounding the overarching topic of treating PTSD and the debate about the utilization of MDMA-AP in this treatment. In addition to the scientific community, we included the clinical community directly treating clients suffering from PTSD and the societal interpretations of this type of research.

Three dominant themes emerged from the three data sets: positive and negative attitudes pertaining to MDMA as an intervention for PTSD; effusive and/or willful responses in these communities; and the gaps in research. We were surprised by the results that ensued.

Due to the reclassification of MDMA as a Schedule I drug and the conflation with its street drug counterpart, we fully anticipated many more negative attitudes about this research and those who have advocated for it. This simply was not the case, across the communities of data we found the majority of opinions oriented in a more positive to neutral direction.

Within each themed category, each author has broken out the specific discussion points tied to the qualitative and quantitative data.

### **Attitudes Pertaining to the Use of MDMA as an Intervention**

Present in all three datasets was the conflation of therapeutic grade MDMA with ecstasy. It is not known if there is truly a misnomer about the relationship of the two or if there is intentionality in this language. We understood this oversight in the popular and even in the clinical practice populations, however, in the scientific community this was confounding.

We also found a generally positive response in regard to further research. Although, it is speculated that most would profess that overall they are content with the current interventions for

PTSD this affirmation of the further research of MDMA would assert that something more is needed.

**Attitudes in the review of scientific literature.** Attitudes about MDMA in the scientific literature were evident on both ends of the positive/negative spectrum. Authors such as Parrott contributed negative attitudes toward MDMA use, while others such as Doblin and Mithoefer provided more predictably positive attitudes toward MDMA. There were other contributions which fell into the middle of the positive/negative spectrum, showing either positive or negative attitudes toward MDMA.

One of the most interesting findings from the review of scientific literature resides at each end of the “For” and “Against” spectrum. As one might expect, there is swirling controversy around the use of a “street drug” such as ecstasy for mental health therapy, but many contend that this is not in fact what is being proposed. Rather, what is being proposed, argues Doblin, Mithoefer, and others, is the use of MDMA in mental health therapy. Pure MDMA is not ecstasy, which is made by unknown and unregulated manufacturers with unknown and unregulated ingredients and with unknown concentrations of actual MDMA (Mithoefer, Jerome, & Doblin, 2003, Mithoefer, 2007, Mithoefer, Wagner, Mithoefer, Jerome, & Doblin, 2011, Mithoefer, et. al. 2012). This distinction between MDMA and ecstasy is a crucial one.

In spite of the importance of distinguishing a pure substance from an unpredictable street drug, particularly within a scientific experiment, not all researchers explicitly used this distinction. The conflation of pure MDMA and ecstasy was present in virtually all the articles examined regardless of whether the article suggested further use and study or not. Perhaps this is simply a colloquial reference to orient the reader, but because the term “ecstasy” carries

pejorative overtones and an air of unprofessionalism, this term may prime the reader in a way that could cause them to disregard legitimate scientific research.

As mentioned in the findings, 12% of the articles reviewed fell in the “Against” or “Negative” columns; while the majority, 64%, of the articles contained “For” or “Positive” language. These, of course, included Doblin’s overt endorsements, but the majority of the “For” or “Positive” articles were near the middle of the debate spectrum. In fact, just under 25% of all of the articles met the criteria for “Neither,” evenly reporting both for and against language without a request for further action.

An interesting example of just such a balanced approach actually came from Parrott (2007) who typically is deeply opposed to the use of MDMA in therapy. But in this particular article by Parrot, MDMA is addressed as both positive and negative. Parrot (2007) says that “MDMA is a remarkable drug, with subjective effects that can be extremely positive and life-enhancing... [however] a detailed analysis of its pharmacodynamic profile shows that there are many core problems” (p. 191). Any degree of positivity towards MDMA was not expected coming from Parrott, yet this article also evenly addresses the nuances that exist with the current data. For example, the article addresses the neurotoxicity data by stating, “Neurotoxicity is, however, only of marginal relevance here, as in humans, it is primarily an issue of repeated drug usage” (p. 191).

Another way that attitudes toward MDMA played out in the data is in the perceptions of MDMA users themselves. That is to say, positive or negative attitudes toward the setting or environment in which MDMA is used may have important implications for the user’s experience. The discussion of “set and setting” refer to the importance of milieu and mental state

in predicting outcomes of MDMA use. Essentially, it is argued that the positive or negative subjective experience of users of MDMA, as with all hallucinogens, is less determined by the chemical itself than it is determined by the mind-“set” of the individual and their environmental “setting.” As stated by Smith (2007) “the “set and setting” of the MDMA experience is strongly influential toward the effects upon the state of consciousness and the emotions one experiences” (p. 300).

**Attitudes in the review of primary source data.** The overall impression left by the pool of 34 videos included in the primary source data set is that MDMA is a newsworthy subject. It is of current interest to adults and possibly students. It is a subject that appeals to many different kinds of viewing audiences including television, web, and film. Furthermore, given the high number of views for “MDMA PTSD” related videos, YouTube appears to be a successful medium for sharing information related to MDMA-AP. And while there is no guarantee that viewers understand or retain what they are watching, viewers are interested in this subject now are and that interest is rising.

“MDMA the Movie” featured 3 trailers in the data set for a documentary set to tour the film circuit summer of 2016 (Viveka Films, 2015). These trailers were all published to YouTube no earlier than January of 2015 and garnered a total viewing audience of 59,014 as of April 4, 2015. If nothing else these high number of views infer that interest in this topic, at least as it pertains to this movie, is current. It might also be argued that interest is growing for MDMA as a mental health intervention overall.

Total number of views across the data set were collected twice, on February 8, 2015 and again on April 4, 2015. On February 8 there were 2,995,311 total views. On April 4 total number

of views increased to 3,284,204. This means that an additional 288,893 views occurred within an almost two month span. This increase in number of views were distributed evenly over the entire data set with each of the 34 videos increasing by at least 5 views while videos, such as The Verge's (2015) web feature "Ecstatic states: treating PTSD with MDMA," increased by 1135 views over this period.

The majority of the views in the total viewing count of 3,284,204 were affiliated with AsapSCIENCE, a YouTube channel facilitated by Moffit and Brown out of Ontario, Canada. Their channel has been active since 2012 and features 3,853,057 subscribers as of May 11, 2015. They produce upbeat educational videos on science based topics with song parodies, animation and high production values. They describe their brand as, "Your weekly dose of fun and interesting science." The content of their video on MDMA, which appeared in the data set as VIN 29 with 2,345,896 views as of April 4, produced 7 codes of data, via voiceover set to animation, with factually based scientific information related to MDMA. The casual tone of the dialogue and fun nature of videos suggest their videos are intended for a youth driven audience (AsapSCIENCE, 2015).

The remaining 938,308 views across the data set, as of April 4, might best be described as geared towards more adult-focused, hard news advocates, fans of interviews and researchers/educators. Even the more sensationalistic pundits featured within this grouping, such as actor turned media host Joe Rogan and Iraq war veteran and staunch libertarian Adam Kokesh, clung tightly to science-based content throughout their colloquial rants. One such example is Rogan in VIN 21 who appealed to US soldiers serving in the military in Afghanistan:

I want to say, if you're over there man stay safe and get the fuck out of there. Don't kill yourself. Get the fuck out of there as quickly as you can and uh, you know, god speed. And, if you do get home, and you get some shit fucking with you apparently they've been doing a lot of studies on post-traumatic stress disorder and MDMA. So look into that. Look into—if you have post-traumatic stress disorder, there's a lot of studies that are suggesting now that you can, you can get over it much more effectively with MDMA (Rogan, 2015).

The hard news features were populated with MDMA-AP-related logistics and results. News reporters in the US, UK and Australia, used the production of clinical trial research with a controlled substance as the angle for several of their stories. News reporter David Fuller, who covered the first psychedelic therapy conference held in the UK, made the pragmatic concluding remark in VIN 14d:

Talk of placebos and randomized controlled trials may be a long way from the drug's current perception among the public but the scientists know that their chances of success in continuing their research depend on keeping the debate as boring as possible (Evan Mantri, 2015).

Television news outlets ranging from local stations like WPSD out of Paducah, Kentucky to large internationally recognized media conglomerates such as CNN and Sky News edited together footage of scientific conferences, interviewed research subjects in their homes and in studio, and spoke with clinicians. They accurately shared the limitations of Mithoefer et al.'s 2010 pilot small sample size and often alluded to how clinical use of MDMA is different from recreational use of the street drug ecstasy.



VIN 35 contained actual footage of Rachel Hope undergoing treatment during one of the clinical trials she participated in as a subject for Mithoefer's 2010 pilot. After showing the footage in front of a live studio audience Hope sheepishly remarked, "It's a little different than you thought it would be, right? [laughs] No it's not a, it's not a party. It's hard work! The medicine makes it so much easier like Dr. Stork was saying" (The Doctors, 2015).

For the majority of the news related videos, the tone of the reporting was neutral and the clinicians and research subjects interviewed were composed and even in their delivery. These factors aided the credibility of the reports and underscored the overall sense that the general public is interested in hearing more about and learning the details surrounding research related to MDMA and PTSD.

Overall, there were very few critical or negative remarks made towards MDMA-AP across the data set. Of the  $n=76$  codes that fit into the category of "For & Against" only  $n=9$  skewed negative in beliefs against support of MDMA-AP. Within the effusive and willful codes,  $n=4$  of the total codes ( $n=37$ ) for this category would be considered negative towards MDMA and/or MDMA-AP. Overall, there was an outpouring of support for these studies, and a request for continued research related to MDMA-AP.

**Attitudes in the review of the conducted survey.** The attitudes of the licensed clinical social workers who work with this population did not align with our hypothesis. We believed those who work in this field would possess a neutral or negative viewpoint about the efficacies related to the current treatments for PTSD. According to the respondents' of our survey, 71% (104 out of 146) believe the current treatment interventions are effective forms of treatment. However, 71% of respondents also believe MDMA assisted therapy should be further

researched. This left us wondering if the current treatment interventions are effective, why would they believe another intervention should be researched?

We also looked at the how clinician's viewed MDMA-AP in comparison to other therapies. It was not shocking to find MDMA-AP at the bottom of the list of therapies ranked as "effective", however, it was surprising to find Prolonged Exposure without pharmacology ranked higher in the "ineffective" status.

It is also worthy to mention that our hypothesis about the link between those experienced in chemical dependency work and a negative viewpoint did not statistically align. We are not sure how to explain this anomaly as clinicians we have personally spoken to with this experience are vehemently opposed to the idea of introducing another drug into the system.

### **Effusive and/or Willful Responses**

We looked at the language that exaggerates findings, ignores counter findings, or expresses a sociopolitical agenda regarding the use of MDMA. Going into this research we suspected we would find some responses riddled with strong emotional content and/or willfulness due to the nature of conflation with its street drug hybrid, ecstasy, along with the fact that we live in a nation well known for its chemical dependency treatment. This was demonstrated in a variation of ways across the data sets.

**Effusive and/or willful responses in the review of scientific literature.** Of the five articles that met the "Against" criteria, four were authored by Dr. Andy Parrott. Dr. Parrott, a professor at Swansea University in the U.K., is the most prolific author who is opposed to the use of MDMA, and to the work of Doblin's MAPS in general. These two scholars most succinctly represent the two ends of the debate spectrum. One would be negligent discussing the

controversy surrounding this topic without mentioning the well-intended thrust and parry of these two personalities.

Parrott (2014b) generally takes a “safety first” stance regarding psychotherapeutic medications in general. He believes if other interventions are possible, they should be chosen over medications that come with risky side effects. He also believes that endorsing MDMA in any way only serves to reinforce the perception among adolescents that the drug is safe to use.

On the other end of the spectrum we find Doblin (2014). In contrast to Parrott, Doblin (2014) argues that the benefits of using pure MDMA greatly outweigh the risks. He argues that there are no categorically “safe” drugs, and there are too many sufferers of PTSD to ignore legitimate treatment options. In the end however, the majority, 64%, of the scientific articles avoided such statements and the vast majority of authors in our data set, 79%, avoided such statements.

**Effusive and/or willful responses in primary source data.** This category appeared the least frequently within the primary source data. While a range of negative and positively skewed codes were represented, the majority were supportive towards MDMA being used as an intervention for PTSD. Strongly worded codes were most often based around genuine sounding appeals for the need for this intervention and expressions of gratitude for research subjects to be given the opportunity to be included in the study. The general lack of negativity and ranting contributed, in large part, to the overall journalistic integrity perceived throughout most of the videos.

Almost all of the videos had some kind of psychoeducation perspective related to MDMA-AP. Thirteen (13) videos explicitly featured a news focus. Of these, 8 included a 3-

tiered structure of newscaster or a narrator, at least one research subject, and at least one clinical researcher. This journalistic approach provided a sense of credibility to the subject of MDMA-AP by offering a multiplicity of perspectives.

Nine (9) of the 34 videos featured one-on-one interviews with either researchers or research subjects. Interviewers such as Lyon and Rose, disclosed their own use of MDMA and openly endorsed its use in clinical research. Other reporters, such as CNN's Sanjay Gupta were more guarded about sharing their own opinions about MDMA-AP but quite supportive towards their interview subjects, such as VIN 6 where Gupta ended his interview with Rachel Hope by saying, "I hope [your story] helps people" (CNN, 2015b).

It was rare within any news feature or interview segment, for two or more individuals who disagreed with one another on policy or the ethics surrounding the subject of MDMA or MDMA-AP to be in the same camera shot, directly responding to one another in conflict. The possible exception to this was Professor David Nutt's interview on Sky News in the UK. Nutt was being interviewed shortly after he had been fired from a UK government sponsored position where he served as the head of their Advisory Council on the Misuse of Drugs. His firing was related to the publication of a poorly received article in the *Journal of Psychopharmacology* where Nutt compared the mortality rates of horseback riders to those who died of MDMA related causes. His study showed that, statistically, horseback riding was much more dangerous than usage of MDMA (Hope, 2009). In VIN 28b, Nutt appeared bothered by the interviewer's accusatory tone and suggested she might be more understanding if she had read the paper prior to interview:

Sky News: You're quite right, I haven't read your paper – but when you see a headline like that, that horse riding is more dangerous than ecstasy, that it does uh, make people think you're being glib about this.

Nutt: Well, all I can say is, is that it's good to have the opportunity to explain to, to people who might think that through your medium, that we're not being glib. We are saying that if you want to reduce harms and death, you should tell the truth about drugs and the harms of drugs. But also make reasonable comparisons (Sky News, 2015).

The salient point in this exchange is where Nutt expressed gratitude to his interviewer for the opportunity to explain his science-based perspective through the medium of television. This public disagreement allowed a rare overt reference within the data set to the ways in which the general public and scientific communities are able to influence one another via media. These intersections have the ability to shift policies rapidly given the right moment in time.

Consider one of MDMA's first appearances within a major visual media setting -- in this case, television. The daytime talk show "Donahue" invited guests onto its program April 25, 1985 to discuss the then legal drug. The overall format of the program was interview based, only this time the researchers, case study examples and also policy makers were in the same room together in front of a live television audience. This three-tiered journalistic approach was helmed by the sensationalist leanings of host, Phil Donahue, who set the tone for the discussion: "Well guess what? We've got another drug. It is synthetic and it makes you love everybody. It's called ecstasy. Now who doesn't want to take ecstasy" (Obenhaus, 2004).

Among Donahue's featured guests were: Gene Haislip, then deputy assistant administrator for the DEA during the Reagan administration's "Just Say No" to drugs campaign;

Charles Schuster, brain physiologist; and an unnamed woman who took MDMA to help her work through a terminal diagnosis of cancer. While this unnamed woman did not share whether or not she worked with a therapist, she told Donahue and the audience that she took the drug to manage the “fear, anger and emotional pain surrounding” her diagnosis. She went on to delineate the mental health benefits of how the, then legal, drug, “allowed things to open up” and fostered “communication with [her] family that [she] had never been able to have before.” (Obenhaus, 2004) -- testimony very much in line with how many research subjects described their more recent experiences with MDMA-AP.

When the show went off air, Charles Schuster, still speaking to the studio audience, mentioned a then unpublished study he was working on related to MDA, sometimes referred to as a “chemical cousin” to MDMA due to some similarities in their chemical structures. Schuster’s research showed that MDA caused brain damage after a single application. Haislip, still in studio during mention of this paper, used Schuster’s findings as evidence to place MDMA on the Schedule 1 list on an emergency basis May 31, 1985. It was announced via press conference, a little more than one month after the airing of “Donahue” featuring MDMA (Rosenbam & Doblin, 1991). *The New York Times* wrote about the ban, describing MDMA as “chemically related to the hallucinogen mescaline. Another related drug, MDA, has been shown to cause brain damage” (Associated Press, 1985).

Federal hearings began in 1985 in Los Angeles, Washington D.C. and Kansas City, MO to decide whether or not MDMA should be considered a Schedule 1 drug. They lasted approximately 2 years. Judge Young, who presided over these hearings, determined that the evidence provided, including witness testimony from researchers, scholars, therapists and

religious leaders, suggested that there were clinical research applications for MDMA and that it was not highly addictive. He ruled that MDMA should not be considered a Schedule 1 drug. The DEA upheld their ban on MDMA despite this. It remains in place to date. Mithoefer's et al.'s pilot study truly was the first FDA-approved clinical trial with MDMA on record (Rosenbaum & Doblin, 1991).

It is argued in documentaries on the history of MDMA, such as "Peter Jennings Reports: Ecstasy Rising" and "Neurons to Nirvana" (Obenhaus, 2004; Hockenull, 2013) and articles like Rosenbaum & Doblin's "Why MDMA Should Not Have Been Made Illegal" (1991) that the American public's viewing of this particular episode of "Donahue" glamorized the drug enough to contribute to the DEA's hasty decision to make the drug Schedule 1. While it is a stretch to draw comparisons between the similar journalistic conventions from a 1985 episode of "Donahue" and the series of videos examined for this research project, there is reason to point out the potential within visual media to change hearts and minds quickly given the proper circumstance.

In VIN 37, web interviewer Brian Rose asks Rick Doblin why he thinks the public is more responsive to MDMA now:

I think tens of millions, hundreds of millions of people are seeing it [...] People realize the problems we have transcend normal national boundaries or religious boundaries. So we have this growing globalization and this growing sense of challenges that we face that requires solutions that will require cooperation among people who are nominally different from one another [...] There is an opportunity for the unit of consciousness, the psychedelic experience, to be integrated into our culture now. There's a great need.

Whereas, during the 60s it was so new and so novel and in many different ways our culture wasn't prepared for it (London Real, 2015).

**Effusive and/or willful responses in the review of the conducted survey.** In relation to the survey, we first experienced a conflated response from our Internal Review Board. They required us to divulge MDMA's relationship with ecstasy in our informed consent for the purpose of full disclosure. This relationship was explained within our survey prior to questions pertaining to MDMA, so having to reveal its significance in the informed consent gave us a sense of the public perception and conflation of MDMA. We have also wondered if the four respondents who did not consent to taking the survey were influenced by this.

There were certain statements within the informed consent and the survey itself which evoked a couple of strong responses. The first one showed up in response to the statement, "evidence based treatment." The response we received was, "There is no such thing as 'evidenced-based therapies.' This is a misnomer. Read Scott Miller PhD, and Barr Duncan PhD. Evidenced-based practice is a practice - there is no research showing that one therapy is evidenced to be better at treating a certain diagnosis than another. Please help end this myth." This response was directly emailed to us and entered as a direct response on the survey.

The second was found in response to pharmacology, "It is the philosophy of many that pharma is the largest addiction in our nation right now. Who are we clean and drug free? Good statistics need baseline data: Don't think adding more options to deviate from baseline is sound."

Although these responses were not entirely predicted, we did suspect this topic in general would elicit some type of response due to the nature of chemical dependency treatment in this region of our country.



## **Omissions in the Research**

**Omissions in the review of scientific literature.** As previously mentioned, research on MDMA has been suppressed due to the DEA's decision to make MDMA a Schedule I drug. This is an important contributing factor to the lack of ongoing research on MDMA as a psychotherapeutic intervention. But this is not the only problem within the scientific research community. Parrot (2007) addresses other issues such as the problem with generalizing animal data to humans, the problem with generalizing recreational user data with its uncontrolled and unknown MDMA content and potency, and the usefulness of clinically controlled therapeutic use, and how much the "set and setting" factors may contribute to positive outcomes (p. 190). Ultimately, Parrott concluded in his 2007 article that there is simply not enough data, or not enough data of the right kind, to begin to establish expectations of general or clinical use.

Overall, more research is needed in order to understand both the acute and the long term negative and positive effects of this drug. Certainly, more research is needed examining the usefulness of this drug in psychotherapy. This research should focus on MDMA as a psychotherapeutic intervention among diverse age groups, across race and ethnic groups, and for diverse symptomatology. More study is also needed to understand the psychotherapeutic potential of this drug when used in populations such as poly-drug users and those with dual diagnoses. Finally, there needs to be a greater separation between ecstasy as a street drug, and MDMA as a pharmaceutical. The conflation of these two substances is not only inaccurate, but also unhelpful in examining potential beneficial use of MDMA for sufferers of PTSD.

**Omissions in the review of primary source data.** The nature of YouTube skews towards entertainment. To this point, it feels unfair to place too many demands on media to

return more research oriented data when the returns as they stand for this project already surpassed any expectation for scientific content per our hypothesis. That being said, representations of racial diversity as portrayed in the media, were predominantly Caucasian across the data set, beyond the occasional newscaster. This representation did not match the diversity of people living with PTSD in the United States or worldwide. In order for this research to be the most effective for the greatest number of people, representation from a more diverse racial population is needed. This opinion is based on watching only a fraction of videos available on MDMA and PTSD on YouTube, but auxiliary research completed to support this paper provided little reason to believe that diversity exists in other public facing facets of this research.

**Omissions in research shown in the conducted survey.** In evaluating the given results of this survey, 48% of our respondents believe the Veteran's Administration (VA) should be testing other intervention methods for PTSD and yet only 4% of them actually work for the VA or an affiliated Vet Center. This leaves the question pertaining to the perception of who is treating the majority of clients suffering from PTSD.

As stated in a preceding section of our discussion, we found the attitudes of the clinicians believing the current PTSD interventions are effective and yet they still believe MDMA-AP should be researched a little perplexing. We would assume this has to do either with the lack of certainty about the definition of effectiveness or perhaps it is as simple as the fact that social workers are open to new interventions to better serve their clients. However, the latter goes back to this vacillation of what effectiveness means in relation to PTSD.

More research should be obtained about the public and professional perception surrounding veterans suffering from PTSD versus PTSD in the civilian population. It would also

be advantageous to look at using a standardized test such as the CAPS assessment and evaluate what is acceptable in terms of the residual symptoms manifested in someone who has suffered from PTSD.

### **Military Implications**

Currently there are 4 treatment options and 3 pharmacological options offered by the VA and the FDA to treat PTSD. These are PE, CBT/CPT, EMDR and the pharmaceutical options are Paxil, Prozac, Zoloft, and Effexor. These treatment options, according to Doblin, are not enough (MAPS 2015c). Our study suggests that 50% of LICSW respondents working at the VA believe that the VA should pursue MDMA-AP as a treatment option, and 48% of all other LICSW respondents believe that the VA should explore offering this treatment.

As of 2013, only 2.4% of veterans used the VA for treatment services nationally (US Department of Veterans Affairs, 2014b). If the public perception is that the VA is at the forefront of providing PTSD treatment and other services for vets, with over 97% of vets seeking healthcare elsewhere, not seeking treatment at all or being denied treatment by the VA, it is a false perception. If the VA is treating such a small percent of the overall need, why is it important for them to potentially support new PTSD treatments such as MDMA-AP? The answer may be because the clinical community looks to the VA for funding, resources, and leadership on such matters.

Perhaps because of this MAPS has spent more than ten years building relationships with individuals within the VA for possible funding for the \$10 million required to fund phase 3 clinical trials for MDMA-AP. So far, any successful relationships they built were lost due to shifts in power within the administration. With each succession in power within the

administration, a new relationship needed to be forged. They are currently seeking relationships within the Department of Defense with minimal success as of 2014. As yet funding has not been fully secured for MAPS phase 3 clinical trials (Shroder, 2014, p. 397-401).

### **Strengths of this Study**

This study focused on the specific research work affiliated with MAPS, which has been a forerunner in conducting MDMA research in conjunction with the treatment of PTSD. MAPS has analyzed trends between the scientific community and cultural media; they have also explored the possible correlations between popular culture and scientific research. This study also investigated a current application of possible effects of the media on the attitudes of current licensed social workers in the field of treating PTSD with MDMA assisted therapy.

### **Limitations of this Study**

Due to the constraints of time and resources, this research had to be limited in the amount of scientific research studies included and in the amount of primary source material. This time constriction also capped the researchers collaboration time in the further development of the survey after scientific and primary source material were reviewed.

A limitation was also found after analyzing the data of the survey. Some of the questions were not clearly articulated in a way that would yield results which could be clearly compared. The desire of the authors was to be able to expand this research to include other therapy professionals, especially in the chemical dependency area in order to analyze any correlations and biases present.

The numbers of viewers provided within the primary source video data set should be considered rough estimates of the actual numbers of people watching MDMA-AP related

materials. This is due, in part, to YouTube created mechanisms linked to all videos published to their site which encourage what they call “quality views” and discourage false views intended to create the appearance of inflated popularity. Videos with less than 300 views are typically left alone. Once they surpass 300 views, YouTube freezes the number of views per video until they are run against an algorithm that gauges the kinds of views each video receives. A view from a robot, or from an individual who repeatedly presses play in a video published to their own page, is given less numerical weight than a unique viewer watching that same video from a unique site. YouTube uploads these view assessments in batches back to the video measuring viewers. As such, a view number may suddenly increase or stall given YouTube’s perception of audience.

Some of the videos may also have been watched, but not included in the number of views. For example, if a video was embedded or linked to from another site, this view would not be counted by YouTube (Parsons, 2014). Many of the videos were also originally created for television or film audiences and have viewers outside the scope of what YouTube is able to capture. Thus the numbers presented in this study may also be lower than the actual viewership for some videos.

### **Implications for Social Work**

This study approached the subject of trauma intervention from an innovative perspective. MDMA-AP is so new it has not been approved for use outside MAPS FDA-approved clinical studies. This intervention will not be fully approved by the time this paper is published and may never be approved at all, pending outcomes in MAPS clinical trials.

It is important that if it is approved, social workers, who make up roughly 60% of all mental health workers in the United States (NASW, 2015), are knowledgeable about this

intervention as soon as possible. Training for social workers to become MDMA-AP facilitators is a component of MAPS' phase 2 clinical study. Whether or not social workers become certified to facilitate these interventions, if the intervention technique is approved, it is imperative that social workers be able to refer their clients to the most effective treatments available. Given the depth of need and variety of symptomatology known to accompany PTSD, more options for treatment of PTSD could translate to more possibility for healing for social work clients.

**Ethical Considerations.** All of the current VA and FDA approved treatment options involve some aspect of exposure and/or “going through” the pain associated with the specific trauma, and MDMA-AP is no different, but it is distinctive in that it allows access to the trauma with less fear, anxiety, and pain. Individuals are able to access these painful memories with a decreased fear response and retain their cognitions during the time of the intervention. In this way, people with PTSD are able to apply what they have discovered of their own volition, at a self-chosen pace, in a supportive clinical setting. One subject from Mithoefer et al.'s 2010 study, described her experience with antidepressants and therapy as feeling “spaced out” and without sensitivity. She felt resistance to addressing her rape, however with MDMA she was able to both remain emotionally and mentally engaged and she was able to address her trauma without the associated fear and anxiety it once provoked (reset.me, 2015b).

It is our ethical responsibility as social workers to provide the best and least invasive treatments possible for our clients. Are these not also the same aims of the regulatory agencies that service the American public? With respect to PTSD, the pressing question remains, is the uncertainty regarding potential neurological damage associated with MDMA worth the risk, given the possibility that clients may, rather quickly, with less pain and much less expensively

than with other evidence-based treatments, find themselves healed of PTSD symptoms? In the words of Doblin (2014):

There are no risk-free interventions in use within or outside of medicine; the question is whether these risks are balanced by benefits. Regulatory agencies around the world have approved MDMA/PTSD research protocols on the grounds that the potential benefits outweigh the risks in clinical research settings (p. 107).

### **Conclusion**

As those who have gone before us already knew, we contend this subject is much more complex than assessing whether or not another treatment intervention for PTSD should be researched. Future research surrounding MDMA must deal with all the political and social factors which drive the lawmakers in reclassifying it from a Schedule I drug to a classification which would more easily allow its use in research.

According to the WHO (2001), the global average of those over 12 years of age that have tried the street version of MDMA is 2.6% (p. 5). Regardless of the politics and legislation surrounding this drug, over 161 million people worldwide have used MDMA with many new users each year. At the same time, there are people worldwide living with PTSD and other disorders this drug may be able to help. Preventing scientific exploration of this drug's effects, and ignoring current data due to social more is tantamount to burying our collective heads in the sand. In social work, we are faced with contending with the ethical issues surrounding our own biases and competencies. This topic has revealed the importance of facing controversial realities for the good of the global citizenry and according to this study, many social workers are amenable to just that.

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**Appendices**

**Appendix A: Informed Consent Form**

**Appendix B: Survey**

## Appendix A

### Informed consent and questions as they appeared in the Qualtrics survey

#### **Informed Consent Portion**

You have been invited to participate in a research study investigating the attitudes of social workers pertaining to post-traumatic stress disorder (PTSD) interventions. This study is being conducted by Tony Christian, Andrea Grey, and Terra Sorg, graduate students at St. Catherine University under the supervision of Lisa Kiesel, a faculty member in the Department of Social Work. You were selected as a possible participant in this research because you hold a LICSW in the state of Minnesota. Please read this form and ask questions before you agree to be in the study.

#### **Background:**

The purpose of this study is to look at the attitudes of licensed clinical social workers pertaining to the research of the MDMA (3,4-methylenedioxyamphetamine; also known as ecstasy) therapeutic intervention in the treatment of post-traumatic stress disorder. Approximately 100 people are expected to participate in this research.

#### **Procedures:**

If you decide to participate, you will be asked to answer 14 survey questions online about your experience in the field, your opinions about different PTSD interventions and your opinion about MDMA as an intervention option. This survey is completely voluntary and anonymous. You can choose to skip questions or not take the survey at all. If you choose to participate, it will take you about 15 minutes to complete.

#### **Risks and Benefits of being in the study:**

The study has minimal risks. Potential minimum risk would be emotional discomfort in answering the questions pertaining to PTSD. At the end of the survey we have listed an e-mail address for you to call if you have follow up questions as well as a number for Crisis Connection, a 24-hour hotline addressing a number of mental health needs.

There are no direct benefits to you for participating in this research.

#### **Compensation:**

If you participate in this survey, you will have the opportunity to enter into a drawing for a \$50 gift card to Target. The drawing will occur no later than May 31, 2015. Winners will be notified via e-mail and the gift card will be sent electronically to this same address.

If interested in entering please send your e-mail address to [sorg5498@stthomas.edu](mailto:sorg5498@stthomas.edu). Your entry will not be tied to any of your responses for this survey. Any drawing submissions sent to us will be destroyed as of May 31, 2015 and the winner will be contacted to obtain further information.

We will not distribute this information to any other parties. Only one entry per survey participant, please.

**Anonymity:**

All survey data is submitted to the researchers without connection to your personal information and will be anonymous.

**Voluntary nature of the study:**

Participation in this research study is voluntary. Your decision whether or not to participate will not affect your future relations with St. Catherine University in any way. If you decide to participate, you are free to stop at any time without affecting these relationships.

**Contacts and questions:**

If you have any questions, please feel free to contact, Terra at sorg5498@stthomas.edu. You may ask questions now, or if you have any additional questions later, the faculty advisor, Lisa Kiesel at 612-963-3767 will be happy to answer them. If you have other questions or concerns regarding the study and would like to talk to someone other than the researchers, you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739 or jsschmitt@stkate.edu.

You may keep a copy of this form for your records.

**Statement of Consent:**

By completing this survey and submitting it, you will be giving your implied consent for us to use your responses in our study. You are making a decision whether or not to participate. Your entry into the survey indicates that you have read this information and your questions have been answered. If you choose to participate in this survey, please continue by clicking the button below. Even after entering into the survey, please know that you may withdraw from the survey at any time. If you do not choose to participate in this survey, you may exit at this time.

## Appendix B

### Survey

#### **Question 1:**

What license do you hold in the State of Minnesota? Select all that apply.

- a. LGSW
- b. LICSW
- c. LADC

#### **Question 2:**

How many years have you been a mental health professional or provider?

- a. 1-5 years
- b. 6-10 years
- c. 11-15 years
- d. 16-20 years
- e. 21-25 years
- f. 26-30 years
- g. 31-35 years
- h. 35+ years

#### **Question 3:**

Have you had previous experience treating clients with PTSD 18 years of age or older?

- a. Yes
- b. No

**If the survey participant answers, “no,” they will be thanked and informed the survey has ended. If they answer, “yes,” the survey will continue.**

For the remaining questions, please consider the following information: the Veteran’s Administration has identified 3 evidence-based therapy interventions to treat PTSD and the FDA has approved certain drugs for PTSD symptom use. There are other drugs prescribed considered off label and other drugs (legal/illegal) that have been used to treat PTSD, including MDMA.

(MDMA) 3,4-methylenedioxymethamphetamine is a synthetic pharmaceutical psycho-stimulant chemically defined as a phenylethylamine derivative. It has been and is currently being studied as an alternative treatment for those suffering from PTSD. It is only used in the supervision of a team of professionals and always includes a psychotherapeutic intervention.

#### **Question 4:**

What professional setting have you treated the most PTSD clients in? Select only one.

- a. Clinic
- b. Hospital
- c. Private Organization
- d. Residential
- e. Non-profit Organization
- f. School
- g. VA/Vet Center
- h. Other\_\_\_\_\_

**Question 5:**

Approximately what percentage of your client population has been diagnosed with PTSD? Select one.

- a. 1-25%
- b. 26-50%
- c. 51-75%
- d. 76-100%

**Question 6:**

Approximately what percentage of your client population has been diagnosed with chemical dependency? Select one.

- a. 1-25%
- b. 26-50%
- c. 51-75%
- d. 76-100%

**Question 7:**

Which evidence-based therapies have you received training for pertaining specifically to PTSD? Select as many as apply.

- a. Prolonged Exposure Therapy
- b. Cognitive Behavioral Therapy
- c. Cognitive Processing Therapy
- d. Eye Movement Desensitization and Reprocessing (EMDR) Therapy
- e. Pharmacological Therapy (SSRI or SNRI)
- f. Other\_\_\_\_\_
- g. None

**Question 8:**

Which additional therapies have you received training in for treating PTSD?

- a. Trauma-focused Cognitive Behavioral Therapy
- b. Yoga Therapy
- c. Stress Inoculation



- d. Acupuncture
- e. Virtual Reality Therapy
- f. Brief psychodynamic psychotherapy
- g. Group Therapy
- h. Family Therapy

**Question 9:**

Do you think it is ever appropriate to use drugs that are not specifically FDA approved for the clinical treatment of PTSD? Rate on a scale of 1-5: \_\_\_\_\_ 1 (Definitely agree) to 5 (Definitely disagree) \_\_\_\_\_

**Question 10:**

How effective are the current clinical treatment methods for PTSD? Rate on a scale of 1-5: \_\_\_\_\_ (1=effective, 5=non-effective): \_\_\_\_\_

**Question 11:**

How much do you believe the VA should be testing new PTSD therapy interventions that have not yet been approved by the FDA? Rate on a scale of 1-5: \_\_\_\_\_ 1 (Definitely agree) to 5 (Definitely disagree) \_\_\_\_\_

**Question 12:**

Please rank the following PTSD interventions according to your belief about their efficacy. Please rank your top 4 choices (1=most effective, 4=least effective).

- a. Prolonged Exposure Therapy only
- b. Cognitive Behavioral Therapy only
- c. Cognitive Processing Therapy only
- d. Eye Movement Desensitization and Reprocessing (EMDR) Therapy only
- e. Psychedelic Drug Therapy (MDMA) AND Prolonged Exposure Therapy
- f. Pharmacological Therapy only (SSRI or SNRI)
- g. Prolonged Exposure Therapy AND Pharmacological Therapy (SSRI or SNRI)
- h. Cognitive Behavioral Therapy AND Pharmacological Therapy (SSRI or SNRI)
- i. Cognitive Processing Therapy AND Pharmacological Therapy (SSRI or SNRI)
- j. Eye Movement Desensitization and Reprocessing (EMDR) Therapy AND Pharmacological Therapy (SSRI or SNRI)

MDMA is also known as the street drug Ecstasy.

**Question 13:**

Please rank the interventions you would consider practicing or seeking training for in order to practice? Please rank your top 4 choices (1=most effective, 4=least effective).

- a. Evidence based interventions including prolonged exposure, cognitive behavioral therapy, cognitive processing therapy, or eye movement desensitization and reprocessing therapy.
- b. Yoga therapy or acupuncture
- c. Other alternative therapies
- d. Evidence based interventions in conjunction with pharmacology
- e. Evidence based interventions in conjunction with MDMA

**Question 14:**

Do you think MDMA sounds like an intervention that should be researched further?

- a. Yes
- b. No
- c. Maybe

Thank you again for your participation. If you are feeling any discomfort or need to talk with someone, please call the Crisis Connection at 1-866-379-6363. If you would like to talk with us about this survey, please contact us by email at [sorg5498@stthomas.edu](mailto:sorg5498@stthomas.edu).