

**Examining the Relationship Between the Therapeutic Effects of Autonomous Sensory
Meridian Response (ASMR) and Mindfulness**

Alberto Medeiros

Division of Arts and Science, City University of Seattle

CPC 695: Counselling Psychology Research Project

Dr. Meaghan Brierley

November 14, 2021

Abstract

Autonomous sensory meridian response (ASMR) is an understudied sensory phenomenon in which individuals experience a tingling or buzzing sensation inside the head, on the scalp, or down the spine (Barratt & Davis, 2015). This literature review explores ASMR as a therapeutic tool, examines the differences and similarities between mindfulness and ASMR, and outlines steps for integrating ASMR into a therapeutic setting. Key findings indicate that ASMR is an effective therapeutic tool in the treatment of several psychological problems. However, further research is warranted on ASMR's long and short-term effectiveness, ways in which the sensory experience can be induced, common triggers, and suitable therapeutic approaches that can work alongside ASMR to increase the effectiveness of its therapeutic capacity. Implications and recommendations for counselling psychology practice are also discussed.

Keywords: autonomous sensory meridian response, ASMR, mindfulness, therapy, counselling psychology, scalp, sensation, hearing, spine

Examining the Relationship Between the Therapeutic Effects of Autonomous Sensory Meridian Response (ASMR) and Mindfulness

In recent years, a phenomenon known as autonomous sensory meridian response (ASMR) has gained popularity by garnering a large following on social media, such as the video-sharing website YouTube. These online video communities have enabled others to understand and experience a replicable phenomenon that they could not previously explain (Smith et al., 2017). ASMR is a physical response that is elicited by the sensation of pleasure caused by certain smells, sounds, or images (Keizer et al., 2020). It is a heavily under-researched topic and a relatively unknown phenomenon that occurs for only some people, and it has only recently begun being studied. Barratt and Davis (2015) describe ASMR as a sensory phenomenon in which individuals experience a tingly sensation across the scalp and neck in response to visual or audio stimuli, which are considered triggers for ASMR.

Over the years, ASMR has garnered a large following of individuals capable of using audio and visual stimulation to induce this sensory feeling. The most common way to experience ASMR is by watching a YouTube video where an individual, otherwise known as an ASMRtist, attempts to provide visual and auditory stimuli meant to induce the ASMR experience (Barratt & Davis, 2015; Poerio et al., 2018). ASMRtists often use triggers such as whispering, tapping, or personal attention, which are role-playing scenarios where the individual watching is placed under the ASMRtist's imaginary care—for example, being given some type of medical examination or hair grooming. The videos are often shot in such a way that the individual who is watching can feel in close proximity to the ASMRtist to create an environment in which the tingly or buzzing sensation can be experienced.

ASMR has been suggested as being a viable coping mechanism in dealing with psychological conditions, alleviating symptoms of stress and anxiety, and may even be helpful in dealing with chronic pain (Barratt & Davis, 2015). Due to its similarity to common mindfulness interventions, recent research has suggested that ASMR may be a feasible option when used in a therapeutic setting (Barratt & Davis, 2015; Fredborg et al., 2017; Poerio et al., 2018). However, to date, there are only three empirical studies that have investigated the therapeutic use of ASMR. Empirical researchers like Ditchburn and Bedwell (2019) have proposed ASMR to be an ineffective long-term therapeutic intervention, while others like Barratt and Davis (2015) and Poerio et al. (2018) have proposed it as a viable coping strategy in the treatment of psychological conditions in a short-term scenario.

Consequently, based on previous findings on the characteristics of individuals who experience ASMR and its similarities to mindfulness, this literature review supports that ASMR may have a place in current literature when used alongside common mindfulness-based interventions. Thus, through a comprehensive look at the literature, I will compare and contrast the similarities and differences between mindfulness and ASMR and outline the steps taken over the years for mindfulness to solidify itself as a highly effective therapeutic intervention. I will also describe the steps that should be taken in order to integrate ASMR in a therapeutic setting by discussing its implications for counselling psychology, recommendations for practice, and fundamental steps for future research. As such, the overarching question that will guide the present paper is: What are the steps that should be taken for ASMR to be utilized in a therapeutic setting?

Self-Positioning Statement

It was the fall of 2013 when I first came to understand the nature of ASMR. I had come across a video titled *Virtual Barbershop* in which two characters with comically thick Italian accents provided me, the virtual client, with a haircutting experience unlike any I had ever seen or heard before. In the video, the sound of scissors, clippers, and voices seemed to attack my eardrums with such precision I felt as though I could pinpoint exactly where each cut, slash, and comment was coming from. Not only that, but the quality of the cacophony seemed to elicit an involuntary response from my body in which a wave of shivers travelled down my spine and set about an overwhelming sense of relaxation. After that first experience, I was hooked and set about looking for similar videos.

Not long after embarking upon my research, I came across a channel by the name of GentleWhispering, which featured a woman slowly speaking into a microphone in a soft and calming voice. The way in which she spoke once again made me feel relaxed, accompanied by the same tingly sensation going down my spine. Intrigued by this new stimulus, I continued to watch more videos tied to this strange feeling and soon learned about a term called ASMR. Over the next few years, I learned that there was an entire community of individuals who were passionate about ASMR and that they were devoted to sharing this phenomenon with others with the primary intention of inducing relaxation.

I have always had an open mind about things that are out of the ordinary. To me, ASMR fits that category; it is a new area of study that very few people have an understanding about, and yet even those who are writing publications and constantly submerging themselves with a wealth of information in an attempt to garner a greater understanding of the topic know that there is much more to learn. Since its first publication in 2015, ASMR has been scrutinized and examined under many different lenses. It appears to be a growing and ever-changing topic as

new information is developed and acquired. It is a novel area of study with many avenues of research that have yet to be explored.

Since beginning my graduate program, I have always been quite fond of understanding the pros and cons of different therapeutic modalities. One, in particular, are mindfulness-based therapies. Mindfulness is a conscious state where individuals purposefully bring their own attention to the present moment. It is an Eastern practice that has been around for centuries and over the past 30 years has gained prominence in clinical and counselling psychology practice. Much like mindfulness, ASMR requires an individual to be fully present and attentive to an external stimulus, all the while ignoring any judgements or pressures that may be brought up by others or their own internal cognition. It is an experience that I believe many of us have felt before but did not know that there was a name for it, let alone research on it.

My biases in this literature review lie in the fact that the topic I have selected is one I enjoy and have experienced positive benefits from over the years. I integrally believe that the effects associated with ASMR are overall positive in reducing stress, anxiety, and insomnia, and inducing relaxation. However, in order to circumvent the confirmation bias that there is a high level of efficacy of ASMR in alleviating such symptoms, I have included research in the following literature review that challenges the perspective of what I believe to be true.

Review of Literature

The following literature review was conducted in the PubMed and PsycINFO databases. The keywords used were: ASMR and mindfulness, with association to the terms frisson, pleasure, misophonia, tingles, synesthesia, triggers, therapeutic use, depression, stress, sleep, and relaxation. Such terms were used due to their appearance in the foundational work of Barratt and Davis (2015) and del Campo and Kehle (2016), which are authors that have set the premise of

how ASMR is understood today. Given the many different perspectives of studies in the field, no restrictions to the minimum period of publication were made so that articles found until May 2021 were accounted for. The literature consists mainly of primary and secondary sources, including articles and firsthand critical evaluations from those who conducted the research.

Similarities and Differences Between ASMR and Mindfulness

In the first-ever research publication about ASMR, Barratt and Davis (2015) outlined ASMR as being similar to mindfulness. In their findings, they disclose that “devoting specific time to engaging in ASMR, watching relaxed scenes play out and sitting quietly could be considered a form of mindfulness” (Barratt & Davis, 2015, p. 11). The authors mention that individuals who engage in ASMR often focus on the present moment of the specific task that induces their perceptual experience while triggering their positive emotions. When an individual intently engages in ASMR, they are actively paying close attention to the external stimuli that are inducing the pleasurable sensation in their brain. It requires a great deal of focus, attention, and capacity to attune their focus to their sensory experience. Foundational contributions have also been made by del Campo and Kehle (2016), who have also suggested that mindfulness may be an underlying element of the ASMR experience. This suggestion is premised on the idea that ASMR requires individuals to engage in present moment awareness—a defining characteristic of mindfulness.

Prior research suggests that one of the primary differences between ASMR and mindfulness is that when individuals engage in ASMR, they feel the sensation of “tingles” being spread sporadically throughout their bodies (Barratt & Davis, 2015; del Campo & Kehle, 2016; Fredborg et al., 2017). The sensation is usually described as originating in the scalp and moving to the neck and down the spine (Barratt & Davis, 2015). Such a sensation has been deemed

pleasurable and correlated with a sense of happiness and enjoyment. However, there is little research to support reports of individuals experiencing the “tingly” sensation in relation to mindfulness. Nevertheless, several studies suggest the experience of pleasure and happiness is one that has been seen both in mindfulness and ASMR (Ditchburn & Bedwell, 2019; Harrison & Clark, 2016).

Definitions of Mindfulness

Mindfulness has been defined in the literature as the practice of paying attention to our direct experience as it unfolds in the present moment without any warranted external or internal judgement (Afzal, 2018; Brown et al., 2007; Chiesa, 2013; Gethin, 2011; Nilsson & Kazemi, 2016). What constitutes “in the present moment” has been further defined as what we are paying attention to; for example, what we are thinking, the feeling of our breath, and other bodily sensations (Black, 2011; Brown et al., 2007).

Definitions of mindfulness vary quite broadly and are usually associated with a particular state, such as a trait or characteristic, or practice, such as mindfulness-based meditation (Black, 2011; Brown et al., 2007; Chiesa, 2013; Nilsson & Kazemi, 2016). Arguably one of the most crucial components of practicing mindfulness is the degree of quality devoted to one’s attention. To put this statement in context, Afzal’s (2018) book about the applications of mindfulness in children describes the process of being mindful as being similar to using a muscle. Examples of this practice include asking: what is going through your mind at this moment? Do you notice when a new thought enters your mind? What kind of emotions are you experiencing right now? What kind of bodily sensations are you feeling? The process of mindfulness requires one to pay attention to their surroundings, such as the emotions, thoughts, and sensations that one is experiencing. A number of authors have recognized that the ability for an individual to notice

what is happening in their surroundings and ultimately return to their point of focus by bringing their awareness back to current experiences over and over again is a crucial component of engaging in mindfulness (Afzal, 2018; Bishop et al., 2004; Chiesa, 2013).

Studies have shown that the basic manner in which an individual is able to interpret and respond to their environment is through sensory information (Gafni-Lachter et al., 2021; Jerome & Liss, 2005; Şengül-İnal et al., 2018). Research has also shown that people have different thresholds on how they are able to absorb sensations, and it is directly correlated to one's mood, temperament, and lifestyle (Bakker & Moulding, 2012). As defined by Rosch (2007), the earliest form of mindfulness practice was comprised of three primary stages: the coming and going of perceptions and thoughts, the changing and shifting of the self and the acceptance of suffering. Mindfulness requires an individual to have the “willingness to experience thoughts, feelings, and physiological sensations, especially those which are negatively evaluated ... without having to avoid them or let them determine one's actions” (Bond & Bunce, 2003, p. 1057).

Characteristics Associated With ASMR and Mindfulness

Based on Costa and McCrae's (2008) Big Five model of personality, which includes openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism, Fredborg et al. (2017) developed the ASMR checklist, which was created primarily with the intention of determining differences in intensity of ASMR experiences in association with these five domains.

Fredborg et al. (2017) conducted a mixed-methods analysis of a series of online surveys of 290 participants. The online questionnaire included demographic questions of the Toronto Mindfulness Scale (Lau et al., 2006), the Big Five Inventory (Costa & McCrae, 2008), the Mindful Attention and Awareness Scale (Brown & Ryan, 2003), and the self-created Embodied

Emotion Scale. The analysis also included an ASMR questionnaire administered exclusively to ASMR participants evaluating the types of triggers that elicit tingles (e.g., haircut simulations, whispering, personal attention), including questions about their ASMR experiences, such as the frequency in which participants utilized ASMR videos to induce sleep and relaxation. The research demonstrated that individuals with ASMR scored significantly higher in openness-to-experience and neuroticism domains and scored lower on conscientiousness, extraversion, and agreeableness domains compared to a matched control group.

Extrapolating from examinations and surveys of similar conditions, other researchers predicted that individuals who had ASMR would differ from the matched control group in the openness-to-experience and neuroticism domains (Fredborg et al., 2017). Openness-to-experience is the ability to engage in a wide range of interests, unconventionality, and inner curiosity; neuroticism is associated with self-consciousness, hostility, aggression, and anxiety (John & Srivastava, 1999). Reported findings indicate that individuals who have ASMR demonstrated higher scores in the openness to experience and neuroticism domain than a matched control group (Fredborg et al., 2017). Such findings are corroborated with a previous study supporting the idea that individuals who experience ASMR have increased receptivity and sensitivity to sensations (del Campo & Kehle, 2016). These findings may also explain why mindfulness is similar to ASMR since both require a certain level of curiosity, aesthetic sensitivity, and attentiveness to inner feelings in order for the participant to feel fully present with their perceptual experience (del Campo & Kehle, 2016). For instance, during ASMR experiences, individuals are often required to devote their attention to specific stimuli that trigger their tingling sensations (Fredborg et al., 2018), for example, by paying close attention to a

person's whisper or focusing on tactile stimuli such as the finger tapping movement of an inanimate object.

On the other hand, literature suggests that the degree to which an individual has the capacity to engage in mindfulness is mainly dependent on their sensory-processing sensitivity (SPS; Bakker & Moulding, 2012). This trait assesses the level of sensitivity and receptivity for an individual to process a variety of stimuli (Bakker & Moulding, 2012). Such stimuli may be either positive, such as the sensation of pleasure, awareness, or appreciation of the environment, or negative, such as feeling overwhelmed by the stimuli (Bakker & Moulding, 2012). People have different thresholds for experiencing and responding to sensations, which is largely a mirror of their lifestyles, perspectives, and worldview (Bakker & Moulding, 2012). Aron (2004) describes individuals who have a high threshold of SPS as more perceptive than others of subtle changes in the environmental stimuli but more prone to feeling overwhelmed by high levels of stimulation, such as loud noises or changes in temperature.

In their study, Bakker and Moulding (2012) sought to investigate the relationship between SPS and mindfulness by utilizing a cross-sectional questionnaire design. Ninety-four participants were recruited and were asked to answer a questionnaire. The study results indicated that higher SPS scores corresponded to higher levels of depression, stress, and anxiety, which is consistent with pre-existing research by Liss et al. (2008). Results also showed that higher SPS was related to a lower disposition to engage in mindfulness. Overall, these findings are corroborated by Maclean et al. (2010), who indicate that mindfulness meditation training makes it easier to maintain sustained attention while decreasing SPS levels.

Common ASMR Triggers and Sensations

Many studies have focused on ASMR's perceptual experience, including its types of triggers, such as whispering, tapping, role-play, scratching, and personal attention (Barratt & Davis, 2015; Liu & Zhou, 2019). Researchers of this phenomenon have identified two types of ASMR. Barratt et al. (2017) categorize ASMR responses as type A and type B. Type A episodes of ASMR are elicited by the experiencer using intentional stimuli. Research suggests that the experience of ASMR is unique to each and every person, including the thought patterns of those who are viewing it (Barratt et al., 2017). An example of a type A response is to have the thought process of feeling relaxed when searching the internet. On the other hand, type B experiences are triggered involuntarily by an external event. For example, when going to a store and the seller attempts to sell a certain product, the individual feels a sense of calmness and relaxation (Barratt et al., 2017). Through the product demonstration, the person who is experiencing ASMR may be triggered by either the voice or visual cues of the person attempting to sell the product, consequently and unintentionally provoking a soothing and relaxing sensation. The main difference between type A and type B is the level of intentionality that takes place when the ASMR response is elicited. In type A, the person is intentionally seeking the ASMR response; in type B, they are not.

Individuals who experience ASMR are often stimulated by a tingling or buzzing sensation inside their head, on the scalp, or down the spine (Barratt et al., 2017). It is worth noting that such experience is one of the primary aspects that sets ASMR apart from other sensory phenomena. Although vague, a good example of an ASMR trigger would be watching a video of someone brushing their hair or watching an individual apply makeup and feeling the elicited relaxation response. Marsden (2012) describes himself watching home shopping networks and never understood why he felt the tingling sensation down his scalp. He mentions,

“the more gentle and redundant their explanations are, the more pleasure I get” (Marsden, 2012, para. 2).

ASMR is frequently enjoyed by YouTube communities that have built themselves around content creators that call themselves ASMRtists. These content creators frequently combine different types of triggers with the intention of inducing people’s ASMR. In their study, Barratt and Davis (2015) found that a diverse array of visual, auditory, and tactile triggers can induce ASMR. These triggers included whispering (75%), crisp sounds (64%), and nail tapping and personal attention (69%). It can be concluded based on the findings above that ASMR’s triggers offer a predictable ASMR reaction for those who are able to experience it. However, the degree to which an individual can experience the intensity of such a trigger varies across different groups. Research suggests that some individuals may only be able to experience tactile triggers while others may report feeling their ASMR only through audio stimuli (Barratt & Davis, 2015).

Similarities to Frisson

The psychological benefits of creating and listening to music have been amply documented in many different cultures. Recently, ASMR has been suggested as being similar to other sensory experiences, such as frisson (i.e., musically induced chills). del Campo (2019) reported that both sensory experiences are pleasant and euphoric while requiring an individual to be fully aware and present of the triggering stimuli. Such findings have also been explored in a prior study that found individuals who experienced both frisson and ASMR also reported feeling a tingly sensation that spread through the body (Fairington, 2014).

However, several studies have reported notable differences between frisson and ASMR. The two phenomena differ in that the tingles associated with frisson spread sporadically throughout the body and are very intense (Kovacevich & Huron, 2018). Some authors have also

suggested that ASMR tingles last for a considerable amount of time before dissipating and at a lower intensity level (del Campo & Kehle, 2016). In addition, frisson is often associated with auditory stimulation (such as listening to music) but not always (Chan et al., 2010). Chan et al. (2010) have also explored the differences between frisson and ASMR. They found that ASMR was often associated with auditory, tactile, and visual stimulation whereas frisson was not.

Possible Connection to Misophonia and Synesthesia

ASMR has also been claimed to be similar to misophonia, which is a relatively unknown condition where an individual experiences an adverse reaction to repetitive sounds like lip-smacking, chewing, or pen clicking (Brout et al., 2018; Edelstein et al., 2013; Janik McErlean & Banissy, 2018; McGeoch & Rouw, 2020). There have been reports of individuals being able to experience ASMR from the triggers associated with misophonia. For example, a study by Edelstein et al. (2013) found that 50% of the participants who experienced misophonia also experienced ASMR. However, misophonia can be defined as the hatred of sound caused by an adverse emotional reaction towards such sounds.

Unlike ASMR, where the users often report feeling calmed and relaxed due to the pleasant sensation that is induced by the perceptual phenomenon, misophonics often report such sounds causing outbursts of anger and disgust. However, as Barratt and Davis (2015) have suggested, misophonia and ASMR represent opposite ends of the phenomenon. One crucial difference between both conditions is the pleasantness that is associated with the sensation. An important distinction is the type of sound that is used to elicit a response. The mouth sounds that trigger a pleasant ASMR sensation for an individual may be an unpleasant response for another (Barratt & Davis, 2015; del Campo & Kehle, 2016).

In their study, Barratt and Davis (2015) also suggested possible connections between ASMR and synesthesia. Hubbard and Ramachandran (2005) indicate that synesthesia is a rare condition in which sensory stimulation in one modality causes additional experiences in a second modality. Day (2005) is another researcher who has studied synesthesia; they categorized grapheme-colour (e.g., viewing letters or numbers induces the perception of colours) as one of the most common forms of synesthesia. People with synesthesia may associate a specific taste to when they hear a particular sound or associate specific colours based on an emotional feeling (Baron-Cohen et al., 1996). Among the participants who took part in Barratt and Davis' study, 5.9% reported recognizing synesthesia when shown ASMR videos. In their study, the authors identified two main differences between ASMR and synaesthesia. In synaesthesia, the users experience, such as the visualization of colours or the association of taste to inanimate objects, was often automatic and uncontrolled (Banissy et al., 2014; Barratt & Davis, 2015; Fredborg et al., 2017). In contrast, in ASMR, the user could consciously stop the triggering of the stimulus (tingling sensation) at their own free will (Barratt & Davis, 2015; Fredborg et al., 2017).

Although studies have been conducted by many authors, "synesthesia experiences are objectively difficult to interpret, since many individuals who have synesthesia may fail to recognize it as such" (del Campo, 2019, p. 12).

Mindfulness in Relation to ASMR and Other Sensory Experiences

In their research, Barratt and Davis (2015) identified ASMR experiences as sharing similar features to the state of "flow." Flow can be described as an experience of intense focus, diminished awareness of the passage of time, and immersion inactivity (Csikszentmihalyi & Csikszentmihalyi, 1992). Csikszentmihalyi (1997) suggested that musical activities are prone to inducing a flow state. ASMR has also been compared to musical frisson—an experience that is

likely to occur when an individual is fully immersed and focused on the music they are listening to rather than doing several tasks at once (Fredborg et al., 2017).

Another study by Harrison and Clark (2016) sought to investigate the relationship between mindfulness and how often people report aesthetic experiences. Harrison and Clark suggested that such a motion of stepping away from a result-driven mindset is parallel to the practice of engaging in mindfulness, where an individual is orienting their experience towards the present moment. As individuals participate in the psychological process of engaging their attention to the artistic object, all everyday concerns and problems are ignored allowing them to experience the feeling of mindfulness (Harrison & Clark, 2016).

Mindfulness Interventions

As outlined earlier, research suggests that the degree to which an individual is able to engage in mindfulness can be improved through training, such as meditation and associated techniques. Over the last 30 years, there has been a growing interest in both the scientific community and the mental health community in regards to mindfulness-based practices with the primary intention of improving wellbeing. Mindfulness-based therapeutic approaches often combine the quality of being “present in the moment” or quality of awareness with other pre-existing cognitive or behavioural interventions. For example, integrating mindfulness practices with cognitive behavioural therapy (CBT) creates an intervention that primarily focuses on an individual’s thoughts being mindful of the present moment; it also emphasizes being open and accepting of behaviours, emotions, and thoughts rather than actively finding ways to change them (Chambers et al., 2008). Similarly, combining mindfulness with techniques that induce relaxation has created the therapeutic approach known as mindfulness-based stress reduction (MBSR; Barnhofer et al., 2009).

Both mindfulness-based cognitive therapy (MBCT) and MBSR aim to enable patients to relate their own thoughts and bodily sensations to the awareness of their surroundings to break the cycle that ineffective strategies may cause in dealing with rumination (Schanche et al., 2020; Shapiro et al., 2011). Both therapeutic approaches have shown effectiveness in dealing with psychological symptoms of depression, anxiety, substance abuse, chronic pain, and several other conditions (Baer, 2003).

The effectiveness of mindfulness has also been examined through other therapeutic approaches, such as mindfulness-based art therapy (MBAT), which combines forms of mindfulness and art as a sensory experience to help alleviate symptoms of psychological problems. Studies have shown that MBAT works in combining the benefits of physical strength by encouraging an individual's activation of the body's repair system to improve self-regulation, attention, and negative emotions, and helping reduce ruminative thinking processes (Monti et al., 2006).

Reduced Rumination

Several studies have evaluated the effectiveness of mindfulness in reducing rumination (Chambers et al., 2008; Hofmann et al., 2010; Schanche et al., 2020). Recent literature describes rumination as a style of negative thinking that causes an individual to think about the consequences and implications of negative events (Schanche et al., 2020). It also includes persistently dwelling on problems and inadequacies and repetitively thinking of what has gone wrong in the hopes that it will be of help (Schanche et al., 2020).

A study conducted by Chambers et al. (2008) investigated the relationship between mindfulness and its effectiveness in reducing rumination in 20 novice meditators over a 10-day intensive mindfulness meditation retreat. The experimental design of the study was a “mixed

within-between subjects design with time (T1 and T2) being the within-subjects factor and group (meditators versus controls) as a between-subjects factor” (Chambers et al., 2008, p. 308).

Participants in the mindfulness group were tested twice prior to commencing the 10-day course and once again 7 to 10 days after its conclusion. Further, 20 participants were also recruited from waiting lists (control group) for the same 10-day courses. Through their findings, the experimental group displayed significantly reduced self-reported symptoms associated with depression and rumination and improvements in cognitive functions compared with the control group (Chambers et al., 2008).

Similarly, by carrying out a randomized wait list-controlled trial ($N = 68$), Schanche et al. (2020) derived similar conclusions that MBCT is a highly effective therapeutic modality in preventing relapse in patients who have had multiple episodes of major depressive disorder. The authors aimed to explore the effects of “MBCT on risk and protective factors for depressive relapse within the domains of cognition, emotion and self-relatedness” (Schanche et al., 2020, p. 1). The authors contended that such protective factors are not conceptually isolated mechanisms, and much of the literature that had been outlined prior to the study investigated each domain separately. Consequently, the authors aimed to test each domain in one study in order to have a better understanding of the processes involved in MBCT (Schanche et al., 2020).

During the study, participants were given the MBCT treatment, which took the form of eight two-hour weekly group sessions, an all-day silent retreat, and individual daily homework in between sessions (Schanche et al., 2020). The waitlist control group received treatment two weeks after the experimental group’s post-assessment phase. Based on their findings, Schanche et al. (2020) concluded that the intervention helped the participants reduce their rumination by having control over their tendency in focusing attention on thoughts that were repetitive and

related to negative feelings. In the emotional domain, participants displayed positive changes in regulating their emotions. The intervention also had a positive impact on the participants' ability to accept themselves, including their thoughts and maladaptive thinking behaviour (Schanche et al., 2020). Lastly, the authors stated that there was a reduction of major depressive disorder related symptoms, which is consistent with previous findings displayed in other literature (Kuyken et al., 2016; MacKenzie et al., 2018).

Stress Reduction

There exists a considerable body of literature to support the notion that engaging in mindfulness practices reduces stress (Baer, 2003; Carmody & Baer, 2009; Grossman et al., 2004; Hayes, 2004; Ledesma & Kumano, 2009; Mackenzie et al., 2005; Matchim & Armer, 2007; Ott et al., 2006). A study by Hofmann et al. (2010) conducted a meta-analysis of 39 different studies investigating the relationship between MBCT and stress. Results indicated that different types of mindfulness-based therapies are not diagnosis-specific but rather address various types of psychological disorders by “changing a range of emotional and evaluative dimensions that underlie general aspects of wellbeing” (Hofmann et al., 2010, p. 10). In other words, results indicate that mindfulness-based therapies is a valuable approach in altering and improving several clinical problems.

Such findings are consistent with evidence suggesting that mindfulness training effectively decreases anxiety and negative emotional reactivity (Chambers et al., 2008). Another study conducted by Farb et al. (2010) sought to investigate changes in emotion regulation by exploring changes through neuroimaging and mindfulness training. In their study, of a total of 36 participants, 16 were randomly assigned to a waitlisted control group. Participants engaged in an eight-week training program that focused on helping them cope with stress by engaging in

mindfulness training and were then compared with a control group. Participants were asked to watch sad films and rate their responses across domains of depression, anxiety, and psychopathology. Results indicated that individuals who were part of the experimental group and engaged in mindfulness training reported feeling significantly less depressed and anxious than the control group. In short, findings suggest that mindfulness-based training and therapies help individuals selectively choose the types of emotions in which they wish to experience (Farb et al., 2010).

Focus and Cognitive Flexibility

Moore and Malinowski (2009) examined how mindfulness meditation affects participants' ability to focus on crucial information. The study compared a group of 25 experienced meditators in mindfulness with 25 other participants that were naive in meditative practices as part of a control group. Using several scales to measure attention and concentration, participants were assessed in a quiet experimental situation but without undergoing a meditative state or state of mindfulness. Results demonstrated that the meditation group had significantly higher performance than non-meditators on all measures of attention and cognitive flexibility (Moore & Malinowski, 2009). Cognitive flexibility is the ability to adapt our thought patterns in response to environmental stimuli (Ionescu, 2012). These findings are corroborated by other studies that have found a link between mindfulness training and a participant's ability to adapt to stressful and negative situations (Cahn & Polich, 2006; Davidson et al., 2003).

Perceived Therapeutic Effects of ASMR

As mentioned previously, ASMR-based activities have been linked to improvements in chronic pain, stress, and even depression (Barratt & Davis, 2015). In Barratt and Davis' (2015) study, 475 individuals were asked to answer an online questionnaire on various questions

regarding the nature of ASMR, including demographics, types of triggers, how often they watch, mood, and chronic pain. In their research, 98% of individuals primarily used ASMR as a way to induce relaxation, which included helping them fall asleep (82%) and dealing with stress (70%). Participants also described ASMR as being a viable interventional tool in regulating stress and anxiety.

The vast majority of individuals (80%) emphasized ASMR as having a positive effect on their mood. Barratt and Davis (2015) also found a common link between ASMR and the reduction of chronic pain; 38% of participants suggested an improvement in their symptoms whereas 40% did not believe ASMR had an effect. Overall, the results of the study were overly positive suggesting ASMR to be a temporary relief for individuals who suffer from depression. Scores indicated that those who “suffer from moderate to severe depression reported significantly feeling the more uplifting effect of engaging in ASMR than those without depression” (Barratt & Davis, 2015, p. 11). The research also suggested ASMR to be similar to mindfulness since those who were able to engage in ASMR often focus on a specific task that induces positive emotions. This type of behaviour is very similar to common mindfulness practices, which have been shown to have a positive correlation in improving mood in depressed and non-depressed individuals (Lochte et al., 2018; Schanche et al., 2020).

Based on their findings, Barratt and Davis (2015) concluded that individuals who had higher ratings for their symptoms reported having the most benefit from engaging in ASMR. However, since ASMR research is still in its infancy, there is a lack of research to conclusively support ASMR as an effective therapeutic tool. Nevertheless, the findings show that many people who engage in such practice have a positive perception of this sensory phenomenon and are frequently seeking ways of experiencing it (del Campo & Kehle, 2016).

ASMR and Sleep

Sleep is a crucial component in maintaining cognitive and physical function throughout our everyday lives. Barratt and Davis (2015) noted that most individuals who engage in ASMR reported using ASMR media right before going to bed. ASMR is a perceptual phenomenon that is oftentimes used to induce sleep. The feeling of calmness and relaxation that ASMR induces can help overcome unhelpful thoughts and has been suggested as a helpful remedy in managing symptoms associated with insomnia (Barratt & Davis, 2015).

One study showed that “when we listen to acoustic beats of two tones in each ear simultaneously, a binaural beat is generated which induces brain signals at a specific desired frequency” (Lee et al., 2019, p. 1). However, this auditory stimulus has been found to be uncomfortable to listen and fall asleep to (Lee et al., 2019). Consequently, in order to overcome such a problem, Lee et al. (2019) developed a novel method to increase the quality of sleep through the use of ASMR-inducing triggers. In their study, 15 participants were recruited and underwent two sessions. In session 1, the researchers used three combined stimuli (e.g., decibel, exposure duration, and frequency) in combination with microphones set at the frequency in which the brain could engage in non-rapid eye movement coupled with ASMR triggers (e.g., tapping, whispering, crisp sounds) to induce sleep (Lee et al., 2019). In session 2, the effects of the optimally combined stimuli were then compared to only a binaural beat, sham condition, or only the ASMR trigger. Results showed that despite there being a waiting period of 15 to 20 minutes between each session, participants during session 2 were still able to retain the positive effects associated with session 1 that helped them fall asleep. Such findings indicate that binaural beats set at the frequency of non-rapid eye movement in combination with ASMR triggers provide an opportunity to increase an individual’s sleep quality.

Mindfulness Facets

Prior to mindfulness-based practices being deemed effective and ready to be integrated into a therapeutic format, considerable research had been carried out through the use of self-reported measures in order to determine the relationship between mindfulness facets, psychological symptoms, and a patient's wellbeing. Earlier developed measures of mindfulness included the Freiburg Mindfulness Inventory (Buchheld et al., 2001), the Mindful Attention Awareness Scale (Brown & Ryan, 2003), the Kentucky Inventory of Mindfulness Skills (Baer et al., 2006), the Cognitive and Affective Mindfulness Scale (Feldman et al., 2007), and the Mindfulness Questionnaire (Chadwick et al., 2008).

Despite the many questionnaires that researchers formulated, there was an ever-growing need to consolidate their findings. At the time, there appeared to be a lack of consensus among researchers about the content, structure, and how mindfulness should be conceptualized in each facet. Consequently, Baer et al. (2008) sought to integrate the questionnaires into the Five Facet Mindfulness Questionnaire (FFMQ), which has been widely used in current literature. Earlier research often represented trait mindfulness as a single factor that can be defined as having the awareness to be in the present moment (Brown & Ryan, 2003; Fredborg et al., 2018). However, recent research suggests that it is “often understood and measured as a multidimensional construct within contemporary literature” (Fredborg et al., 2018, p. 15).

The five traits include, observing (“I pay attention to the smell and aromas of things”), describing (“It is easy for me to put my thoughts into words to describe my feelings”), acting with awareness (“I lack attention and am prone to distractions and daydreaming”), nonjudging of inner experiences (“I often criticize myself for having inappropriate emotions”) and nonreactivity to inner experiences (“I can easily perceive my emotions without having them

control me”). These facets are then scored on a 5-point Likert scale ranging from 1 (*never or rarely true*) to 5 (*very often or often true*), with higher scores indicating an individual’s ability to experience mindfulness (Baer et al., 2006).

The ASMR Checklist

The ASMR checklist has paved the way for this phenomenon to become integrated as a therapeutic intervention. While studying personality factors associated with ASMR, Fredborg et al. (2017) created the checklist to delineate specific facets of ASMR and determine the types of stimuli that tend to elicit the most intense ASMR experiences. The checklist contained 16 different triggers that were previously studied in other studies, and participants were asked to rate their ASMR experiences on a 7-point Likert scale. The checklist was later on modified by del Campo (2019), with the intention of expanding the questionnaire to include questions that aimed to assess other “aspects of participants’ current and past experiences with ASMR” (p. 29). In the newly developed checklist, participants were also asked to differentiate their ASMR experience from other presumably similar sensations mentioned earlier, such as frisson, misophonia, synesthesia, and different aesthetic experiences.

Much like earlier scales that were used to assess mindfulness and its relationship with certain facets and psychological symptoms, the current ASMR checklist has been adapted and undergone changes like previous mindfulness questionnaires to include questions and descriptors that carefully analyze the response of participants as more research has been conducted. Earlier developed measures of mindfulness, such as the Mindful Attention Awareness Scale (Brown & Ryan, 2003), excluded references to moods, motivations, and attitudes, and instead focused solely on the happiness and wellbeing of participants that were being assessed. On the other hand, the FFMQ (Baer et al., 2008) focused on specific traits that one exhibits while engaging in

mindfulness. Based on current literature, it can be extrapolated that the primary reason why several questionnaires have been developed is due to the difficulty in measuring mindfulness as a state or a trait (Hill & Labbé, 2014). It is difficult to measure the state of when an individual engages in mindfulness since it is difficult to be fully aware of the present-moment awareness that one experiences while experiencing mindfulness when engaging in a questionnaire. Similarly, it is also difficult to measure mindfulness as a specific trait since it is hard to assign an arbitrary score to how an individual can enter a state of mindfulness trait (Hill & Labbé, 2014). As a result, due to the subjectivity that can be attributed to such a phenomenon, several questionnaires have been created. Currently, the FFMQ attempts to fill this gap by improving its validity and reliability by including statements that describe how one feels after engaging in mindfulness (Baer et al., 2008). Similarly, the ASMR checklist suffers from a similar problem since it is difficult to quantify a highly subjective experience through a survey by measuring the tingling responses that are often elicited during ASMR long after it has taken place.

In short, the present paper has outlined the similarities and differences between mindfulness and ASMR, including its therapeutic effects, common triggers, sensations, and measures used to analyze the experience. In the following sections, I will point out some of the problems encountered in the extant research, including gaps and limitations of the literature presented thus far, discuss implications for counselling, and directions for future research, and offer specific recommendations for counsellors in practice.

Implications for Counselling Psychology Practice

Few studies have investigated the use of ASMR in therapy. However, many have looked at ASMR as a sensory phenomenon. ASMR is an exciting new area of research, and there are many questions still left unanswered. As this new area of research gains greater prominence,

there is an opportunity for psychotherapists to educate their clients and professionals in the field about ASMR, including its benefits and use. The following sections are intended to share knowledge and information about how this newly discovered phenomenon can attain greater professional and academic credibility. I will outline the implications of ASMR when utilized in a therapeutic setting as an intervention and future steps that may be taken for ASMR to solidify itself as an intervention tool in a therapeutic setting.

Placebo Effects

The role of expectations is a powerful component in psychology. The placebo effect in psychology has been widely documented across several studies (Colloca & Benedetti, 2005; Greenwald et al., 1991; Kaptchuk & Miller, 2015; Pollo et al., 2001; Price et al., 2008; Gasparyan et al., 2013). The effect offers participants the ability to experience relief and sometimes even improvement regardless of psychological or pharmaceutical intervention based on their perception that the placebo has “actually” worked. Consequently, understanding the role of ASMR as a tool that is primarily used to induce relaxation is essential in order to understand if there is a “real” effect that can be attributed to the perceptual phenomenon itself rather than the belief that it will actually help in the treatment of pain, anxiety, stress, relaxation, or a psychological condition.

Since there is considerable media attention surrounding this newly discovered perceptual phenomenon, researchers like Cash et al. (2018) have become curious about the expectancy effects of ASMR and the placebo effects of this sensory experience. In their study, Cash et al. presented ASMR participants and naïve participants with videos that were not known to produce ASMR. Some users were told to expect the ASMR experience for the clips they were going to watch while another group was not. In the study, a total of 209 volunteers took part in the

experiment. Following up on the research conducted earlier by Barratt and Davis (2015), the researchers utilized whispering, personal attention, crisp sounds, slow movements, and repetitive movements as their main ASMR triggers.

Results indicate that participants who were unsure about the nature of ASMR were led to believe that the clips that were shown to them would inevitably produce effects associated with ASMR. On the other hand, ASMR participants who were well aware of the nature of ASMR seemed to be unaffected by the instructions that were given to them about the nature of the clip they were going to watch (Cash et al., 2018). In light of the reported findings, Cash et al. (2018) suggested that ASMR is an experience that is largely based on an individual's expectations of the nature of the perceptual phenomenon itself and any psychological improvement such as stress or depression is the result of placebo effects. However, the authors mention that it does not undermine the utility of ASMR in any way.

Since ASMR shares several similarities with mindfulness, such as its resemblance to guided meditation and being able to alleviate symptoms associated with stress, insomnia, and chronic pain (Barratt & Davis, 2015; Chiesa et al., 2010; del Campo & Kehle, 2016), it is possible that ASMR may indeed be a component of mindfulness itself. Moreover, evidence shows that mindfulness and placebo effects often rely on similar brain areas that are responsible for managing cognitive expectations (Chiesa et al., 2010; Finniss et al., 2010). Thus, since mindfulness meditation and placebo effects rely on similar areas of the brain, it is no surprise that ASMR, a perceptual phenomenon similar in many ways to mindfulness, would also show consistent findings and expectations.

Can ASMR Be Used in Therapy?

Given that placebo effects can influence the ASMR experience, does it truly mean that ASMR works? Historically, individuals who had success with alternative therapy for minor problems were often convinced of its efficacy and often attributed the level of success to the treatment itself (Tabish, 2008). Critics have argued that therapies that rely on placebo effects may be dangerous. Therapeutic practices that are not evidence-based are often overlooked and disregarded (Yates et al., 1993). Scientifically unsupported health practices may lead to individuals seeking “effective” treatments only to spend a considerable amount of money and time on treatment that may not lead to desirable results (Tabish, 2008).

To date, only two empirical studies have shown ASMR’s therapeutic properties to be an effective interventional strategy for short-term use. Poerio et al. (2018) identified an overall positive effect on mental and physical health. Additionally, as mentioned previously, Barratt and Davis (2015) identified lower levels of both chronic pain and depression after participants experienced ASMR. In their study, participants who had been clinically diagnosed with depression also reported improvements in mood after engaging in ASMR.

However, in a study conducted by Ditchburn and Bedwell (2019), they sought to investigate the therapeutic application of ASMR in long-term use. To provide a measure of the effectiveness with other therapeutic interventions, ASMR was compared to mindfulness and a control group. Mindfulness was primarily selected due to its similarities with ASMR (Barratt & Davis, 2015; Fredborg et al., 2018). The researchers hypothesized that ASMR would reduce symptoms associated with depression and anxiety among those who were able to experience ASMR; however, they expected mindfulness to be more effective due to its accessibility and supporting research as an effective intervention in the short-term use (Ditchburn & Bedwell, 2019).

Ditchburn and Bedwell (2019) collected the data using three separate questions before and after an eight-day intervention; the authors also made use of the ASMR checklist developed by Fredborg et al. (2017). Participants were asked to watch different YouTube videos focusing on different ASMR-inducing triggers and mindfulness-based themes. A sample of 110 participants was surveyed. Overall, results showed that ASMR was an ineffective long-term therapeutic intervention in the reduction of symptoms of depression and anxiety (Ditchburn & Bedwell, 2019).

Such findings contradict the research by Barratt and Davis (2015) in ASMR being an effective tool in reducing symptoms of chronic depression. However, Ditchburn and Bedwell (2019) propose that it may be possible that the participants were incapable of experiencing ASMR themselves in the first place. This finding is an important point of contention because, as Oxenham (2016) points out, there is a debate in current literature about the existence of a phenomenon known as *ASMR immunity* where the ability to experience ASMR is diminished overtime when it is overused. Ditchburn and Bedwell point out that such a phenomenon may have played a crucial role in their study, causing therapeutic effects related to ASMR to diminish as the study progressed.

On the other hand, individuals who were part of the mindfulness group who self-reported being able to experience ASMR were the ones who showed the most significant improvement in post-intervention assessment. Ditchburn and Bedwell (2019) argue that future research should continue to explore both the long and short-term therapeutic benefits of ASMR. However, an important point worth mentioning is that this study may indicate that it is the degree to which an individual is able to experience ASMR itself that may influence the therapeutic effects of ASMR in diminishing and managing psychological disorders (Ditchburn & Bedwell, 2019).

Subjective Experience

ASMR, by and large, is a subjective experience. In their ASMR checklist, Fredborg et al. (2017) included the category subjective sense of pleasure associated while experiencing ASMR, to measure the sensation of happiness while engaging in ASMR. The degree to which an individual is able to experience the “tingly” sensation that is induced while watching, hearing, or experiencing ASMR is an experience that is arguably different to each and every person. The tingly feeling is one that has been widely documented across several ASMR studies. However, in such studies, the tingly sensation that spreads through an individual’s body as they are experiencing ASMR has been commonly mistaken for other sensory phenomena such as frisson.

A study conducted by del Campo (2019) sought to circumvent such a problem by providing a narrower definition of ASMR based on pre-existing research. However, in comparing both frisson and ASMR, some of the respondents were unsure if the response in which they felt while watching videos associated with ASMR was one that was easily recognizable and distinguishable from other similar tingle-inducing phenomena. Despite showing videos that were widely popular and deemed particularly useful in inducing ASMR, some participants still remained unsure if the response they experienced was truly based on ASMR and not something they had experienced before (del Campo, 2019).

It may have been possible that such research suffered from similar flaws as the research by Ditchburn and Bedwell (2019). Participants who took part in Ditchburn and Bedwell’s study were unable to experience ASMR in the first place thus rendering them unable to experience the benefits associated with wellbeing, relaxation, and stress reduction. Such a point of contention serves as an implication for therapeutic practice. To date, there is no study to suggest that ASMR is an experience everyone innately has. Consequently, it may be possible that ASMR as a

therapeutic tool may not work for everyone. However, given the similarities to mindfulness, current research suggests that the benefits associated with ASMR are more effective with individuals who have undergone training (del Campo, 2019).

Differences and Similarities Between ASMR and Other Sensory Phenomena

Perhaps one of the most crucial components that cause complications in differentiating ASMR from other already pre-existing phenomena is the quality of the stimulus that induces a specific sensory sensation. For example, in the case of misophonia and ASMR, the two share similarities in which both can come from the same stimulus and yet elicit different responses. A study conducted by Rouw and Erfanian (2017) found that 49% of the participants who experienced misophonia were also prone to experiencing ASMR. Such findings further suggest the idea that despite an individual strongly disliking sounds associated with chewing or eating, it may be possible that the quality of such sounds may elicit an ASMR-related response instead of misophonia if the stimulus is presented in a different manner. This is an important point of contention; if ASMR is to have the potential to become an interventional approach, there needs to be a clear and distinct differentiation between triggers that induce ASMR and triggers that are more likely to induce misophonia and other sensory phenomena.

Expectation Effects

Another key limitation in many of the studies that have been conducted on ASMR to date is the expectation effects. In both the research conducted by Barratt and Davis (2015) and Poerio et al. (2018), there is the possibility that ASMR participants were able to experience changes because they had the expectation that there would be benefits associated with watching ASMR videos. In contrast, non-ASMR participants did not have any of those expectations, which is a clear limitation to counselling psychology practice since it may signify that the psychological

benefits associated with ASMR only take place due to a participant's expectation that they will experience psychological improvement.

Fundamental Next Steps for Research

Mindfulness practices have often been combined with evidence-based therapeutic approaches to fit the need of a particular patient. CBT has long been the gold standard for psychotherapy (David et al., 2018). CBT mechanisms of change and models have long been the most researched and arguably one of the most mainstream methods of interventional tools that are available for use in psychotherapy (David et al., 2018). For instance, for many years, countless studies have been conducted to evaluate the effectiveness of mindfulness-based practices despite being around for over 2500 years. However, mindfulness has frequently been used in combination with other already pre-existing therapeutic methods such as CBT to improve its therapeutic benefits (Schanche et al., 2020; Williams, 2008).

As a result, a recent study conducted by Schanche et al. (2020), through a randomized wait list-controlled trial of 68 participants, sought to determine the effectiveness of MBCT on risk and protective factors for depressive relapse. Such a study was one of the several trials that have been conducted to date to determine MBCT's effectiveness. Through their findings, the authors concluded that MBCT is an equally effective tool as CBT in preventing relapse of participants that experience a major depressive disorder. In their study, MBCT was also identified as being an effective therapeutic tool in helping participants control their own thoughts related to negative feelings. MBCT has also been shown to have a positive outlook in regulating emotions and increasing participants' ability to be supportive and acceptive towards themselves (Schanche et al., 2020). Conversely, ASMR has not undergone similar testing in a carefully controlled environment, and as a result, further research is warranted in this domain.

Question for the Profession of Counselling Psychology

There is always an ever-growing need for alternative therapeutic interventions that are able to alleviate psychological problems. As it has been outlined thus far, ASMR has been shown to be an effective tool in short-term scenarios in helping individuals alleviate symptoms associated with anxiety, depression, and insomnia and improve mood. However, it is possible for ASMR to attain greater therapeutic credibility if it is used alongside another therapeutic intervention.

To date, there is no literature to suggest that ASMR should be used with already pre-existing therapeutic interventions deemed evidence-based to fit the need of a particular patient in helping them with a particular problem. Similarly, there is also no research to suggest that the benefits of ASMR, when used as a standalone intervention, may be more beneficial than when used in conjunction with a therapeutic approach. However, given the efficacy of CBT as a highly effective therapeutic approach and the fact that ASMR research is still in its infancy, it is recommended for future research to fill this gap by analyzing the therapeutic effects of ASMR in conjunction with CBT.

Steps to Experience ASMR

In order to establish if an individual is able to experience ASMR, they may have to feel the tingling response to the external stimuli they are experiencing. However, prior to doing so, researchers should look to utilize the Five-Facet Mindfulness Questionnaire (FFMQ) developed by Baer et al. (2006) to determine if individuals have the ability to experience ASMR in the first place. Researchers should also look into utilizing the ASMR checklist developed by Fredborg et al. (2017) in order to determine the types of stimuli that tend to elicit the most intense ASMR experiences.

Future Research on Depression and ASMR

A study by Patel (2020) sought to create a “blueprint” to investigate the role of ASMR in aiding both depression and constipation. In this proposed study, the author suggests that ASMR may greatly benefit depression-related physiology and promote gut motility (Patel, 2020). Even though constipation and depression are addressed differently through pharmacological treatments, both share similar etiological properties (Israelyan et al., 2019). Patel contends that since reduced “5-hydroxytryptamine (5-HT) has been clinically accepted as a key symptom in depression” (p. 286), it has been hypothesized that “external factors effect [*sic*] 5-HT production within the body and may provide further knowledge about ASMR” (p. 294).

In this proposed study, Patel (2020) suggests future research should focus on creating a calming and soothing atmosphere where individuals are able to experience ASMR. Patel proposes that “research should focus on specific triggers, neural activity data, physiologic response and subjective participant input, [and, in doing so,] potential researchers can be able to determine the ideal form of ASMR to use for individuals pre-screened for constipation associated depression.” (p. 293). Depending on the research results, it may increase the credibility of ASMR as a complementary and unconventional technique in the use of clinical treatments.

ASMR Immunity

As it has been pointed out, current literature suggests a condition known as ASMR immunity (Ditchburn & Bedwell, 2019). Future research should focus on analyzing the degree to which individuals who are known to experience ASMR cease to feel the tingly or buzzing sensation. In addition, future research should be carried out in a carefully controlled environment to understand if the ASMR experience can be cultivated based on the environment. In doing so,

it will conclusively discern if the ASMR experience is one that can be cultivated even in individuals who have previously disclosed to have never experienced it before. Fredborg et al. (2018) suggest that mindfulness training should presumably increase ASMR intensity; future research should also continue exploring the possibilities in such a domain and continue analyzing the long and short-term effects of therapeutic properties ASMR has to offer.

So far, there has not been any research to date that has focused on creating an atmosphere where participants can engage in ASMR through live means. In other words, there has not been any research where an individual is actively carrying out a live session with another participant by using triggers such as whispering, crisp sounds, or tapping with the intention of inducing their ASMR. Such research would prove beneficial since many questions that have been left unanswered by previous studies would be explained if such research were to be carried out. In addition, such research would be helpful for counselling psychologists who wish to learn more about ASMR as they could attain training from an ASMRtist on how to conduct a live session.

Recommendations for Practice

Even though ASMR-based therapies do not currently exist, it may be possible to utilize ASMR in combination with other therapeutic approaches to target a specific problem, such as lack of sleep, anxiety, or depression. There is no research to date to suggest that ASMR when used in therapy will cause harm; however, therapists should be aware that further research is warranted in this domain, and the iatrogenic effects of ASMR have not been thoroughly researched. To date, it is recommended for ASMR to be utilized outside of therapy not as a replacement but as an additive coping strategy to deal with symptoms mentioned above. When faced with the idea that a patient would like to use ASMR as part of their treatment plan, the therapist should ask such a patient the reasoning behind such an idea, and, more importantly,

consider how it has worked for them in the past. Oftentimes, patients are dissatisfied with conventional methods since there is no one-size-fits-all type of therapeutic approach.

Research has shown that most individuals who engage in alternative therapy appear to do so not necessarily because they find the conventional methods ineffective but rather because they appear to be unhappy with them (Astin, 1998). Patients seek alternative methods primarily due to their need to attain personal control, dissatisfaction with conventional therapeutic approaches, or belief that conventional methods fail to align with their own worldview (Astin, 1998). According to Astin (1998), people seek alternative therapies because they may seem more compatible with their lifestyle, philosophy, or worldview.

Similarly, Kessler et al. (2001) found that the use of complementary therapies, such as massages, herbal medicine, hypnosis, spiritual healings, and others, is positively related to taking medications or engaging in evidence-based practices. The study showed that there was no difference between perceived helpfulness by using a complementary and alternative therapy alongside conventional means or using a conventional therapeutic approach by itself (Kessler et al., 2001). Such a study suggests that it is an individual's perception about the type of therapy that is being utilized that increases the likelihood of it being successful.

In their research, the authors found a positive correlation between using complementary types of therapy and the use of conventional therapy. The study showed that nine out of ten patients who experienced anxiety who also go to a psychiatrist often use alternative types of complementary therapy (Kessler et al., 2001). Kessler et al. (2001) suggest that in order to maximize the usefulness of any type of alternative and complementary therapy, it is crucial to open up communication about the adverse clinical effects. In the case of ASMR, the adverse

effects of the phenomenon have not been well studied; consequently, further research is warranted in this domain.

How Can ASMR Become a Treatment Complement?

For ASMR to attain credibility as a viable intervention tool, there needs to be a greater acceptance from practitioners about its use. In order for that to happen, it is crucial for research to be promoted and consistently carried out to move the skeptic mentality of people from its entertainment use to a trustworthy therapeutic tool. In its early history, mindfulness received a great deal of skepticism from critics when it was first introduced in therapy, and it took several years of research and articles being published for it to solidify itself as a complementary therapeutic tool (Harrington & Dunne, 2015). It is arguable that the same would have to take place in order for ASMR to gain therapeutic prominence.

Mindfulness Training

As research suggests, mindfulness training may increase an individual's likelihood to have positive results with ASMR (Fredborg et al., 2018). Perhaps one of the most crucial components of enabling an individual to experience ASMR is to train such individuals to experience the five facet mindfulness domains: observing, describing, acting, nonjudging, and nonreactivity. Consequently, in order to increase the likelihood of an individual having success in a therapeutic setting with ASMR in combination with a therapeutic approach such as CBT, for example, it may be crucial to teach them how to engage in ASMR in the first place.

ASMR as a complementary therapeutic intervention may be used with individuals who have shown improvements through mindfulness-based practices to cope with their psychological condition once additional research is completed. Consequently, with appropriate research, ASMR could eventually be prescribed as an additive coping intervention, and with the continued

research on this newly developed field of study, there may be potential for psychotherapists to attain training on it.

Benefits With Sleep

Hundreds of thousands of individuals who watch ASMR videos have reported anecdotally that such videos help them relax and fall asleep (Barratt & Davis, 2015; Poerio et al., 2018). A study by Poerio et al. (2018) found that ASMR helped in reducing heart rate (-3.41 beats per minute), and such results are comparable to clinical trials that used music-based stress reduction therapies in the treatment of cardiovascular disease. Such findings have been substantially greater than those observed in mindfulness-based interventions in treating anxiety in other studies (Campbell-Sills et al., 2006).

In the study by Poerio et al. (2018), the authors reported that the participants felt the elicitation of ASMR less intensely in the laboratory compared to their daily lives. Consequently, as Barratt and Davis (2015) note, in order to engage in ASMR, it is imperative for individuals to be in a quiet and relaxed environment to achieve the desired sensory sensation.

Aesthetic Experiences

A study by Geller (2018) reports that the effects of aesthetic experiences can improve a psychotherapist's ability to help patients bring about change. Geller contends that "all forms of sensory stimulation – scents, tastes, sounds, sights, and being touched – can serve as catalysts for aesthetic experiences and their contemplation" (p. 201). Geller argues that each person is attuned to a specific aesthetic response based on the external stimuli they experience, such as music, art, or dance. Geller suggests conducting psychotherapy creatively by considering either practical, scientific, or creative solutions to problems. According to Geller, "therapists are worthy of being thought of as creative if their technical choices honour the specificity of each new patient" (p.

202). As a result, it is suggested for psychotherapists to introduce ASMR to a new patient as part of a treatment plan to bring about change in order to honor the aesthetic experience of the person with whom they are working.

Dance Therapy

There are many aesthetic experiences that are utilized in therapy; one of them is dance movement therapy. Dance movement therapy is a therapeutic approach that aims to utilize movement to help support an individual's emotional, cognitive, social, and physical integration. Dance therapy has been deemed as an effective treatment of individuals who experience psychological problems and has been found to "improve a patients' mood, body image and self-esteem" (Strassel et al., 2011, p. 50).

Sensory Integration Therapy

Autism spectrum disorders are characterized by a combination of repetitive behaviours, deficits in social skills, and communication (American Psychiatric Association, 2013). Sensory integration therapy involves the combination of a child wearing a weighted vest, deep pressure, swinging, brushing, and other activities (Fazlıođlu & Baran, 2008). Fazlıođlu and Baran (2008) argue that it is through sensory experiences that children are able to develop a sense of connectedness with the world. Sensory integration therapy is believed to increase a child's threshold in being able to experience sensory-rich environments while reinforcing positive behaviours (Fazlıođlu & Baran, 2008; Lang et al., 2012). By incorporating ASMR in a treatment plan of a patient, the psychotherapist is not only honouring the aesthetic experience of the individual they are working with but also aiding in the development of their mental wellbeing.

Reflexive Self-Statement

The present paper has focused on the relationship between ASMR and mindfulness. While conducting my literature review on ASMR, I came across several other sensory phenomena; however, as noted, none of them seem to be as similar as mindfulness is to ASMR. Consequently, I decided that given mindfulness is a much more well-established concept, it would be beneficial to compare and contrast the two and think about how mindfulness became a therapeutic modality.

However, there is no specific “recipe” on how mindfulness gained mainstream popularity. Mindfulness meditation is a concept that has been thoroughly researched and documented for several decades since the 1930s when a Japanese teacher of Zen named Daisetz Suzuki spread his Buddhist practices to Western society. In his book *Introduction to Zen Buddhism*, Suzuki shares a practice that, much like psychotherapy at the time, used techniques aimed to free the unconscious mind from its biases and maladaptive thinking processes (as cited in Harrington & Dunne, 2015).

In the early 1950s, through dialogue between influential psychoanalysts, Suzuki presented an anti-authoritarian practice and philosophy that focused on a Buddhist practice that was not concerned with religion but instead offered the opportunity for individuals to engage in the transformative effects of experiencing the world as it really was. The Zen instructor insisted that the “essence of Buddhism really has nothing to do with morality” (as cited in Harrington & Dunne, 2015, p. 4), and as such, Suzuki aimed to spread a tradition that transcended the realms of ethics.

Over time, I learned that this therapeutic approach became considerably more prominent as more research was carried out. However, it was often associated with religious practices hence why its current level of prominence was only achieved in the 1990s when various new scales that

were designed to assess the meditative components of mindfulness in a quantitative manner became popular (Harrington & Dunne, 2015). As this took place, mindfulness began to be associated not with religious beliefs but rather an unusual and unconventional therapeutic intervention that may have the potential to be useful in various scenarios.

When the historical conditions of the period are taken into account, one can understand how mindfulness over time became popular. Often when a new therapeutic approach is suggested to treat psychological or even biological symptoms, it is bombarded with skepticism and distrust. However, such a level of hesitation does have its merits since it can cause severe problems rather than benefits if there is a lack of research. The present paper has focused on outlining the limitations and implications of current research on ASMR since it is a heavily understudied phenomenon that has not yet undergone rigorous testing through clinical trials to determine its therapeutic effectiveness.

Arguably one of the biggest reasons why mindfulness took such a considerable time to achieve its popularity level can be attributed to the lack of communication and lack of readily available information at the time. In the case of ASMR, it has been attaining greater mainstream traction through the internet. First instances of ASMR were reported in an online forum at steadyhealth.com in the late 2007s. In less than 10 years, its first research publication was released with the intention of sharing the “feel-good” feeling with the general public. Interestingly enough, it is a feeling that many of us have experienced before but have been unable to put it into words, have not paid enough attention to it, or have often confused it with other sensory phenomena. Nowadays, it is readily available on YouTube or any web searching engine, with several articles and videos that attempt to replicate this phenomenon.

Consequently, given the popularity of such a condition, it is no surprise that further research is warranted. If several people have found benefits in watching and immersing themselves in this experience, what says it is not effective? Much like mindfulness in its early beginnings, ASMR is still surrounded by a great deal of distrust and skepticism despite steps being taken to assess its effectiveness.

In today's age, individuals often have become so uninhibited with reality that they have lost touch with their own inner self. In Western society, we often spend countless hours on social media, and it can become a distractive tool in our everyday life leading us to become unaware of who we are as human beings and the present moment. Despite ASMR being a medium that is enjoyed online, it enables us to have an experience in which we are free from external biases and internal judgements while experiencing the tingly and soothing sensation it has to offer. However, even more importantly, it is an experience that goes beyond relaxation by grounding ourselves in who we are as individuals; it shifts the focus towards our emotions and sensory input so we are better equipped to face the challenges of our everyday lives.

Throughout this literature, I have learned that incorporating a therapeutic intervention in an already over-saturated "market" can be quite difficult. It is something that cannot be mechanically produced, but it is rather created spontaneously through the need and necessity of a novel way to deal with psychological problems. Prior to diving into the literature, I initially believed that ASMR could easily become a therapeutic approach. For me, it was easy to develop a biased perspective about this newly discovered phenomenon since much of its acclaim has been deemed beneficial across the internet—a platform that I use on a daily basis. However, upon taking a closer look into the current literature, I came to learn that, to no surprise, much of ASMR's problems are rooted in the fact that there is a substantial lack of research to support its

popularity. It is a phenomenon that has only recently begun being studied as a therapeutic approach, and its iatrogenic effects have not been thoroughly analyzed. As a result, I have discussed potential implications about the nature of ASMR, including literature discussing its limitations. Nevertheless, the topic of ASMR is one I will keep close attention to as potential research is continuously developed, and I will offer it as a recommendation to my clients as an additive coping strategy on an individual basis but not as a remedy or replacement to evidence-based therapeutic interventions.

Conclusion

In conclusion, this literature review has examined ASMR as a therapeutic tool, looked at steps for integrating ASMR into therapeutic practice, outlined future research, provided implications for counselling psychology and discussed the similarities and differences between mindfulness and ASMR. Most notably, both phenomena rely on the awareness of one's inner and outer perspective, including the emotions, sensations, and thoughts as they exist at any given time (Brown et al., 2007; Fredborg et al., 2018). In order to experience the benefits of both mindfulness and ASMR, research has shown that it is the quality devoted to our attention that dictates the outcome of the experience. ASMR is a phenomenon that is quite difficult to be explained and much better understood when experienced firsthand.

Much of the research to date has shown mindfulness as an effective therapeutic intervention across several domains, including rumination, stress, cognitive flexibility, and depression domains. Similarly, even though ASMR research is still in its infancy, it has shown potential in being an effective tool in alleviating symptoms of stress, anxiety, and chronic pain (Barratt & Davis, 2015).

However, in order for ASMR to achieve similar status as mindfulness of it being deemed “therapeutic” by the research community, it is crucial for further research to be carried out on its long and short-term effectiveness. Further research is needed to delineate ways in which the experience can be induced by the environment and common triggers that can create the experience. Future research should also consider common therapeutic approaches that could work alongside ASMR in order to increase the effectiveness of its therapeutic capacity. However, an important point of contention that has been discussed in the current literature is that the more an individual engages in ASMR practice, the less likely they are to feel the tingly response associated with the condition. As a result, future research should investigate if the benefits associated with ASMR are still maintained even if an individual cannot feel the elicited tingly response. In addition, due to similarities shared by ASMR, misophonia, synesthesia, and frisson, it is crucial for future research to assess if these phenomena are all part of the same “umbrella.” Continuing research should also discern if the differences that can be pinpointed are the quality of the attention devoted to each phenomenon or an experience that each individual innately has.

This literature review has explored the role of ASMR as a therapeutic tool in counselling psychology practice with a strong focus on providing limitations and recommendations for future research. ASMR is an exciting new area of research, and there are many questions still left unanswered. However, taken together with the literature review outlined thus far, it should hopefully dispel any skepticism associated with the phenomenon and provide the steps and questions in which future research should explore, including its flaws and applications for therapeutic practice.

References

- Afzal, U. (2018). *Mindfulness for children*. Octopus Publishing Group.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Aron, E. N. (2004). Revisiting Jung's concept of innate sensitiveness. *Journal of Analytical Psychology*, 49(3), 337–367. <https://doi.org/10.1111/j.1465-5922.2004.00465.x>
- Astin, J. A. (1998). Why patients use alternative medicine: Results of a national study. *JAMA*, 279(19), 1548–1553. <https://doi.org/10.1001/jama.279.19.1548>
- Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice*, 10(2), 125–143. <https://doi.org/10.1093/clipsy.bpg015>
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27–45. <https://doi.org/10.1177/1073191105283504>
- Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., Walsh, E., Duggan, D., & Williams, J. M. G. (2008). Construct validity of the Five Facet Mindfulness Questionnaire in meditating and nonmeditating samples. *Assessment*, 15(3), 329–342. <https://doi.org/10.1177/1073191107313003>
- Bakker, K., & Moulding, R. (2012). Sensory-processing sensitivity, dispositional mindfulness and negative psychological symptoms. *Personality and Individual Differences*, 53(3), 341–346. <https://doi.org/10.1016/j.paid.2012.04.006>
- Banissy, M. J., Jonas, C., & Kadosh, R. C. (2014). Synesthesia: An introduction. *Frontiers in Psychology*, 5, Article 1414. <https://doi.org/10.3389/fpsyg.2014.01414>

- Barnhofer, T., Crane, C., Hargus, E., Amarasinghe, M., Winder, R., & Williams, J. M. G. (2009). Mindfulness-based cognitive therapy as a treatment for chronic depression: A preliminary study. *Behaviour Research and Therapy*, *47*(5), 366–373.
<https://doi.org/10.1016/j.brat.2009.01.019>
- Baron-Cohen, S., Burt, L., Smith-Laittan, F., Harrison, J., & Bolton, P. (1996). Synaesthesia: Prevalence and familiarity. *Perception*, *25*(9), 1073–1079. <https://doi.org/10.1068/p251073>
- Barratt, E. L., & Davis, N. J. (2015). Autonomous sensory meridian response (ASMR): A flow-like mental state. *PeerJ*, *3*, Article e851. <https://doi.org/10.7717/peerj.851>
- Barratt, E. L., Spence, C., & Davis, N. J. (2017). Sensory determinants of the autonomous sensory meridian response (ASMR): Understanding the triggers. *PeerJ*, *5*, Article e3846.
<https://doi.org/10.7717/peerj.3846>
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice*, *11*(3), 230–241.
<https://doi.org/10.1093/clipsy/bph077>
- Black, D. S. (2011). A brief definition of mindfulness. *Mindfulness Research Guide*.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.362.6829&rep=rep1&type=pdf>
- Bond, F. W., & Bunce, D. (2003). The role of acceptance and job control in mental health, job satisfaction, and work performance. *Journal of Applied Psychology*, *88*(6), 1057–1067.
<https://doi.org/10.1037/0021-9010.88.6.1057>
- Brout, J. J., Edelstein, M., Erfanian, M., Mannino, M., Miller, L. J., Rouw, R., Kumar, S., & Rosenthal, M. Z. (2018). Investigating misophonia: A review of the empirical literature,

clinical implications, and a research agenda. *Frontiers in Neuroscience*, 12, Article 36.

<https://doi.org/10.3389/fnins.2018.00036>

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822–848.

<https://doi.org/10.1037/0022-3514.84.4.822>

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, 18(4), 211–237.

<https://doi.org/10.1080/10478400701598298>

Buchheld, N., Grossman, P., & Walach, H. (2001). Measuring mindfulness in insight meditation (Vipassana) and meditation-based psychotherapy: The development of the Freiburg Mindfulness Inventory (FMI). *Journal for Meditation and Meditation Research*, 1(1), 11–34.

Cahn, B. R., & Polich, J. (2006). Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychological Bulletin*, 132(2), 180–211. [https://doi.org/10.1037/0033-](https://doi.org/10.1037/0033-2909.132.2.180)

[2909.132.2.180](https://doi.org/10.1037/0033-2909.132.2.180)

Campbell-Sills, L., Barlow, D. H., Brown, T. A., & Hofmann, S. G. (2006). Effects of suppression and acceptance on emotional responses of individuals with anxiety and mood disorders. *Behaviour Research and Therapy*, 44(9), 1251–1263.

<https://doi.org/10.1016/j.brat.2005.10.001>

Carmody, J., & Baer, R. A. (2009). How long does a mindfulness-based stress reduction program need to be? A review of class contact hours and effect sizes for psychological distress.

Journal of Clinical Psychology, 65(6), 627–638. <https://doi.org/10.1002/jclp.20555>

Cash, D. K., Heisick, L. L., & Papesh, M. H. (2018). Expectancy effects in the autonomous sensory meridian response. *PeerJ*, 6, Article e5229. <https://doi.org/10.7717/peerj.5229>

- Chadwick, P., Hember, M., Symes, J., Peters, E., Kuipers, E., & Dagnan, D. (2008). Responding mindfully to unpleasant thoughts and images: Reliability and validity of the Southampton Mindfulness Questionnaire (SMQ). *British Journal of Clinical Psychology, 47*(4), 451–455. <https://doi.org/10.1348/014466508x314891>
- Chambers, R., Lo, B. C. Y., & Allen, N. B. (2008). The impact of intensive mindfulness training on attentional control, cognitive style, and affect. *Cognitive Therapy and Research, 32*, 303–322. <https://doi.org/10.1007/s10608-007-9119-0>
- Chan, M. F., Chan, E. A., & Mok, E. (2010). Effects of music on depression and sleep quality in elderly people: A randomised controlled trial. *Complementary Therapies in Medicine, 18*(3–4), 150–159. <https://doi.org/10.1016/j.ctim.2010.02.004>
- Chiesa, A. (2013). The difficulty of defining mindfulness: Current thought and critical issues. *Mindfulness, 4*(3), 255–268. <https://doi.org/10.1007/s12671-012-0123-4>
- Chiesa, A., Brambilla, P., & Serretti, A. (2010). Functional neural correlates of mindfulness meditations in comparison with psychotherapy, pharmacotherapy and placebo effect. Is there a link? *Acta Neuropsychiatrica, 22*(3), 104–117. <https://doi.org/10.1111/j.1601-5215.2010.00460.x>
- Colloca, L., & Benedetti, F. (2005). Placebos and painkillers: Is mind as real as matter? *Nature Reviews Neuroscience, 6*(7), 545–552. <https://doi.org/10.1038/nrn1705>
- Costa, P. T., Jr., & McCrae, R. R. (2008). The Revised NEO Personality Inventory (NEO-PI-R). In G. J. Boyle, G. Matthews, & D. H. Saklofske (Eds.), *The SAGE handbook of personality theory and assessment: Personality measurement and testing* (Vol. 2, pp. 179–198). Sage Publications. <https://doi.org/10.4135/9781849200479.n9>

Csikszentmihalyi, M. (1997). *Creativity: Flow and the psychology of discovery and invention*.

HarperCollins.

Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (Eds.). (1992). *Optimal experience: Psychological studies of flow in consciousness*. Cambridge University Press.

David, D., Cristea, I., & Hofmann, S. G. (2018). Why cognitive behavioral therapy is the current gold standard of psychotherapy. *Frontiers in Psychiatry*, 9, Article 4.

<https://doi.org/10.3389/fpsy.2018.00004>

Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F.,

Urbanowski, F., Harrington, A., Bonus, K., & Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65(4), 564–

570. <https://doi.org/10.1097/01.PSY.0000077505.67574.E3>

Day, S. (2005). Some demographic and socio-cultural aspects of synesthesia. In L. C. Robertson & N. Sagiv (Eds.), *Synesthesia: Perspectives from cognitive neuroscience* (pp. 11–33). Oxford University Press.

del Campo, M. A. (2019). *An examination of relationships between autonomous sensory meridian response (ASMR) and facets of mindfulness* (Publication No. 2351) [Doctoral dissertation, University of Connecticut]. UConn Library.

<https://opencommons.uconn.edu/dissertations/2351>

del Campo, M. A., & Kehle, T. J. (2016). Autonomous sensory meridian response (ASMR) and frisson: Mindfully induced sensory phenomena that promote happiness. *International Journal of School & Educational Psychology*, 4(2), 99–105.

<https://doi.org/10.1080/21683603.2016.1130582>

- Ditchburn, T. A., & Bedwell, S. A. (2019). Autonomous sensory meridian response: An ineffective long-term therapeutic intervention. *PsyPAG*, *110*, 19–24.
- Edelstein, M., Brang, D., Rouw, R., & Ramachandran, V. S. (2013). Misophonia: Physiological investigations and case descriptions. *Frontiers in Human Neuroscience*, *7*, Article 296. <https://doi.org/10.3389/fnhum.2013.00296>
- Fairyington, S. (2014, July 28). Rustle, tingle, relax: The compelling world of A.S.M.R. *The New York Times*. <https://well.blogs.nytimes.com/2014/07/28/rustle-tingle-relax-the-compelling-world-of-a-s-m-r/>
- Farb, N. A. S., Anderson, A. K., Mayberg, H., Bean, J., McKeon, D., & Segal, Z. V. (2010). Minding one's emotions: Mindfulness training alters the neural expression of sadness. *Emotion*, *10*(1), 25–33. <https://doi.org/10.1037/a0017151>
- Fazlioğlu, Y., & Baran, G. (2008). A sensory integration therapy program on sensory problems for children with autism. *Perceptual and Motor Skills*, *106*(2), 415–422. <https://doi.org/10.2466/pms.106.2.415-422>
- Feldman, G., Hayes, A., Kumar, S., Greeson, J., & Laurenceau, J.-P. (2007). Mindfulness and emotion regulation: The development and initial validation of the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). *Journal of Psychopathology and Behavioral Assessment*, *29*(3), Article 177. <https://doi.org/10.1007/s10862-006-9035-8>
- Finniss, D. G., Kaptchuk, T. J., Miller, F., & Benedetti, F. (2010). Biological, clinical, and ethical advances of placebo effects. *The Lancet*, *375*(9715), 686–695. [https://doi.org/10.1016/S0140-6736\(09\)61706-2](https://doi.org/10.1016/S0140-6736(09)61706-2)
- Fredborg, B. K., Clark, J. M., & Smith, S. D. (2018). Mindfulness and autonomous sensory meridian response (ASMR). *PeerJ*, *6*, Article e5414. <https://doi.org/10.7717/peerj.5414>

- Fredborg, B., Clark, J., & Smith, S. D. (2017). An examination of personality traits associated with autonomous sensory meridian response (ASMR). *Frontiers in Psychology*, 8, Article 247. <https://doi.org/10.3389/fpsyg.2017.00247>
- Gafni-Lachter, L., Kailkian, J., Korngold-Dvir, V., Dahan, G., & Ben-Sasson, A. (2021). The association between sensory traits and daily parenting challenges of typical mothers and their children. *British Journal of Occupational Therapy*. Advance online publication. <https://doi.org/10.1177/03080226211031800>
- Gasparyan, A. Y., Ayvazyan, L., Akazhanov, N. A., & Kitas, G. D. (2013). Conflicts of interest in biomedical publications: Considerations for authors, peer reviewers, and editors. *Croatian Medical Journal*, 54(6), 600–608. <https://doi.org/10.3325/cmj.2013.54.600>
- Geller, J. D. (2018). Introduction: The transformative powers of aesthetic experiences in psychotherapy. *Journal of Clinical Psychology*, 74(2), 200–207. <https://doi.org/10.1002/jclp.22582>
- Gethin, R. (2011). On some definitions of mindfulness. *Contemporary Buddhism*, 12(1), 263–279. <https://doi.org/10.1080/14639947.2011.564843>
- Greenwald, A. G., Spangenberg, E. R., Pratkanis, A. R., & Eskenazi, J. (1991). Double-blind tests of subliminal self-help audiotapes. *Psychological Science*, 2(2), 119–122. <https://doi.org/10.1111/j.1467-9280.1991.tb00112.x>
- Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research*, 57(1), 35–43. [https://doi.org/10.1016/S0022-3999\(03\)00573-7](https://doi.org/10.1016/S0022-3999(03)00573-7)
- Harrington, A., & Dunne, J. D. (2015). When mindfulness is therapy: Ethical qualms, historical perspectives. *American Psychologist*, 70(7), 621–631. <https://doi.org/10.1037/a0039460>

- Harrison, N. R., & Clark, D. P. A. (2016). The observing facet of trait mindfulness predicts frequency of aesthetic experiences evoked by the arts. *Mindfulness*, 7(4), 971–978. <https://doi.org/10.1007/s12671-016-0536-6>
- Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy*, 35(4), 639–665. [https://doi.org/10.1016/S0005-7894\(04\)80013-3](https://doi.org/10.1016/S0005-7894(04)80013-3)
- Hill, B. D., & Labbé, E. E. (2014). Measuring mindfulness. In N. N. Singh (Ed.), *Psychology of meditation* (pp. 11–27). Nova Science Publishers.
- Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 78(2), 169–183. <https://doi.org/10.1037/a0018555>
- Hubbard, E. M., & Ramachandran, V. S. (2005). Neurocognitive mechanisms of synesthesia. *Neuron*, 48(3), 509–520. <https://doi.org/10.1016/j.neuron.2005.10.012>
- Ionescu, T. (2012). Exploring the nature of cognitive flexibility. *New Ideas in Psychology*, 30(2), 190–200. <https://doi.org/10.1016/j.newideapsych.2011.11.001>
- Israelyan, N., Del Colle, A., Li, Z., Park, Y., Xing, A., Jacobsen, J. P. R., Luna, R. A., Jensen, D. D., Madra, M., Saurman, V., Rahim, R., Latorre, R., Law, K., Carson, W., Bunnett, N. W., Caron, M. G., & Margolis, K. G. (2019). Effects of serotonin and slow-release 5-hydroxytryptophan on gastrointestinal motility in a mouse model of depression. *Gastroenterology*, 157(2), 507–521. <https://doi.org/10.1053/j.gastro.2019.04.022>
- Janik McErlean, A. B., & Banissy, M. J. (2018). Increased misophonia in self-reported autonomous sensory meridian response. *PeerJ*, 6, Article e5351. <https://doi.org/10.7717/peerj.5351>

- Jerome, E. M., & Liss, M. (2005). Relationships between sensory processing style, adult attachment, and coping. *Personality and Individual Differences, 38*(6), 1341–1352.
<https://doi.org/10.1016/j.paid.2004.08.016>
- John, O. P., & Srivastava, S. (1999). The Big Five Trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138). Guilford Press.
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). Big five inventory. *Journal of Personality and Social Psychology, 61*(2), 228–238.
- Kaptchuk, T. J., & Miller, F. G. (2015). Placebo effects in medicine. *New England Journal of Medicine, 373*(1), 8–9. <https://doi.org/10.1056/NEJMp1504023>
- Keizer, A., Chang, T. H., O’Mahony, C. J., Schaap, N. S., & Stone, K. D. (2020). Individuals who experience autonomous sensory meridian response have higher levels of sensory suggestibility. *Perception, 49*(1), 113–116. <https://doi.org/10.1177/0301006619891913>
- Kessler, R. C., Soukup, J., Davis, R. B., Foster, D. F., Wilkey, S. A., Van Rompay, M. I., & Eisenberg, D. M. (2001). The use of complementary and alternative therapies to treat anxiety and depression in the United States. *The American Journal of Psychiatry, 158*(2), 289–294.
<https://doi.org/10.1176/appi.ajp.158.2.289>
- Kovacevich, A., & Huron, D. (2018). Two studies of autonomous sensory meridian response (ASMR): The relationship between ASMR and music-induced frisson. *Empirical Musicology Review, 13*(1–2), 39–63. <https://doi.org/10.18061/emr.v13i1-2.6012>
- Kuyken, W., Warren, F. C., Taylor, R. S., Whalley, B., Crane, C., Bondolfi, G., Hayes, R., Huijbers, M., Ma, H., Schweizer, S., Segal, Z., Speckens, A., Teasdale, J. D., Van Heeringen, K., Williams, M., Byford, S., Byng, R., & Dalgleish, T. (2016). Efficacy of mindfulness-based

cognitive therapy in prevention of depressive relapse: An individual patient data meta-analysis from randomized trials. *JAMA Psychiatry*, 73(6), 565–574.

<https://doi.org/10.1001/jamapsychiatry.2016.0076>

Lang, R., O'Reilly, M., Healy, O., Rispoli, M., Lydon, H., Streusand, W., Davis, T., Kang, S., Sigafos, J., Lancioni, G., Didden, R., & Giesbers, S. (2012). Sensory integration therapy for autism spectrum disorders: A systematic review. *Research in Autism Spectrum Disorders*, 6(3), 1004–1018.

<https://doi.org/10.1016/j.rasd.2012.01.006>

Lau, M. A., Bishop, S. R., Segal, Z. V., Buis, T., Anderson, N. D., Carlson, L., Shapiro, S., Carmody, J., Abbey, S., & Devins, G. (2006). The Toronto mindfulness scale: Development and validation. *Journal of Clinical Psychology*, 62(12), 1445-

1467. <https://doi.org/10.1002/jclp.20326>

Ledesma, D., & Kumano, H. (2009). Mindfulness-based stress reduction and cancer: A meta-analysis. *Psycho-Oncology*, 18(6), 571–579. <https://doi.org/10.1002/pon.1400>

Lee, M., Song, C.-B., Shin, G.-H., & Lee, S.-W. (2019). Possible effect of binaural beat combined with autonomous sensory meridian response for inducing sleep. *Frontiers in Human Neuroscience*, 13, Article 425. <https://doi.org/10.3389/fnhum.2019.00425>

Liss, M., Mailloux, J., & Erchull, M. J. (2008). The relationships between sensory processing sensitivity, alexithymia, autism, depression, and anxiety. *Personality and Individual Differences*, 45(3), 255–259. <https://doi.org/10.1016/j.paid.2008.04.009>

Liu, M., & Zhou, Q. (2019). A preliminary compilation of a digital video library on triggering autonomous sensory meridian response (ASMR): A trial among 807 Chinese college students. *Frontiers in Psychology*, 10, Article 2274.

<https://doi.org/10.3389/fpsyg.2019.02274>

- Lochte, B. C., Guillory, S. A., Richard, C. A. H., & Kelley, W. M. (2018). An fMRI investigation of the neural correlates underlying the autonomous sensory meridian response (ASMR). *BioImpacts*, 8(4), 295–304. <https://doi.org/10.15171/bi.2018.32>
- MacKenzie, M. B., Abbott, K. A., & Kocovski, N. L. (2018). Mindfulness-based cognitive therapy in patients with depression: Current perspectives. *Neuropsychiatric Disease and Treatment*, 14, 1599–1605. <https://doi.org/10.2147/ndt.s160761>
- Mackenzie, M. J., Carlson, L. E., & Speca, M. (2005). Mindfulness-based stress reduction (MBSR) in oncology. *Evidence-Based Integrative Medicine*, 2(3), 139–145. <https://doi.org/10.2165/01197065-200502030-00005>
- MacLean, K. A., Ferrer, E., Aichele, S. R., Bridwell, D. A., Zanesco, A. P., Jacobs, T. L., King, B. G., Rosenberg, E. L., Sahdra, B. K., Shaver, P. R., Wallace, B. A., Mangun, G. R., & Saron, C. D. (2010). Intensive meditation training improves perceptual discrimination and sustained attention. *Psychological Science*, 21(6), 829–839. <https://doi.org/10.1177/0956797610371339>
- Marsden, R. (2012, July 20). 'Maria spends 20 minutes folding towels': Why millions are mesmerised by ASMR videos. The Independent. <https://www.independent.co.uk/life-style/gadgets-and-tech/features/maria-spends-20-minutes-folding-towels-why-millions-are-mesmerised-asmr-videos-7956866.html>
- Matchim, Y., & Armer, J. M. (2007). Measuring the psychological impact of mindfulness meditation on health among patients with cancer: A literature review. *Oncology Nursing Forum*, 34(5), 1059–1066. <https://doi.org/10.1188/07.ONF.1059-1066>

- McGeoch, P. D., & Rouw, R. (2020). How everyday sounds can trigger strong emotions: ASMR, misophonia and the feeling of wellbeing. *BioEssays*, 42(12), Article 2000099. <https://doi.org/10.1002/bies.202000099>
- Monti, D. A., Peterson, C., Kunkel, E. J. S., Hauck, W. W., Pequignot, E., Rhodes, L., & Brainard, G. C. (2006). A randomized, controlled trial of mindfulness-based art therapy (MBAT) for women with cancer. *Psycho-Oncology*, 15(5), 363–373. <https://doi.org/10.1002/pon.988>
- Moore, A., & Malinowski, P. (2009). Meditation, mindfulness and cognitive flexibility. *Consciousness and Cognition*, 18(1), 176–186. <https://doi.org/10.1016/j.concog.2008.12.008>
- Nilsson, H., & Kazemi, A. (2016). Reconciling and thematizing definitions of mindfulness: The Big Five of mindfulness. *Review of General Psychology*, 20(2), 183–193. <https://doi.org/10.1037/gpr0000074>
- Ott, M. J., Norris, R. L., & Bauer-Wu, S. M. (2006). Mindfulness meditation for oncology patients: A discussion and critical review. *Integrative Cancer Therapies*, 5(2), 98–108. <https://doi.org/10.1177/1534735406288083>
- Oxenham, S. (2016, November 7). Video-triggered ‘brain orgasms’ are mysteriously disappearing. *New Scientist*. <https://www.newscientist.com/article/2111617-video-triggered-brain-orgasms-are-mysteriously-disappearing/>
- Patel, S. S. (2020). Novel method of supplementing current depression treatments: Using autonomous sensory meridian response-centered therapy to improve constipation-associated comorbidity of depression. *Proceedings of the National Conference on Undergraduate Research*, 286–295. <http://libjournals.unca.edu/ncur/wp-content/uploads/2020/12/3132-Patel-Shivam-FINAL.pdf>

- Poerio, G. L., Blakey, E., Hostler, T. J., & Veltri, T. (2018). More than a feeling: Autonomous sensory meridian response (ASMR) is characterized by reliable changes in affect and physiology. *PLOS ONE*, *13*(6), Article e0196645.
<https://doi.org/10.1371/journal.pone.0196645>
- Pollo, A., Amanzio, M., Arslanian, A., Casadio, C., Maggi, G., & Benedetti, F. (2001). Response expectancies in placebo analgesia and their clinical relevance. *Pain*, *93*(1), 77–84.
[https://doi.org/10.1016/s0304-3959\(01\)00296-2](https://doi.org/10.1016/s0304-3959(01)00296-2)
- Price, D. D., Finniss, D. G., & Benedetti, F. (2008). A comprehensive review of the placebo effect: Recent advances and current thought. *Annual Review of Psychology*, *59*, 565–590.
<https://doi.org/10.1146/annurev.psych.59.113006.095941>
- Rosch, E. (2007). More than mindfulness: When you have a tiger by the tail, let it eat you. *Psychological Inquiry*, *18*(4), 258–264. <https://doi.org/10.1080/10478400701598371>
- Rouw, R., & Erfanian, M. (2018). A large-scale study of misophonia. *Journal of Clinical Psychology*, *74*(3), 453–479. <https://doi.org/10.1002/jclp.22500>
- Schanche, E., Vøllestad, J., Visted, E., Svendsen, J. L., Osnes, B., Binder, P. E., Franer, P., & Sørensen, L. (2020). The effects of mindfulness-based cognitive therapy on risk and protective factors of depressive relapse – A randomized wait-list controlled trial. *BMC Psychology*, *8*(1), Article 57. <https://doi.org/10.1186/s40359-020-00417-1>
- Şengül-İnal, G., Kirimer-Aydinli, F., & Sümer, N. (2018). The role of attachment insecurity and Big Five traits on sensory processing sensitivity. *The Journal of Psychology*, *152*(7), 497–514.
<https://doi.org/10.1080/00223980.2018.1482255>

- Shapiro, S. L., Brown, K. W., Thoresen, C., & Plante, T. G. (2011). The moderation of mindfulness-based stress reduction effects by trait mindfulness: Results from a randomized controlled trial. *Journal of Clinical Psychology, 67*(3), 267–277. <https://doi.org/10.1002/jclp.20761>
- Smith, S. D., Fredborg, B. K., & Kornelsen, J. (2017). An examination of the default mode network in individuals with autonomous sensory meridian response (ASMR). *Social Neuroscience, 12*(4), 361–365. <https://doi.org/10.1080/17470919.2016.1188851>
- Strassel, J. K., Cherkin, D. C., Steuten, L., Sherman, K. J., & Vrijhoef, H. J. M. (2011). A systematic review of the evidence for the effectiveness of dance therapy. *Alternative Therapies in Health and Medicine, 17*(3), 50–59.
- Tabish, S. A. (2008). Complementary and alternative healthcare: Is it evidence-based? *International Journal of Health Sciences, 2*(1), V–IX.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068720/>
- Williams, J. M. G. (2008). Mindfulness, depression and modes of mind. *Cognitive Therapy and Research, 32*(6), 721–733. <https://doi.org/10.1007/s10608-008-9204-z>
- Yates, P. M., Beadle, G., Clavarino, A., Najman, J. M., Thomson, D., Williams, G., Kenny, L., Roberts, S., Mason, B., & Schlect, D. (1993). Patients with terminal cancer who use alternative therapies: Their beliefs and practices. *Sociology of Health & Illness, 15*(2), 199–216. <https://doi.org/10.1111/1467-9566.ep11346886>