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Influence of Autonomous Sensory Meridian Response on Relaxation States: An Experimental Study

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Abstract

Multiple studies have stated that autonomous sensory meridian response (ASMR) induces relaxation. ASMR is defined as a static tingling-like sensation across the scalp and back of the head, experienced by some people in response to specific audio and visual triggers like tapping, whispering, and slow hand movements. This study explores the relaxation states and the stress states on which ASMR videos have the highest impact. Data from 60 college students with a mean age of 22 years and a standard deviation of 1.12 were collected for this study, among which 30 were assigned to an experimental group and 30 were assigned to a control group single blindly. The relaxation states and stress states were measured using Smith Relaxation Scale Inventory (SRSI) for the pretest and Smith Relaxation Posttest Inventory (SRPI) for the posttest. The experimental group watched an ASMR video, and the control group watched a neutral video between the pretest and posttest. SPSS version 16 was used for data analysis. The result suggested a significant increase in sleepiness after watching the ASMR video (significant difference).

Keywords: autonomous sensory meridian response, relaxation, relaxation techniques, Psychological stress, sleepiness

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Introduction

Stress is an innate part of life, and no individual is spared from its deleterious consequences. According to some experts, around 75% of all medical disorders are caused by stress (Hughes et al., 1984). Stress is associated with physiological and psychological changes like increased heart and breathing rate, high blood pressure, tensed muscles and anger, anxiety, and irritability. Severe stress lasting for a long time can result in several physical and psychological health problems such as Type 2 diabetes (Kelly & Ismail, 2015), cardiovascular diseases (Dimsdale, 2008), anxiety, depression (Holahan et al., 2017), and skin disorders such as eczema (Anveden Berglind et al., 2011). Several relaxation techniques, including meditation, autogenic training, and guided imagery, are used to handle highly stressful situations (Smith, 2001).

A barrier in providing effective relaxation is that not everyone has the same effect for every relaxation technique. Instead, in some cases, certain relaxation can induce paradoxical reactions where the technique increases anxiety instead of reducing it (Heide & Borkovec, 1983). Individual differences and situational factors in the effectiveness of the relaxation techniques are factors that have profound implications. Techniques that induce relaxation for one person are not necessarily relaxing for others. For instance, some prefer meditation, while others prefer music. A study indicated that personality plays a vital role in relaxation, where introverts are more difficult to relax than extroverts (Sharma, 2011). Another study conducted using secondary data indicated that men are more likely to choose relaxation techniques that include concrete physical techniques like progressive muscle relaxation and autogenic training. At the same time, women prefer

techniques like meditation, imagery, and prayer (Smith, 2001). A comparative study with six relaxation techniques indicated that preference for different relaxation techniques among patients with respiratory diseases depends upon factors like familiarity, ease of implementation, and previous experience with the particular technique (Hyland et al., 2016). For more than a hundred thousand people, specific videos leave them in an engrossed, tranquilized, and mesmerized state (Garro, 2017). What made these videos famous was the shared experience of a pleasurable tingling sensation arising from the scalp, triggered from the particular visual and auditory events included in the particular recordings (Garro, 2017). In the early years, terms for these sensations ranged from *weird tingling sensation* to attention-induced brain orgasm (AIHO) or attention-induced observed euphoria. Autonomous sensory meridian response (ASMR) was popularized and coined by Jennifer Allen in 2010. According to Barratt and Davis (2015), ASMR is a sensory phenomenon that causes static, tingling sensations that originate in the scalp and often spread to the neck and sometimes other regions of the body and is elicited in response to certain visual or auditory stimuli. It is also defined as brain tingles or brain orgasms. Though the above mentioned is the most common path, studies indicate that it is not necessary that every individual experience ASMR in the same route (Barratt & Davis, 2015). There are currently over 13 million ASMR videos on YouTube, from medical examinations or brushing hair to whispering (University of Sheffield, 2018**).** While ASMR had this rapidly growing popularity among online communities, numerous reputed international media have reported the growing global attention and lack of scientific explanation this phenomenon receives.

According to Giulia Poerio from the Department of Psychology at the University of Sheffield, "lots of people report experiencing ASMR since childhood, and awareness of the sensation has risen dramatically over the past decade due to Internet sites such as YouTube and Reddit. However, ASMR has gone virtually unnoticed in scientific research, which is why we wanted to examine whether watching ASMR videos reliably produces feelings of relaxation and accompanying changes in the body —such as decreased heart rate." (University of Sheffield, 2018).

In the introductory study of ASMR by Barrett and Davis, it is stated that, though the triggers of ASMR can vary upon individual differences, it can be induced in susceptible individuals, and 98% of the participants agreed that they consider ASMR as an opportunity to bring relaxation (Barratt & Davis, 2015). Most of them also stated that ASMR acts as a stress buster and helps them induce sleep. They identified whispering, attention, crisp sounds, and slow movements as the most common ASMR triggers. The study also added that, though it is momentary, ASMR does alleviate symptoms of depression, anxiety, and chronic pain (Barratt & Davis, 2015). The tone of the most viewed ASMR videos is where close attention is given to the viewer. Others include acts with a similar focus directed towards a particular object rather than the viewer, such as the Ephemeral Rift (Barratt & Davis, 2015).

Though the replies were diverse, when people watching ASMR videos were asked about their motivating factor behind watching them, a large part of the population (98%) strongly agreed that ASMR primarily induces relaxation. 82% reported that ASMR helps them to sleep, and 70% used it as a stress buster. A small part of the population (5%) stated that ASMR media induced sexual stimulation, while the majority of participants (82%) disagreed with this statement. Moreover, 50% of the participants reported their improvement in mood even when the tingling sensations were absent, while 30% stated that achieving the tingling sensation was essential for mood enhancement (Barratt & Davis, 2015). Viewer preferences and motivations in the survey results of another study concluded that viewers watch ASMR videos to relax, fall asleep, and reduce stress and anxiety, which aligns with Barratt and Davis's study results (McErlean & Banissy, 2017).

There is evidence of increased skin conductance and decreased heart rate while watching ASMR videos, which altogether indicates that ASMR is a physiologically-rooted activating as well as calming experience inducing positive effect (calmness and excitement; Poerio et al., 2018). An eye-tracking study published in 2019 supports the above finding by stating that, along with skin conductance, ASMR videos lead to pupil dilation, which indicates arousal (Valtakari et al., 2019). The fact that conflicting self-reported emotions (i.e., excitation and relaxation) and physiology appeared concurrently while watching ASMR videos is indicative of the emotional complexity associated with ASMR. Complex interpersonal interactions often entail the combination of emotional elements that are typically considered to be polar opposites (Berrios et al., 2015; Lindquist & Barrett, 2008). The neurological studies done on ASMR have strengthened the

results of these studies. A study by Smith et al. (2017) to examine the default mode network (DMN) of ASMR-sensitive individuals found that the DMN network in ASMR-sensitive individuals showed significantly less connectivity than ASMR nonsensitive individuals. The study also added that ASMR-sensitive individuals have increased connectivity in areas associated with multiple resting networks (Smith et al., 2017). A more recent fMRI study conducted by the same researchers in 2019 stated that ASMR videos activate the anterior cingulate cortex, right paracentral lobule, precuneus, and bilateral thalamus, which are related to movement sensation, emotion, and attention. This finding points out that ASMR is not merely a sensory or emotional phenomenon; instead, it has sensory, motoric, attentional, and affective components associated with it (Smith et al., 2019). During ASMR, increased activation in nucleus accumbens (NAcc) was observed, which is associated with reward, insula and dorsal anterior cingulate cortex, which in turn are associated with emotional arousal, and secondary somatosensory cortex (Lochte et al., 2018).

An online exploratory study indicated that ASMR is related to mindfulness (Fredborg et al., 2018). Mindfulness is a Buddhist-based practice that highlights the acceptance of thoughts and experience without judgment, and this is used as a treatment for multiple psychological conditions like anxiety (Lancaster et al., 2016). While for ASMR, nonsensitive participants reported the videos as strange, odd, and even stressful. The study also stated that ASMR is consistent with Huron's Contrastive Valence Theory of music-induced frisson (Huron, 2006) and strongly resembles musical frisson (Kovacevich & Huron, 2019).

According to the origin theory of ASMR, an evolving theory proposed by Dr. Craig Richard, triggers that stimulate ASMR in individuals might stimulate the biological pathways of interpersonal relationships and affiliative behaviors like parent–infant, family member bonding, and friendship bonding. Both ASMR and these bonding behaviors share similar triggers such as comfort, relaxed, and secure feelings. Foundational biological explanations of bonding behaviors are already established, which indicates the stimulation of the release of endorphins, dopamine, oxytocin, and serotonin. It's assumed that both these behaviors and molecules can provide a good explanation of the whole phenomenon of ASMR (Young & Blansert, 2015).

The current study was designed to determine the impact of ASMR in 14 different relaxation states and three stress states using the Smith Relaxation States Inventory (SRSI) and Smith Relaxation Posttest Inventory (SRPI) based on ABC Relaxation theory by Jonathan C. Smith. Sleepiness, disengagement, physical relaxation, mental quiet, at ease, rested and refreshed, strength and awareness, joy, love and thankfulness, prayerfulness, childlike innocence, awe and wonder, mystery and timeless/infinite were the relaxation states; and somatic stress, worry, and negative emotions were the stress states that were explored in the study.

Until 2015, there was a lack of scientific evidence supporting ASMR, and most of the literature appears to be anecdotal in nature. Interest in ASMR has grown since then, leading to a need for more robust studies on the effectiveness of ASMR. This study's central hypothesis was identifying the influence of ASMR on relaxation states and stress states among the experimental group. The primary assumption around which the study was organized was there would be a considerable difference in the relaxation states and stress states on exposure to ASMR video. One of the first neuroscientific studies of ASMR indicates that ASMR-sensitive individuals have increased connectivity in areas associated with multiple resting networks (Smith et al., 2017). This indicates that ASMR might activate the blending of numerous resting-state networks. This experimental study was designed to indicate whether ASMR has a significant impact on the relaxation states.

Materials and Method

Study Design

This is a quantitative study with an experimental design. The study employed both between-group and within-group pretest and posttest experimental designs using an ASMR and a neutral video as an intervention in the experimental and control groups.

Study Duration

The study was conducted over a period of 1 year with a 4-month period of data collection.

Study Settings

The study is conducted among 60 college students from both graduation and postgraduation courses between 18 to 25 years, among which 43 were females and 17 were males. The convenient sampling method was used for acquiring the sample which was from different colleges across Kerala and Karnataka. Thirty among them were assigned to the

experimental group, and the remaining 30 were in the control group using a random assignment method. The experimental and control group experiment settings were uniform and conducted in a room during the daytime between 2pm and 4 pm. The room in which the study was conducted was silent with no external distractions.

Descriptive

The mean age and standard deviation of the participants were 22 and 1.12, respectively.

Screening

Individuals with a history of psychiatric, neurological, or neurosurgical illness and individuals with perceptual disturbances were excluded from the study. This study could not screen or distinguish ASMR-sensitive and nonsensitive participants, as there was no established measure or scale to do so, which is one of the study's limitations.

Study Materials

Tools used were Smith Relaxation States Inventory (SRSI) for pretest, Smith Relaxation Posttest Inventory (SRPI) for posttest (Smith, 2001), General Health Questionnaire (GHQ; GL Assessment, 2020) for screening and two videos of 16-min duration, among which one is an ASMR video and the other is a neutral video. ASMR video was selected from the YouTube channel *Gentle Whispering ASMR*, an ASMR channels with 2.02 million subscribers. This video was used with the permission of the content owner. While the neutral video was made from multiple small videos under a Creative Commons license, allowing users to use the content freely. Three experts validated both videos. Both SRSI and SRPI consist of 30 self-reporting items that assess 14 relaxation states and three stress states. Both questionnaires used a 4-point Likert scale. Thirty Items ask the participant to rate how they feel "right now" on a four-point Likert scale, from 1 (*not at all*) to 4 (*very much*). The videos were used with the content creators' permission and validated by three experts in psychology. GHQ was used for screening individuals with significant psychiatric conditions. All of the data was collected through Google Forms.

Study Procedure

After collecting written informed consent and basic demographic details, the participants were provided with the GHQ to determine whether they meet the inclusion criteria of the study. Once they were selected for the study, they were asked to complete the SRSI as a pretest. The experimental group was then instructed to watch the provided ASMR video, and the control group was instructed to watch the neutral video. For both the groups, videos were played on a laptop with headphones. Disturbed or complex sleep patterns were screened using GHQ. At posttest, the SRPI was administered to determine whether the videos create any significant difference between the pretest and posttest scores.

After receiving approval from the Institutional Review Board, the study was conducted, and all the participants were provided with written informed consent before the recruitment that explained the potential risks and benefits of the study. Participants were also informed of their right to withdraw at any time.

Results

Data were entered into a Microsoft Excel spreadsheet and analyzed using SPSS version 16. Since the data was not normally distributed, Wilcoxon Signed Rank Test was be used for within-group comparison and Mann-Whitney *U* test for between-group comparisons.

Table 1 and Table 2 show the mean and standard deviation of the experimental and control groups.

Table 1

Mean and SD of Experimental Group

Relaxation & Stress States		Mean	*SD*
Sleepiness	Pretest	3.50	1.33
	Posttest	5.40	1.96
Disengagement	Pretest	3.67	1.21
	Posttest	4.07	1.34
Physical Relaxation	Pretest	4.07	1.51
	Posttest	4.53	1.85
Mental Quiet	Pretest	4.23	1.17
	Posttest	4.63	1.49
At Ease & Peace	Pretest	6.83	1.58
	Posttest	7.13	1.87
Rested & Refreshed	Pretest	2.33	0.71
	Posttest	2.27	0.91
Strength & Awareness	Pretest	4.80	1.03
	Posttest	4.50	1.61
Joy	Pretest	5.13	0.97
	Posttest	4.33	1.60

Table 1
Mean and SD of Experimental Group

Relaxation & Stress States		Mean	*SD*
Love & Thankfulness	Pretest	5.13	0.94
	Posttest	4.33	1.60
Prayerfulness	Pretest	2.23	0.77
	Posttest	1.77	1.04
Childlike Innocence	Pretest	2.07	0.91
	Posttest	2.00	0.91
Awe & Wonder	Pretest	1.83	0.87
	Posttest	2.00	0.95
Mystery	Pretest	1.83	0.79
	Posttest	1.70	0.88
Timeless, Boundless, Infinite	Pretest	1.70	0.70
	Posttest	1.83	0.91
Somatic Stress	Pretest	4.67	1.52
	Posttest	4.43	1.65
Worry	Pretest	2.10	0.71
	Posttest	1.60	0.67
Negative Emotion	Pretest	5.37	1.73
	Posttest	4.63	1.63

Table 2
Mean and SD of Control Group

Relaxation & Stress States		Mean	*SD*
Sleepiness	Pretest	3.67	1.37
	Posttest	3.47	1.43
Disengagement	Pretest	3.30	1.29
	Posttest	4.20	1.85
Physical Relaxation	Pretest	4.00	1.62
	Posttest	4.43	1.50
Mental Quiet	Pretest	4.33	1.09
	Posttest	5.57	1.52
At Ease & Peace	Pretest	7.07	1.46
	Posttest	8.40	2.09
Rested & Refreshed	Pretest	2.30	0.70
	Posttest	2.63	0.89

Table 2
Mean and SD of Control Group

Relaxation & Stress States		Mean	*SD*
Strength & Awareness	Pretest	4.77	0.94
	Posttest	4.50	1.41
Joy	Pretest	5.13	0.94
	Posttest	5.43	1.45
Love & Thankfulness	Pretest	5.23	0.89
	Posttest	5.43	1.45
Prayerfulness	Pretest	2.23	0.73
	Posttest	2.30	1.06
Childlike Innocence	Pretest	2.03	0.85
	Posttest	2.37	1.07
Awe & Wonder	Pretest	2.00	0.79
	Posttest	2.43	1.19
Mystery	Pretest	2.03	0.85
	Posttest	2.13	0.89
Timeless, Boundless, Infinite	Pretest	1.90	0.84
	Posttest	2.37	1.13
Somatic Stress	Pretest	4.40	1.45
	Posttest	4.03	1.22
Worry	Pretest	2.00	0.69
	Posttest	1.47	0.68
Negative Emotion	Pretest	4.93	1.82
	Posttest	3.80	1.37

Table 3 results suggest that there is no significant difference between the scores of any relaxation states and stress states in the pretest of both the groups.

Table 3
Results of Mann-Whitney U Test for Pretest Scores of the Experimental and Control Groups at Baseline

Relaxation & Stress States	*U* Value
Sleepiness	418.5
Disengagement	365.5
Physical Relaxation	441.5
Mental Quiet	423.0

Table 3
Results of Mann-Whitney U Test for Pretest Scores of the Experimental and Control Groups at Baseline

Relaxation & Stress States	*U* Value
At Ease & Peace	410.5
Rested & Refreshed	437.0
Strength & Awareness	429.5
Joy	446.0
Love & Thankfulness	424.5
Prayerfulness	446.5
Childlike Innocence	439.5
Awe & Wonder	397.5
Mystery	391.0
Timeless, Boundless, Infinite	394.5
Somatic Stress	404.0
Worry	415.5
Negative Emotion	382.0

Table 4 results suggest a significant difference in three relaxation states' scores (sleepiness, joy, love and thankfulness) and one stress state (worry) in the experimental group's pre- and posttest.

Table 4
Wilcoxon Signed Rank Test of the Experimental Group

Relaxation & Stress States	*Z* Value
Sleepiness	−4.12**
Disengagement	−1.51
Physical Relaxation	−1.07
Mental Quiet	−1.11
At Ease & Peace	−0.94
Rested & Refreshed	−0.41
Strength & Awareness	−0.79
Joy	−2.26*
Love & Thankfulness	−2.40*
Prayerfulness	−1.72
Childlike Innocence	−0.28
Awe & Wonder	−0.91
Mystery	−0.82
Timeless, Boundless, Infinite	−0.66
Somatic Stress	−0.75
Worry	−2.69**
Negative Emotion	−1.68

*$p < .05$; ** $p < .01$

Table 5 results suggest a significant difference in three relaxation states' scores (disengagement, mental quiet, and at ease and peace) and two stress states (worry and negative emotion) the pre- and posttest of the control group.

Table 5
Results of Wilcoxon Signed Rank Test of Pretest and Posttest Scores of the Control Group

Relaxation & Stress States	*Z* Value
Sleepiness	−0.66
Disengagement	−2.29*
Physical Relaxation	−1.37
Mental Quiet	−3.23**
At Ease & Peace	−2.98**
Rested & Refreshed	−1.72
Strength & Awareness	−1.29
Joy	−0.76
Love & Thankfulness	−0.69
Prayerfulness	−0.45
Childlike Innocence	−1.69
Awe & Wonder	−1.82
Mystery	−0.55
Timeless, Boundless, Infinite	−1.86
Somatic Stress	−1.68
Worry	−2.99**
Negative Emotion	−2.95**

*$p < .05$; ** $p < .01$

Table 6 results suggest a significant difference between the scores of three relaxation states (sleepiness, mental quiet, and at ease and peace) and two stress states (worry and negative emotion) in the posttest of both the groups.

Table 6
Results of Mann-Whitney U test for Change Scores of the Experimental and the Control Group

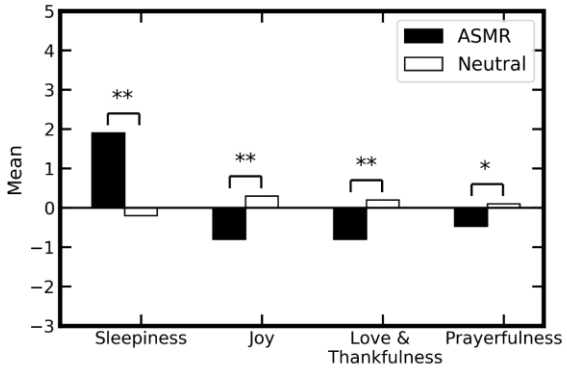
Relaxation & Stress States		Mean Ranks	*U* Value
Sleepiness	ASMR	39.43	182.0**
	Neutral	21.57	
Disengagement	ASMR	27.92	372.5
	Neutral	33.08	
Physical Relaxation	ASMR	30.65	445.5
	Neutral	30.35	
Mental Quiet	ASMR	26.73	337.0
	Neutral	34.27	
At Ease & Peace	ASMR	26.77	338.0
	Neutral	34.23	
Rested & Refreshed	ASMR	27.92	372.5
	Neutral	33.08	
Strength & Awareness	ASMR	30.48	449.5
	Neutral	30.52	
Joy	ASMR	24.87	281.0**
	Neutral	36.13	
Love & Thankfulness	ASMR	24.72	276.5**
	Neutral	36.28	
Prayerfulness	ASMR	25.40	297.0*
	Neutral	35.60	
Childlike Innocence	ASMR	26.97	344.0
	Neutral	34.03	
Awe & Wonder	ASMR	28.60	393.0
	Neutral	32.40	
Mystery	ASMR	28.27	383.0
	Neutral	32.73	
Timeless, Boundless, Infinite	ASMR	28.43	388.0
	Neutral	32.57	

Table 6
Results of Mann-Whitney U test for Change Scores of the Experimental and the Control Group

Relaxation & Stress States		Mean Ranks	*U* Value
Somatic Stress	ASMR	30.32	444.5
	Neutral	30.68	
Worry	ASMR	30.63	446.0
	Neutral	20.37	
Negative Emotion	ASMR	31.20	429.0
	Neutral	29.80	

*$p < .05$; ** $p < .01$

Figure 1. *Summary of the Differences of Relaxation States of the Experimental and Control Groups After Watching ASMR and Control Videos*.



Discussion

The current study aimed to determine whether there would be a considerable difference in the relaxation states and stress states on exposure to ASMR video. From the Table 3 results, it is clear that there is no significant difference between the relaxation states and stress states of the participants of both groups, which indicates that the sample population of both the group are similar.

The Table 4 results indicated that there is a significant difference in the scores of three relaxation states (sleepiness, joy, love and thankfulness) and one stress state (worry) in the pre- and posttest of the experimental group after watching the ASMR video. There is an increment in the relaxation state of sleepiness and a decrease in joy, love and thankfulness, while there is a decrement in a stress state of worry after watching the ASMR video. One possible reason might be that the brain neutralizes

the emotions rather than being overwhelmed by them, thereby reducing worry and increasing relaxation by being in the present moment.

Previous studies also strengthen this finding that ASMR videos induce relaxation, and thousands of people reported using them to sleep and deal with stress and anxiety (Barratt & Davis, 2015). For some people, the sensation of ASMR is also associated with a condition called misophonia, which can be defined as high sensitivity or aversion towards sound, especially human sounds like eating, coughing, and breathing. In such cases, ASMR videos are distressing, unpleasant, and uncomfortable (McErlean & Banissy, 2018). This could be the reason for the decrease in joy and love and thankfulness. Thus, these studies point towards the heterogeneity in the phenomenon of ASMR, which shows massively different and mixed reactions.

From Table 5, the increase in relaxation states of disengagement, mental quiet, at ease and peace and decrease in stress states of worry and negative emotion in individuals who watched the neutral video can be explained by the evidence from previous studies which indicated that visual imagery of nature increases relaxation, which turned out to be one of the limitations of the present study. The neutral video used in the present study was comprised of photographic pictures and short videos of nature. Research has shown that even exposure to photographic pictures of nature, compared to pictures of urban environments, has positive effects on emotional states and cognitive performance (Hartmann & Apaolaza-Ibáñez, 2010). The findings suggest that even short-term visits to nature areas have positive effects on perceived stress relief compared to build-up environments. There is also increasing interest in studying whether nature may help prevent illnesses mediated by psychological processes, such as stress, and curing stress-related diseases, such as burnout and depression. Research stretching over several decades has shown the overall preference for natural scenery consistently instead of artificial environments (Calvin et al., 1972). The attraction toward nature is widely considered a significant aspect of human behavior. Numerous studies have demonstrated humans' preference for environments with natural elements over those that are predominantly built (Cackowski & Nasar, 2003; Kaplan & Kaplan, 1989; Lamb et al., 1994).

The study results have shown a significant difference in four relaxation states (sleepiness, joy, love and thankfulness, and prayerfulness; Table 6). Graphical representation of this difference is plotted in Figure 1. This indicates that the changes that happened in these relaxation states of both groups are exclusively the result of video exposure. Participants in the experimental group who watched the ASMR video experienced a higher relaxation state of sleepiness, which affirms previous self-reported studies and indicates the advantage of ASMR videos over other videos to induce sleep and thereby relaxation. From this study, it can be stated that ASMR videos have their highest impact on sleepiness than any other relaxation states.

Aligning with the result of this study, a study by Barratt and Davis (2015) stated that 82% of its participants use ASMR videos to induce sleep, and 70% added that it helps to cope with stress. ASMR triggers combined with binaural beat have the advantages of inducing brainwave entrainment and psychological stability (Lee et al., 2019). The results of multiple studies, along with this study, strongly indicate that ASMR has a high impact in inducing sleep; it can help treat patients suffering from sleep disorders like insomnia. It is also helpful in reducing stress by reducing worries, indicating that it can be used as a relaxation technique.

One of the significant limitations of this study was the absence of a scale in measuring ASMR at the time of this study and a way to distinguish or screen ASMR-sensitive and nonsensitive individuals. Since ASMR is a relatively new phenomenon, a shortage in studies and transparency in the whole phenomenon makes it more challenging to interpret meanings and support the research findings. The study would also have to be replicated with a larger sample. Another limitation is that even though the neutral video was developed to produce no effect, there were significant changes in the control group's relaxation states and stress states after watching the neutral video. Another limitation is that since the study was wholly quantitative and used established standard scales, the participants were not screened for common beverages like coffee, which is also a stimulant.

Since this field of study is novel, multiple domains are still unexplored. This study stated the impact of ASMR in inducing sleep; one of the possible extensions of this study can be done on the EEG study of sleep induced by ASMR, and in the future more studies could be carried out to develop possible interventions using ASMR, especially to cope and deal with insomnia.

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Author Declaration

The authors declare no conflicts of interest with respect to the research, authorship, and publication of this article. There is no financial interest or benefit that has arisen from this research.

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