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Tattoos and Trauma: Are Tattoos Healing for Trauma?

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by

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Abstract

Prior research and literature reviews suggest that there is medicinal value in tattooing for the healing of trauma. However, tattooing is still a burgeoning topic in academic studies and still mostly taboo as a western societal practice, so there are gaps in qualitative and quantitative data that could further validate the healing benefits of tattoos for trauma. This literature review analyzed 30 peer reviewed articles that focus on "contemporary tattoo data," "indigenous traditions and practices," "tattoos and trauma," and other alternative healing such as "MDMA, psilocybin, EMDR" to establish a well-rounded investigation into tattoos as an alternative healing option. The results reveal that for thousands of years many non-western cultures have utilized tattooing for healing. Today there are growing numbers of individuals who seek alternative healing options, such as tattooing, for treatment resistant trauma symptoms. In conclusion, this review provides ample data that shows a positive and effective connection between tattoos and healing trauma.

Tattoos and Trauma: Are Tattoos Healing for Trauma?

Tattoos have been taboo for hundreds of years in Western culture, resulting in an arena of study that has been grossly overlooked, unless to research the correlations between tattoos and negative behaviors. The lack of considering tattoos in a positive light has left a gap in the academic literature as well as in acknowledging indigenous cultures that have viewed tattooing as a ritual and as a healing modality. That lapse in consideration has begun to shift, as now there is a rise in the academic literature that has established a realm of investigation into the connection between tattoos and healing traumas. This is an important shift because, what is currently known is that individuals are seeking out alternative therapies and healing (such as tattooing and other body modifications), over traditional Western therapies (Maxwell et al., 2019). The seeking out of alternative options are for a number of reasons such as systemic issues, socio-economic differences, language barriers, cultural differences, and treatment resistance conditions that have benefited from evidence-based alternative treatments (Maxwell et al., 2019). Simultaneously, indigenous cultures are revitalizing their tattooing practices to regain their culture and heal generational and historical trauma (IAAM, January 25, 2023). These traumas include but are not limited to, sexual abuse, child abuse, societal abuse, self-esteem, body autonomy, racism, traumatic events, deaths, PTSD, and war traumas (Crompton et al., 2020). This review of the evidenced-based literature will present our current understanding of the healing potential and clinical importance of tattoos. The current evidence will highlight the impact that tattoos may serve as a modern-day healing modality and contribute valuable insight into non-clinical and clinical practices. This information may serve as a guide for practitioners looking for additional tools to support and genuinely connect with clients (McCarty, 2019). In

the clinical arena, the relevance of tattoos as a healing modality could help to further expand on the discourse of the current interest in alternative therapies, such as MDMA and psilocybin, that may provide other effective, safe, accessible, culturally relevant, and considerate healing options for those who have been affected by trauma.

This literature review assesses current evidenced-based information focused on the investigation of tattoos and trauma and the potential of tattooing as a healing modality for trauma. In this review, I will focus on "contemporary tattoo data," "indigenous traditions and practices," "tattoos and trauma," and "MDMA, psilocybin, EMDR." The literature search criteria used 30 peer-reviewed articles and segments of published books. Utilizing PsyInfo psychology library and Google Scholar, the search was initially focused on the keywords tattoos, trauma, anxiety, depression, self-esteem, body modification, indigenous healing tattoos, indigenous tattoo practices, and ritual. After the initial search, the keywords broadened to include PTSD, Trans, Trans affirming tattoos, childhood trauma, generational trauma, gang tattoos, psilocybin studies, MDMA, and treatment-resistant in order to obtain a more diagnostic scope on the byproducts of trauma, as well as broadened cultural perspectives in the arena of tattoo research. All articles are peer-reviewed journal articles and predominantly empirical, with no date restrictions, as groundbreaking research in this area of study took place prior to 2000.

The rise in awareness regarding tattoos and healing, in tandem with cultural shifts in considerations of tattoos, is where this literature review endeavors to further the discourse of tattoos and healing. This is demonstrated by exploring what present-day literature offers in support and in contrast to tattoos and healing, what is lacking in present literature, and provides my analysis of what may be required to fill the gap in our present understanding. Addressing any potential gaps in this area of study could lead to what still needs to be learned, such as the effects

tattoos have on mental health, emotional health, and physical health. This reveals the impact on sociopolitical and cultural discourses surrounding the ritual, rite of passage, and healing perspectives of tattoos that have existed the world over. This literature review introduces data that supports the theory that tattooing offers medicinal benefits as an alternative healing option for trauma. Whatever is revealed in this literature review, aids in the œuvre of tattoo studies and helps further the universal search for understanding of tattoos as an alternative healing modality for trauma.

Literature Review

Contemporary Tattoo Data

Several researchers have provided important evidence based information highlighting the impacts of tattoos as a therapeutic modality. The initial research discusses the effects that gender and personality may have on acquiring tattoos and what society perceives. Geller et al. (2020) examined the effect of both gender and personality characteristics on heavy tattooing. This cross-sectional study design used the Physical Appearance Anxiety (PAA) scale and the Maternal Separation Conflict subscale from the Psychological Separation Inventory (Geller et al., 2020). Six hundred and six Jewish participants completed the surveys, 398 were women and 208 were men. All participants were between the ages of 18 to 36.

The results (Geller et al., 2020) revealed that the variable combination interactions of gender and maternal separation conflict and physical anxiety and maternal separation conflict affected the outcome of being heavily tattooed (Geller et al., 2020). For women when there was high separation conflict and high physical appearance anxiety it predicted more tattoos, but for men, more tattoos were predicted from low maternal separation conflict and low physical appearance anxiety (Geller et al., 2020). This result means that there are different personality

variables associated with heavy or light tattooing for women and men. The implications of this study are that maternal separation conflict is the link between gender and heavily tattooed and physical appearance anxiety and heavily tattooed. For women, when both maternal separation conflict and physical appearance anxiety are high it appeared that there were more tattoos, indicating that women may use tattoos as a means of regaining control over their identities and their bodies. Both identity and body image are variables in discovering oneself which can be affected by negative separation from one's mother due to social expectations of relationships between mothers and daughters to stay connected throughout life in a positive way. For men, society expects a healthy separation from one's mother in order to develop the self, thus if there is low maternal separation anxiety and low physical appearance anxiety that appears to predict more tattoos. For men, tattoos are potentially a way to reinforce their masculinity and ownership of one's self-identity.

Clinically, the implications suggest that as clinicians meet more and more tattooed people it is important to be familiar with the combinations of personality variables that may lead to someone being tattooed, in order to better support healing processes. The limitations of this study was that it was not longitudinal which makes any inferences of causality a challenge. This awareness of outside influences on the choice to be tattooed and how one may be perceived after being tattooed has been highlighted in other programs of research.

Some studies have explored how society views tattoos and why individual's acquire tattoos. According to Featherstone (1999) "Body modification is defined as the (semi-)permanent, deliberate alteration of the human body and embraces procedures such as tattooing and body piercing" (Wohlrab et al., 1999, p. 87 -95). As discussed in a literature review conducted by Wohlrab et al. (2007), the reason this research was established was to gain

a better understanding of the motivations for body modification, a practice that has become increasingly popular over the last decade. According to Wohlrab et al. (2007), tattooing practices were birthed in various cultures such as Asia, Africa, America, and Oceania. This research has revealed that tattoos existed across many citizens, cultures, and communities in Europe for over 5000 years. Throughout this long history, the purpose of tattoos and body modifications ranged from healing, rites of passage, ceremony and ritual, identification, honoring, beautification, and rebellion against mainstream culture. As demonstrated by Wohlrab et al. (2007) the research indicates there are ten major categories that inspire the pursuit of tattooing. These categories include:

> "Beauty, art, and fashion," "individuality," personal narratives," "physical endurance," "group affiliations and commitment," "resistance," "sexual motivations," and "no specific reasons." (Wohlrab et al., 2007, pp. 87-95)

This review indicates that the most prominent categories that motivate individuals to pursue tattoo art are beauty and self-embellishment. The remaining motivational factors appear to stem from personal values and personal, suggesting that adorning the body is a practice to honor the self and the individual form. The limitation of the study in this review is that there is no focus on the prevalence of a particular motivation, which may hold data as to the particular relevance of a motivation that may influence one's desire to acquire a tattoo. The environmental factors that motivate an individual to attain a tattoo can be seen from a complementary perspective.

From a contrasting viewpoint, some research studies have explored the different societal factors that can impact the motivations to get a tattoo. In addition to highlighting motivations,

this line of research explains why tattoos have been viewed negatively in certain communities. A study conducted by Zhao et al. (2021) focused on how the practice of smoking is embedded in tattooing and tattoo-associated contexts in Chinese Buddhist adolescents. The way these adolescents were measured was by focusing on 1322 Chinese Dai students, ranging in age from 15–19 years old. These volunteers were compiled from "middle schools in Xishuangbanna, Yunnan Province, China with some subgroups being examined in terms of associations with religiosity, spirituality, and traditionalist tattoo esthetics" (Zhao et al., 2021, p. 1). The participants were analyzed using surveys based on smoking, tattoo norms, and tattooing. The data collected resulted in the discovery of three subgroups, where in each subgroup a different pattern of smoking and tattooing was revealed. It appeared that tattoo norms and peer norms influenced those patterns and became markers for alerting them to the existence of those patterns. A sporadic percentage appeared within the subgroups of religiosity and spirituality, traditional tattooing and its culture were associated with the lowest percentage of connection between smoking and tattooing, and some adolescents showed greater use of smoking and having tattoos when there are higher levels of religion and spirituality. The results suggest that there is great complexity in the possible connection between smoking and tattooing. Additionally, it would seem that the results indicate that visual views of body-related data may contribute to the use of substances. This research reveals that further study is needed in the arena of religious Chinese populations to determine the accuracy of these findings. Though taking the stance that tattoos may indicate delinquent behavior, there is some suggestion in this literature that hints that positive body perception may have a connection to tattoos.

Zhoa et al. (2021) studied the connection between motivations and tattoos. which bridge to the more specific focus of self-esteem as a motivation for being tattooed. Singh & Tanwar

(2019) further explored this topic by investigating the role that self-esteem plays as a motivator for getting a tattoo. This was an exploratory study, which measured the relationship between personal self-esteem, an individual's global self-esteem, and body art within Indian society. The study compared individuals with and without tattoos, within the age range of 18 to 30 years of age, and with educational ranges of undergraduate to postgraduate. These two groups were further categorized through socioeconomic statuses of middle to the upper class with occupation statuses of working and student. Each group contained a total of 60 participants. The tools of measurement used for this study included a socio-demographic sheet, the Rosenberg Self-Esteem Scale (RSES), the State Self-Esteem Scale (SSES), and an open-ended questionnaire. An analysis of the data from the Rosenberg's Self-Esteem Scale by Morris Rosenberg revealed that there was a non-significant difference between the two groups. This result indicates that tattoos do not necessarily play a role in enhancing personal global self-esteem. The results of the sample on The State Self-Esteem Scale showed a significant difference in the means of the tattooed and non-tattooed samples, with the mean of the tattooed sample being higher than the mean of the non-tattooed sample. This result suggests that tattooed participants have higher self-esteem than that of non-tattooed participants. The findings from this study suggest that tattoos can enhance state self-esteem, temporarily aid individuals in feeling better about themselves, help them overcome emotional trauma, and empower them to lead an optimistic life. At the same time, these results also suggest that tattoos may not be the only factor that can lead to the enhancement of an individual's global self-esteem. As additional research indicates, there are several external factors that may contribute to the perceptions of self and tattoos.

There has been an effort among some scholars in this field to quantify societal perceptions of tattoos and tattooed people. Broussard et al. (2017) conducted a study to

investigate the stigma and negative attitudes towards tattooed people, with a focus on stigmas and attitudes towards women and men. Previous studies had failed to equally test both genders leaving a gap in the data. This study included a between-subjects and a within-subject experimental design . In the between-subject experimental design, "each image was rated by separate groups of participants with vs. without a tattoo" (Broussard et al., 2017, p. 18). During the within-subjects experimental design , "each participant rated one man and one woman with their original tattoo and the other man and woman with their tattoos digitally removed" (Broussard et al., 2017, p. 16). The results of this research revealed that, out of the two gender targets, women "were rated as stronger and more independent, but were rated more negatively on other character attributes than the same target images with the tattoos removed" (Broussard et al., 2017, p. 1). Though the popularity of tattoos has risen over the last decade, the research indicates that the stigmas associated with tattoos still exist today.

According to the results (Broussard et al., 2017), the implications of this study are far-reaching. One implication is that tattoo discrimination in hiring is legal and does occur in the United States and Europe. This discriminatory behavior is likely common across multiple contexts (corporate companies, school districts, military, and police departments) and may lead directly or indirectly to tattooed people not being hired or promoted. Corporate visual standards, including in the service industries, support confirmation bias that tattooed individuals cannot maintain steady work positions due to their undesirable attributes.

One limitation of this research (Broussard et al., 2017) is that the stimuli of tattooed and non-tattooed men and women used for the experiment are limited by two genders, and by being all white, making it difficult to know if gender variables other than tattooing may have affected respondents' ratings. Though this was addressed by using the between and within-participant

research design. Future research should attempt to use multiple genders and ethnicities in their stimuli. Another limitation was potentially social desirability bias, but this concern seemed to be waylaid as only a small number of participants in each group thought the study had nothing to do with tattoos. Lastly, future research should bring focus directly to tattoo content and location as size and context aided in further negative perceptions of tattooed individuals. As shown by this work, perceptions of tattooed individuals can have an effect including on one's sense of sovereignty, which the following study will introduce.

Previous research has shown how motivations, environments, and societal views can affect an individual. In this next article, the data focuses on the individual's choice in an attempt to interpret sovereignty within the choice to acquire a tattoo. The intention of the work by Jerrentrup (2022) was to determine if tattoos are a process that supports individuals gaining or losing control over the sovereignty of their bodies and identities, the perceptions of others, and if they could be a tool to shape memories. In this study "bodylore" was used to approach how people shape their bodies. Bodylore understands the body as narrative text, as a space of discourse where various identities are mapped together (Jerrentrup, 2022). Bodylore identifies three typical methods to approach body-related topics: the auto-ethnographic approach allows the individual to describe experiences and sensations (Jerrentrup, 2022). The second uses more traditional ethnological methods, such as (participant) observation (Jerrentrup, 2022). The third works with existing material, for example, photographic evidence, video footage, literature, and other secondary sources (Jerrentrup, 2022). For this study, the auto-ethnographic and observational approaches were the main tools used. These tools were used during different steps of the tattoo process to examine dispositif, the various institutional, physical, and administrative mechanisms and knowledge structures that enhance and maintain the exercise of power within

the social body (Foucault 1980). These steps included the planning and thinking process, searching for and choosing a tattooist, being tattooed, and living with the new identity layer of having a tattoo. To counteract the possibility that the auto-ethnographic approach may be biased and yield unrepresentative data, twenty interviews were conducted during tattoo sessions at a German tattoo studio or conducted face-to-face, over-the-phone, and chat interviews. To measure and analyze the data, the experiment used 7 dispositifs: exerting control, control over the body, control over perceived identity, control over memory and meaning, losing control, getting tattooed, and getting interpreted. Twelve women and eight men between the ages of 23 to 61 were interviewed. These participants were freelance, employed, or students and all participants were white.

The results revealed that concepts of gaining and losing control were ultimately based on the individual's interpretation of their tattoo experience (Foucault 1980). Through the aforementioned dispositifs, it was suggested that what may be perceived as losing control from an outside perspective could be replaced by another aspect of the tattoo process that returned control to the person being tattooed. Or that the outside perspective did not matter as much as the perceptions of the individual receiving that tattoo. This research indicates that a person may regain control of their body and identity through tattooing, a form of bodily transformation. As a result, this transformation can support the feeling of regained bodily autonomy because the experience itself can be revised and reinterpreted by the individual having the tattoo experience. The limitation is the qualitative nature of the work, which is valuable, but may contain several forms of bias and skewed data since there is no controllable environment in which to conduct the study. This body of research provides insights into contemporary perspectives of tattoo. However, there is a rich history and tradition of tattoo practices among indigenous cultures.

Indigenous Traditions and Practices

It is important to highlight and review the role that tattoos have played throughout history and among indigenous cultures around the world. Several studies provide a deeper understanding of how certain indigenous cultures and communities have not traditionally seen tattoos as taboo but as part of healing and tradition. Amores (2021) writes with the purpose to address the question of "What are the social dimensions involved in the technology of traditional tattooing among the Igorots of north Luzon, the Philippines" (Amores, 2021, p. 451)? This paper investigated the production of Batok (traditional tattoos) and what was needed to achieve the desired effectiveness of the chosen purpose and function from identification to ritual magic. Along with ritual and other taboo topics within this culture's tattooing, this research explores the tools or technologies of tattoos used in the creation of ritual tattoos.

The primary design for this research by Amores (2021) was anthropological fieldwork and observation, which started for the researcher in 2000 until the present. This fieldwork took place in Butbut village, a branch of the Kalinga culture located in the southern region of the Philippines. Further fieldwork was conducted in Agra, Benguet, Bontoc, and Ifugao to collect comparative data on the tattoo traditions of the Philippine Cordillera. Active fieldwork took place in 2008 - 2010 following the village's agricultural cycle. Interviews of the descendants and tattooed elders were conducted once the researcher located where traditional tattooists once were. In addition to fieldwork, archival and historical images of tattooed peoples were also collected from museums and archives located in the United States from the Dean Worcester photographic collection from the Museum of Anthropology at the University of Michigan. With these photos, a process known as photo-elicitation was utilized within the studied communities to ignite narratives that could lead to new tattoo data. A technical approach to rituals, based on

Galliot's process, was implemented as a way of determining the efficacy of rituals in the traditions of tattooing.

This article (Amores, 2021) organized the collected data into multiple categories. Data from the first category, ritual acts, reveals the interdependence of ritual in tattooing to elicit auspicious outcomes. Reading blood introduces the process of checking the blood of someone receiving a tattoo before the tattoo process begins. The category ritual prayers and chants speak to the tradition of chanting an epic known as the Ullalim by the Manbatok (tattooists) of the Kalinga as part of the tattoo process. Ritual offerings introduce the concepts of ritual sacrifice of chickens or pigs in addition to chanting to support the success of calling in auspiciousness and the intentions of the tattooed individuals. The technology of tattooing presents the data around the tools used for a tattoo to become "efficacious which includes the tattooing instruments, different pigments, and how these affect the visual form and efficacy of the tattoos" (Amores, 2021, p. 458). Tattooing instruments provided insight into some of the earliest tattoo tools of the Philippines found in Arku Cave such as tattoo chisels and combs made of bone or horn. A visual form of tattoos introduces how ritual acts and tattoo technology creates specific tattoo designs and that every design has a cultural reference understood by the community. Ink and color reveal the importance of ink and its color for the tattoo practitioner as the chosen "ink produces the shades of colors, thinness, and thickness of tattoos, and the overall appearance of tattoos on the skin" (Amores, 2021, p. 463). Black ink speaks to the tradition of using black and how it is created with charcoal. Mixing of ink takes the data further into the creation of blue and green inks. Green reveals the unique history of this color, produced by plant juice, being used by young children to practice tattooing through play. Blue shares data on the color being the "most prominent dye used in textile weaving, derived from the plant called tayum (Indigo tinctoria)"

(Amores, 2021, p. 466). The section on rotring ink and red modern ink brings in the layer of commercialized tattooing and inks. The efficacy of tattoos is described as being "achieved through the combination of various elements: The skill of the manbatok; the technology employed (tools and ink); and the beliefs and supernatural forces that are embedded in the ritual act of tattooing" (Amores, 2021, p. 467). Fertility and virility bring in therapeutic concepts of tattooing around fertility and virility. Visual imagery and talismans provide insight on tattoo designs that are understood and recognized as well as act as talismans. Passage to the afterlife reveals the importance of tattooing as part of the transition into the afterlife. The final category, revival, and appropriation, shares current realities on the revival of traditional tattoo practices and the appropriation of those practices.

Amores (2021) included several cultures from the Philippines including the Igorots, the Bontoc, the Ifugao, and the Kalinga. Each of these cultures had a tattoo tradition that was utilized for rites of passage, bodily adornments, talismans from malevolent forces, marks of bravery, visible markers of religious and political affiliations, and symbols of status or indicators of affluence, and medicinal needs (Amores, 2021).

The results of this review indicate that the significance of the traditional tattoos (batok) for the Igorots is not only in the symbolism, imagery, and aesthetics, "but also in the rituals performed, the taboos observed, and the technology employed in the production of tattoos" (Amores, 2021, p. 451). In the Igorot culture, social and material context is an intimately important factor of tattoos, so the Igorot must specify attributes: "Dark black (mangitit), solid lines (nalatak), and visible (napatak) for the Bontoc and the Kalinga, and light and fine-lined tattoos for the Ifugao" (Amores, 2021, pp. 469 - 470). Other social factors that are important for the tattoos to represent our "individual identity, indigenous affiliation, and connection with

ancestors" (Amores, 2021, p. 470). Another layer of the social importance of tattoos is the practices involved in producing tattoos as the process can affect the efficacy of the tattoos' purpose and function (Amores 2021)

The implications of this study (Amores 2021) suggest that tattoos are not merely tattoos, but designs that mark the skin with magical properties and intention through ritual, prayer, and chant. Ultimately tattoos created permanent visual encoding on the skin of symbolic wisdom and intended results to elicit social, aesthetic, actual, and religious transformation. Future research may consider comparing the insights gained from the population in this research with other populations across the globe. This modern research into ageless traditions indicates that there are foundational concepts of tattoo practices dotted throughout historical timelines and cultures.

Tattooing has been used as a healing practice for millennia. Krutak (2013) explored the use of tattooing throughout history and the many tools, techniques, and belief systems that cultures used to protect, control, and heal their bodies. Tattooing has been part of an ancient portfolio of healing techniques from lancing to acupuncture to herbalism, and other philosophical and practical approaches to well-being. Therapeutic tattooing, the practice of inserting colored pigment into the dermis layer of the skin, has used similar pigment material throughout many cultures suggesting that the pigment itself also held healing value.

Through archeological findings and research (Krutak, 2013), data was collected and analyzed on various cultures. That data was then compiled and compared to create a well-rounded picture of the multiple cultures that practiced therapeutic healing. Though each culture has its variations of tattoo healing, there are enough similarities that support a universal belief in the efficacy of therapeutic tattooing.

In this article (Krutak, 2013), the archeological findings were categorized into the categories of frozen in Ice: Ötzi, shaman vs. acupuncturist, mummies from South American sands, and pigment powder. The initial category introduced the famous mummy Ötzi that first introduced the world to the concept of tattooing as a healing modality. The second category presented the works of shamanism and acupuncturist within multiple cultures and how they compare and contrast to reveal the legitimacy of tattoo healing. The following category presented Peruvian and Chilean mummies that offer yet another layer of insight into the use of tattooing that brings to the discourse the concept of tattoos as status, identity, and spiritual practice that protects and spans from life into death. The fourth and final category presented data on the pigment used in the cultures presented, offering implications that the pigment itself is another layer of healing value to the process of therapeutic tattooing.

This research (Krutak, 2013) drew on several mummies and ongoing cultural practices from several international cultures. As previously mentioned one of the most well-known is the Neolithic “Iceman” over 5300 years old discovered in 1991 known as Ötzi. Other mummies that the research investigates are a 2500-year-old mummy from the Pazyryk culture of Siberia and the mummies of Qilakitsoq, Greenland, from the fifteenth century A.D. As well as mummies from Peru and Northern Chile, such as the mummies within the culture of Chimú. In Chiribaya Alta in southern Peru, a Tiwanaku mummy was discovered in 1990. The article introduces North American cultures such as the Indigenous Yupiget of St. Lawrence Island in Alaska, the Aleuts or Unangan of the Aleutian Archipelago of Alaska, the Atka Islanders of Alaska, the Indigenous California Tribes the Yuki and Miwok, and the Chippewa of the Great Lakes region of North America. The cultural sources also include the Ainu of Japan, Kalinga and other indigenous peoples of the Philippine Cordilleras, and Teetl’it Gwich’in of the Peel River Canada.

Each of the aforementioned sources of cultural data (Krutak, 2013) presented information that bridges cultural practices of therapeutic tattooing. The Ötzi mummy revealed one of the first pieces of evidence of tattoo healing when archaeologists discovered tattooed pigment over the areas of injuries and inflammation with joints. These dots and lines also matched the locations of Chinese acupuncture. The mummy of the Pazyryk culture of Siberia and the Indigenous Yupiget of St. Lawrence Island in Alaska both offer insight into the similarities between shamanistic practices and Chinese acupuncture. The Pazyryk and Yupiget cultures used tattooing for the spiritual practice of warding off human and animal spirits by placing markings on meridian lines, which are also utilized in acupuncture. Both cultures also utilized therapeutic tattooing to heal practical wellness issues. The Aleuts or Unangan of the Aleutian Archipelago of Alaska, the Ainu of Japan, Atka Islanders of Alaska, the Chippewa of the Great Lakes region of North America, Kalinga and other indigenous peoples of the Philippine Cordilleras, Teetl'it Gwich'in of the Peel River Canada, the mummies of Qilakitsoq of Greenland, a Tiwanaku mummy, and the Indigenous California Tribes the Yuki and Miwok all used a form of tattoo puncturing to relieve pain, chronic and muscular pain, inflammation, aching joints, rheumatism, sprains, dislocated joints, goitrous afflictions where each point tended to be associated with an acupuncture point. The mummies from Peru and Northern Chile, such as the mummies within the culture of Chimú suggested "that the body's integument was perceived as a kind of double-sided garment that concealed and projected personal power, prestige, and identity across the plane of the living and the dead" (Krutak, 2007, p. 185).

Within most of the cultures mentioned thus far in this review (Krutak, 2013), charcoal of some nature was used as an ingredient, if not the ingredient, that comprised tattoo pigments. Charcoal along with the juice of an immature genipap or jagua plant suggested that these organic

elements were used for their healing values. Charcoal was thought to remove toxins from the body, lower inflammation, and cleanse aspects. While genipap is used to “treat arthritis, venereal sores, corneal opacities, stomach ulcers, and uterine cancer in Amazonia” (Castner et al., 1998, p. 55; Morton, 1987, p. 443).

All this information (Krutak, 2013) implies that certain cultures across the globe believed in and practiced therapeutic tattooing (and some cultures continue practicing to this day) to help heal, whether internally or externally, certain ailments of the human body. These systems within tattoo healing use locations on the dermis of the skin that match the locations in acupuncture used to help the body heal and recover from injury and illness in an attempt to return balance, harmony, and homeostasis within one’s self and the world around them. In conclusion, the implications bring to light the possibility that there is a connection between tattoos, organs, joints, and acupuncture points.

The limitation of this research (Krutak, 2013), is that it is one of the least studied areas of tattooing, the ancient practice of therapeutic tattooing, which ultimately becomes a limitation. Future research could focus on this discourse with the intent of making it a more well-rounded arena of study. This study’s (Krutak, 2013) exploration provides insight into the varied cultures and their traditions and practices of tattoo healing. The research here adds to understanding tattoo healing practices of more specific cultures, as presented in the following work.

Long before the topic of tattoos as art or healing became popular, tattooing had a medicinal purpose during the Bronze Age. Shishlina et al. (2013) revealed that tattoos and body modification are part of centuries-old traditions and practices to decorate and modify the body for many reasons including healing. In an attempt to address 6 questions, this article researches

tattoos from the Bronze Age of the Caspian Sea maritime steppes and the Don Region. The questions are:

> "How was the tattoo placed on the body? What was the part of the body preferred for tattooing? What designs were selected for tattooing and what information did they contain? What was the social role played by tattoos? Were tattoos considered to be a method of treating diseases in Bronze Age medicine? Who performed tattoos and who wore tattoos." (Shishlina et al., 2013, p. 67).

This research (Shishlina et al., 2013) turned to articles and archeological findings to create a literary image of the Altai Pazyryk burial grounds, famous for their tattoos, dating back to the Early Iron Age (Shishlina et al., 2013). Well-preserved mummified remains of males and females found in the Pazyryk and Ukok burial grounds were covered with tattoos of various forms and designs (Shishlina et al., 2013). The information collected and studied was then cataloged and organized into the following sections: cultural context, tattoo-making procedures, tattooed parts of the body, tattoo designs, sympathetic magic, and who wore tattoos and who made tattoos.

The measures in this research (Shishlina et al., 2013) are that of the injuries to the mummies and the tattoos that appear to be directly connected to the healing of the injuries. This suggested the concepts of sympathetic magic (a form of healing within the Bronze Age that utilized animals, animal imagery, tattoos, clothing, and other non-normative techniques to heal) was practiced. An example would be tattoos found directly on areas of the body (such as a broken bone) that show evidence of pain and require assistance in healing. This includes areas such as the face, the skull, shins, and other ligaments. If a tattoo was located near an injury or some aspect of the body that showed sickness, this supported the concept of sympathetic magic.

If a tattoo was in an area with no injury, it supported the concept of tattoos as decoration and indicated a status role in society.

The research (Shishlina et al., 2013) focused on several well-preserved mummified remains of males and females found in the Pazyryk and Ukok burial grounds that are covered with tattoos of various forms and designs (Shishlina et al., 2013). As well as mummies from the Tashtyk population that lived even earlier, uncovered in the Oglak Tynsky burial ground that carry fragments of tattoos (Kyzlasov et. al., 2004, figs. 3-5). Tattooing has even been mentioned in the Bible as part of burial rites. Some of the specific mummies of the Altai Temrta III Burial Ground include Kurgan 2, Grave 1 (N. I. Shish-lina's excavations of 2006), which held the skeletal remains of an adult man of 45-55 years. Primorsky I Burial Ground, Kurgan 1, Grave 10 burial ground is located near the village of Primorsky, the Azov Sea, Rostov Oblast containing the remains of a man of some 30-35 years old and "a child of 5-7 years resting close to the man" (Shishlina et al., 2013, p. 68).

Shishlina et al. (2013) reveals that tattoos within the Rostov Oblast burial grounds help date these tattoo practices back to the Catacomb Culture around 2600 BC. The research also reveals that the ways of tattooing were primitive using sharp tools such as bone to prick or cut, to insert or rub pigment (such as soot and water or ochre) into the dermis layer of the skin. The results showed that tattoos ranged from elaborate designs of mythical creatures to simple abstract dots and lines, some used more for healing and some for decoration. All this data implies that tattoos may have indicated social standing within a community as they were found on men of the Catacomb culture. The research also implies that tattoos were part of sympathetic magic, used as one of the earliest forms of medical practice by those who had the skill to complete surgical treatments as well as tattoos.

Due to the reality that Steppe culture does not conserve the bodies it was difficult to determine if all markings were tattoos or nonpermanent designs made with pigment (Shishlina et al., 2013). Researchers believe that continuing to carefully examine skeletal remains before and after their excavation will help as it has been seen that when soft tissue decays (such as fingers, wrists, feet, shins, and skulls) it leaves behind the imprints of tattoos on the bones. Ancient traditions of healing through tattooing reveal that these concepts have long-standing foundations, which is further reflected in the specific data of arctic practices presented in the following article.

As the rise of ancient tattoo healing discourse continues in academic arenas, some research offers insight into the importance of multidisciplinary research. For example, Krutak (2018) introduces the potential within tattooed mummified skin to provide ethnographic evidence to help researchers better understand the practices of therapeutic tattooing. The research presents beliefs of cultural concepts of Circumpolar communities regarding diseases that emerge from spirits and entities. Analyzing ontological views, this paper argues the curative qualities of specific tattoo practices that could offer bio-archaeology and paleopathological studies a better understanding of human care. Lastly, it also "seeks to establish a framework and model for the contextualized interpretation of therapeutic tattoos" (Krutak, 2018, p. 9).

Focusing on the Arctic (Krutak, 2018) within the realm of Circumpolar communities, the research design collects data from an in-depth regional investigation of therapeutic tattooing across cultures. The Arctic provides a wealth of information due to the historical documentation of medicinal tattooing, which revealed it to be a common practice that spanned from Siberia to the East. Procedures of inquiry also utilized research from preserved mummified soft tissue and prehistoric anthropomorphic figures found in Greenland with evidence of medicinal tattooing.

The articles (Krutak, 2018) organized the data into the following categories. Marking

skins with medicine contained data that described cultural practices of healing tattoos from an ontological standpoint. Cultural chronology of tattooing at the crossroads of continents presented data regarding therapeutic tattoo practices and how they span many cultures. Joints, points, limbs, and souls explain the use of medicinal tattooing as a similar practice to that of acupuncture. Other curative tattoos provide information on similar but slightly different medical tattoo traditions. Lastly, tattooed guardians speak on the concepts of protective spirits being tattooed on humans as a form of protection from destructive spirits that create disease.

Many cultures have practiced a form of therapeutic tattooing (Krutak, 2018). Evidence of this is found from the ancient Egyptian mummies found at Deir el-Bahari to Arab tattooing in Iraq to the first prehistoric culture associated with St. Lawrence Island, the Okvik/Old Bering Sea (OBS), or the Punuk (a Siberian maritime culture). Also when around 1200 CE, the Punuk merged into a late prehistoric Eskimo culture called the Thule of northern Alaska, which today is "widely accepted as most likely ancestral to the peoples of West and East Greenland and the Canadian Arctic" (Krutak, 2018, p. 1), to St. Lawrence Island Yupiget ('The People'), the Siberian Chukchi, Ammassalimniut of East Greenland, Alutiiq Alaska, Ammassalimniut (East Greenlandic) and Canadian Inuit women, Thule Inuit mummies of Qilakitsoq, Chugach Eskimo women of Alaska, and Diomede Islander in Bering Strait. As the mummified skin of the Qilakitsoq revealed, the aforementioned cultures all had a form of medicinal tattooing associated with joints, acupuncture points, ocular issues, nervous system wellness, and spiritual dysfunctions.

The results of this paper (Krutak, 2018) presented data from studying mummified remains which revealed details about ancient practices of Arctic cultures. These results clarified that Arctic tattooing was not intended for tribal or family identification and was intended for

medicinal purposes, such as headaches, eye pain, spiritual protection, and illness. The implications of this paper (Krutak, 2018) suggest that the medicinal value of healing tattoos was that they affected metaphysical, physical, and psychosocial issues. The archaeological data research for this paper implies that these healing tattoo practices are ancient throughout antiquity and have been utilized for thousands of years to protect and heal the body from pragmatic physical ailments to internal spiritual issues. Examples within this document suggest that the human being was viewed as unstable and needed protection via control because of the permeable nature of skin which made it easy for harmful spirits to inhabit the body creating disease. This also suggests that a tattooed body reflects social-cultural constructs, norms, and boundaries that affect how one may travel through the world.

The previously mentioned implications (Krutak, 2018) bring to light the complexity of local healthcare management and systems which have been studied leaving a gap in ontological data regarding the connection between humans, spiritual realms and entities, tattoo traditions, and healing. For far too long, mummy studies have failed to engage with Indigenous practices of curative tattooing as a medical epistemology (Krutak, 2018). Future research should attempt to utilize other models to focus on the spiritual origins of past medicinal tattooing practices. This approach will help to better understand the traditional views of illnesses and their association with treatments that were entwined in the belief in the existence of the nonhuman realm and its beings as they were traditionally interpreted. As some of the aforementioned data suggests, tattoos had multiple uses and some of these uses were cross-cultural, which can be seen as the data of the next research navigates to the American Southeast.

Studies from North American indigenous communities reveal insights into a culture of tattooing that is far different from the white modern tattoo culture of North America today. The

purpose of work by Wallace (2013) was to give a considerable overview of Indigenous tattoo cultures of the American Southeast. The research design was based on prior investigatory writings of past authors. The intention behind this multidisciplinary, multicultural research is to support past researchers in their analysis, who sought to further the portfolio of indigenous tattoo knowledge, from symbolism to social context, to awareness of traditions.

The cultures being investigated in this research analysis (Wallace, 2013) are the indigenous cultures of the southeast, and defined geographically by those existing within the boundaries of the upper Mississippi and Ohio Rivers of the Midwest to the north, the Gulf of Mexico to the south, the Atlantic Ocean to the east, and by Texas and the plains to the west. However, archaeological tattoo findings on the periphery of the Southeast prompted researchers to include smaller cultures just outside the boundaries of the Southeast, because certain findings provided further important data on tattoo cultures of the Southeast and connected to the Southeast.

Overall the results of the analysis (Wallace, 2013) indicate that data spanning from the earliest to some current suggest indigenous Native American tattooing, was used for several purposes. These purposes were communication, connection, affiliation, and membership to one's community, as well as social hierarchy or standing. The analyzed data from this review were categorized in the following order: Fifteenth and Sixteenth Centuries, Seventeenth Century, Eighteenth Century, Nineteenth Century, and Twentieth Century. What this research creates is a foundation of background data on the anthropological and sociological histories of Indigenous Native American cultures, that future research may build from. It also Bridges a gap between scholars and indigenous Native American communities so that they may endeavor to honor and restore traditional practices of Tattooing. This would then enable academic and indigenous

communities in furthering the resurgence and understanding of these varied and impactful traditions of cultural communication and body adornment.

Because this research (Wallace, 2013) relies on historical data from multiple sources that build upon itself and is influenced by others, some limitations must be addressed and approached with awareness. much of the data is based on historical observation from European and euro in American explorers, observers, and researchers. From those lenses, the writings and data could have been exaggerated, poorly observed, and had a hyper focus on particular areas due to factors such as religion. Additionally, there was no separation between indigenous cultures, making the data further convoluted. From exploring the traditions and practices of multicultural medicinal tattoo uses, the following section will delve into tattoos and trauma via modern research and experiments.

Tattoos and Trauma

It is important to explicitly explore the connection between tattoos and potential medicinal uses for healing trauma. Crompton et al. (2020), analyzed narratives of tattooed trauma survivors through the lens of media. These stories were analyzed to understand why trauma survivors chose body modification in the form of tattooing and the meanings created through the tattoos and tattooing process. The approach taken to measure tattooing as a coping tool was a qualitative one. This required the collecting of data from publicly published articles of personal accounts of individual experiences of traumatic events and then the seeking out of tattoos concerning those events. According to this article, no previous studies were found that systematically collected data from public secondary sources of this focus across various types of trauma. These secondary sources such as a book chapter, newspaper articles, and a video that present survivors' accounts on tattooing after trauma were discovered via a Google search using

keywords such as tattoos, trauma, projects, trauma survivors, and also searching specific events such as “the terrorist attack at Bataclan, Hurricane Katrina, and 9–11” (Crompton et al., 2020, p.1245). The six data sources were: Healing Ink, A Pele da Flor, Yevgeniya Zakhar, Hurricane Katrina, the terrorist attack at Bataclan, and children and grandchildren of Holocaust survivors. This data was then analyzed to find shared patterns and create the foundational systematic research to build upon for future research to study the meanings of tattoos after trauma, as attributed by tattooed trauma survivors. The research led to the understanding that the studied narratives shared the commonality of tattoos as conduits for exposing invisible, unquantifiable, and hidden mental scars, regaining control of mind, body, and heart, creating intimate connections, and transformation. From the lens of personal stories and the narratives that tattoos carry as a form of healing, the next article supports a common thread of tattoos healing trauma through catharsis as revealed in the data.

Additional research has focused on the exploration of the cathartic nature of tattoos more specifically through the experience of sexual trauma. Maxwell et al. (2019) investigated the experience of getting tattooed and the effects of tattoos on women who consider themselves survivors of sexual trauma. Using the interpretive phenomenological analysis (IPA) design, researchers attempted to understand the personal and individual interpretations of participants' specific experiences with their motivations for obtaining a tattoo and the meaning of a tattoo as a recovery response to sexual abuse. The researchers also relied upon feminist methods and teachings to create an understanding environment and intuitive flow to the interview process to support female victims of sexual abuse. Through social media, 10 participants were located and volunteered, who self-identified as survivors of sexual violence and trauma (defined by their terms). These individuals had to have at least one tattoo, identify as a survivor of sexual trauma,

be at least 18 years old, and participate in a 30-minute telephone or in-person interview. The research revealed three main themes across the personal experiences of the participants that responded to the question of what are the effects and meaning of tattoos for trauma survivors. The themes that arose were control, reclamation, non-traditional (anti-normative) healing, and divergence from patriarchy. The study further revealed that traumatized populations are an underrepresented group in the research of tattoos. Additionally, the studies indicated that women are tending toward non-traditional therapies and medical support due to how entrenched the patriarchy is within the current medical system. This research has inspired further investigations into concepts of the self and tattoos through the lens of counseling.

Taking a more specific look at the topic of counseling, some research suggests the importance of developing a genuine connection between counselor and counseled through tattoos and their narratives. McCarty (2019) attempted to study people as individuals to support positive counseling relationships, by revealing the benefits that might exist when a counselor shows genuine interest in the individual. According to McCarty (2019), this genuine interest in the individual can be attained through genuine interest in the meaning of a client's tattoos, in a collaborative way to improve the counseling experience. Through narrative inquiry this study attempted to measure how an individual's tattoo narrative revealed, anchored, communicated, and supported a person's way of approaching life. To measure these, four research questions were developed as tools of measurement. Those questions are:

> "How does a participant's tattoo narratives reflect his or her view of self? How does a participant's tattoo narratives reflect his or her view of others? How does a participant's tattoo narratives reflect his or her view of the world? How does a participant's tattoo narratives reflect the way he or she approaches life?" (McCarty, 2019, p. 5).

A small sample of ten people were studied as McCarty (2019) believed this number supported a wealth of data while protecting themes from becoming too overwhelming and difficult to perceive. Participants were selected via flyers posted around the author's location, tattoo shops, and also through word of mouth. Participants had to be at least 18 years of age, were given 20 dollars for their willingness to volunteer, and had to identify one tattoo as being meaningful. A semi-structured, intuitive interview style was used to give the quantitative research processes a more natural flow. After data was collected there were 4 phases of analysis: listening and experiencing, transcribing and interpreting, scanning domains of experience, commonalities and differences—identifying themes, and connecting personal stories to systemic structures.

In the study conducted by McCarty (2019) twelve themes emerged across the 10 individual narratives and those themes revealed three key points: growth and identity, social interest, and therapeutic factors. From those factors, the analysis further revealed that tattoo narratives show views of self, others, the world, and personal approaches to life. Additionally, the study revealed that across participants and through narrative interaction, meaningless tattoos gained meaning. Concluding that counselor education programs should discuss tattoo narratives as part of their training, to build trust and gain a greater understanding of their client’s life narratives. All this comes together to suggest that when using tattoos in the context of counseling, tattoo meanings are important. The proceeding article diverges into the realm of tattooing in connection with negative behavior, to add complimenting data to the universal understanding of tattoos as healing conduits.

As tattoos continue to gain popularity and expand into the realms of artistic expression on an individual level, there is still inquiry into the connection between body modification and

risk-taking behaviors. The purpose of the research by Deschesnes et al. (2006) was to examine a general adolescent population to discover if a connection exists between being tattooed or pierced and if that decision was influenced by several risk-taking behaviors.

The research design used in this paper (Deschesnes et al., 2006) was a cross-sectional study collecting data from students via self-report surveys. There were many themes in the survey used, including questions on body medication and layers of adolescents' psychosocial experiences. Measurements used in this research were presented in the following formats. The ''Armstrong Tattoo Survey'' to determine if tattoos and piercings (and other modifications) were present among American college students. The following measure of global self-esteem utilized the Rosenberg scale, that assesses the value and sense of worth in adolescents. The next measure presented was suicide ideations, which were used to determine if any serious suicidal thoughts had arisen during the last 12 months. The following measure was substance use, "which was determined by asking participants if they had taken the following substances: tobacco, alcohol, cannabis, hallucinogens, and cocaine" (Deschesnes et al., 2006, p. 383). For delinquent behaviors, "the research used an abridged Leblanc, Mc Duff, and Fre´ chette's delinquency scale, to access the presence or absence of activities such as physical assault, different types of theft, vandalism, and sale of stolen goods committed in the 12 months before the study" (Deschesnes et al., 2006, p. 383). Gang affiliation was taken into consideration by inquiring of the volunteers if they were members of gangs and if the gangs participated in delinquent behaviors. The last measure used in this research was gambling-related problems, which were calculated using "an abridged version of SOGS-RA (South Oaks Gambling Screen—Revised for Adolescents), to identify the presence of behaviors or negative feelings associated with gambling activities in the 12 months before the study" (Deschesnes et al., 2006, p. 383).

For this article's research (Deschesnes et al., 2006, the population sample was a total of 2180 students between the ages of 12–18 years from 23 high schools in the Outaouais region The results of McCarty (2019) confirmed that externalized risk behaviors (for the female and male volunteers) such as school truancy and rave attendance, drug use, gang affiliation, illegal activities, and problem gambling, lead to the likelihood of adolescents being tattooed or pierced. This suggests that modifications to the body may indicate risk-taking behaviors in some adolescents, while also revealing that if the popularity and normalization of tattoos are valid, a high level of adolescents cannot be categorized under these findings.

Though the increase in normalization of tattoos as body decoration continues to rise over the last 10 years, this paper (Deschesnes et al., 2006) implies that the practice of body modification amongst teenagers is still interrelated with engaging in deviant behaviors. However, the implications suggest amongst the researchers of this study that there is a belief that tattoos and modifications are being chosen more and more by teenagers who do not engage in deviant behaviors. The implications also reveal that the connection between self-esteem and tattoos is mostly inconsistent from study to study. What the data implies for clinical settings, is that tattoos and piercings may be a way of clueing into the possibility that body modifications may be a warning sign for risky behaviors. With careful consideration, these potential markers could help clinical practitioners develop deeper connections with their patience and help in early teenage development.

One of the initial limitations (as is the case with many studies) (Deschesnes et al., 2006), is the population of teenagers used in this study does not include drop-outs and youth on the street who supposedly may be more likely to adopt deviant behavior, which may lead to tattoos and piercings. There is no differentiation between more severe forms of body modification

versus superficial ones in this study, which limits the data on whether or not that may affect the results of the research in a different direction. For future research, it may behoove studies to focus on whether or not individual and externalized behaviors may be connected with tattoos and body piercings. As the previous and present research indicates there may be connections between deviant behaviors and tattoos.

Much of the previously presented data takes into account social perspectives and circumstances and within this article birth order is introduced and the research revisits personality in connection to tattoos. Richards et al. (2022) wanted to determine the strength of the potential connection between birth order concerning getting a tattoo. ‘Born to rebel,’ introduced by Sulloway, suggests that those born later develop certain characteristics of personality that lead them away from the traditional status quo. Researchers of this study believed that later-borne would be more likely to have tattoos, which would be a result of more “openness, risk-taking, sensation-seeking, and need for uniqueness” (Richards et al., 2022, p.1).

Data was collected and measured through a series of questions asked of the participants. The studied population was asked to report their age, sex, ethnicity, country of residence, and sexual orientation, as well as respond to a single-item measure of perceived socioeconomic status (SES). Some of the questions presented to the participants were ‘Do you have any siblings?’ (Richards et al., 2022). Participants were then asked about being a twin or from hierarchical multiple births, age differences, and being raised in separate homes. Following the siblings' questions, each person was asked to share if their parents or themselves were tattooed. Personality characteristics of “openness, risk-taking, sensation seeking, and need for uniqueness” (Richards et al., 2022, p.1) were then measured by the Big Five Inventory, RT-18, Brief Sensation Seeking Scale-8, and Uniqueness Scale. During November and December of 2019 as

many participants were recruited, with the final population being 2,011. The 2,011 completed an online (Qualtrics) survey advertised via social media and to undergraduate psychology students at Newcastle University (English version) and Jagiellonian University (Polish version) (Richards et al., 2022, p. 2). Faculty of Medical Sciences Research Ethics Committee, Newcastle University gave ethical approval to the study.

As it turns out the results are unable to support the 'born to rebel hypothesis,' meaning the study revealed that order in birth had no bearing on having tattoos, though it did reveal the possibility that tattooed individuals had higher "risk-taking, sensation-seeking, and need for uniqueness" (Richards et al., 2022, p. 1).

One implication, that also arises in other articles (Richards et al., 2022), is that tattoos are no longer considered taboo or rebellious. This societal shift may aid in explaining why the 'born to rebel' was not supported. Furthermore, implications suggest a contradiction between participants' responses that tattoos are not a result of rebellion and large data numbers reporting tattoos being done during life changes described as rebellion, liking to take risks, and being a rebel. It was also implied, from the surveys answered in Polish, that having a blended family and being bisexual were more likely to be tattooed. As this research suggested, motivations for tattoos may range from birth factors, personality traits, and social constructs, which continues to connect to the following work that offers different motivations that may lead to acquiring a tattoo.

Motivations are a large variable within tattoo research, this includes the motivation of sexual abuse trauma as seen in Maxwell et al. (2019) and the following data. In this study, Stirn et al. (2011) state that body modification (BM) is the process to achieve long-lasting or permanent alterations to the body, with the most common form of BM becoming tattooing and

piercing. Based on a large population (participants with excessive BM and those with only a few BM) the purpose of this study was to investigate the main psychosocial information (such as motivation and sexual abuse) to discover characteristics of the population and analyze those who experienced sexual abuse, and what of that data might lead to frequently acquiring tattoos.

The research design for this study (Maxwell et al., 2019) was a quantitative 55-item questionnaire asking about socio-demographic and biographic variables, number and location of BMs, motivations for BMs, sexuality, attitudes toward the body, physical and sexual abuse, and personal experience associated with the practice of BMs. The survey for this study was placed in a German tattoo magazine, The Taetowiermagazin, in June of 2022. Participants were invited to fill out the anonymous questionnaire, send it to the research team, and then placed in a drawing where they could win a prize. Descriptive statistics (mean, standard deviation) were used in a preliminary step as a measure of this study. Followed by T-tests that were utilized to compare two independent samples (e.g., high BM users vs. low BM users and sexually abused subjects vs. not sexually abused subjects) concerning continuous variables (Stirn et al., 2011, p. 359). The chi-square test was used for non-parametric variables, with an alpha of 0.05 as the significance level. SPSS version 14.0 was then used for all the statistical analyses. Participants, 432 with an average age of 28 years old took part in the study. The average mean of BM for each participant was 9. Within the 432 population studied there was a two-gender-heavy percentage. Status and sexual preferences also had high levels of traditional views. Education and work questions revealed that most in the survey completed some form of education.

The results of this study (Maxwell et al., 2019) revealed that there was a difference between those respondents that had more than 10 BM and a history of sexual abuse versus those without the aforementioned features, taking into consideration individual motivations and

consequences of BM. The result data was broken down and categorized as, demographic characteristics, characteristics of subgroups, motivations for BM, and consequences of BM.

The implications (Maxwell et al., 2019) require taking a different view of the importance of BM than what is traditionally held. It would appear that getting BM is a personal choice ignited by internal causes. For those with sexual abuse, it was seen that BM was desired as a means to overcome traumatic experiences. Under that context, the act of getting tattooed or body-pierced may be understood as a re-enactment of their traumatic situations/re-victimizations (which often had ritual aspects) but now under circumstances that are controlled by the former victims, though the effects appeared to be short-lived (Stirn et al., 2011, p. 363). This data also embraces those who may not have had traumatic experiences but still desire autonomy and control over their lives and bodies, as well as express self-awareness and identity. However, this does not suggest that participants wanted to "stick out," in fact, most were interested in still being integrated into their environments. Implications also suggested that more than 50% of respondents felt or feared an addiction or obsession with getting BM, which may denote that BM-related behavior is not entirely external or internal compulsion free, even to get BM being positive. Implications between high BM users and lower BM users suggested that higher BM users experienced other consequences and had other motivations more so than lower BM users. The study also implied that as tattoos and other BMs become more common, they appear to be another convenient means to either release psychopathological inclinations or overcome psychological traumas. The implications culminate in offering insight into clinical settings. Within clinical settings, it would behoove clinicians to have questions regarding BM to determine the difference between trivial and non-trivial BM. This would then help to reveal the motivations behind BM as a means of understanding the patience possible stresses and traumatic

events.

The initial limitation of this study (Maxwell et al., 2019) is within the population, being that placing the questionnaire within a specific tattoo magazine excludes populations such as detainees, homeless people, drug-addicted people, those whose tattoos have meaning in a work or social context, and any other persons who would not buy the magazine. Though within the context of BM in relation to sexual abuse, the data are generalizable to a certain degree but should be retested with other populations that practice BM. Due to the intimate nature of the questionnaire, it is not validated at this point. There was the assumption that those with BM would be open to discussing sexual abuse, but the survey maintained a surface-level quality to those questions. Future research may benefit from obtaining more detail and specificity to validate the data and make it generalizable to larger populations. As this data begins to reveal the more specific connections between tattoos and sexual abuse, it bridges with the following work that focuses on tattoos in connection with another more specific trauma, eating disorders.

Moving into the realm of viewing tattooing through a self-injury lens, presents the view in which tattoos as self-injury is an alternative option to attain relief. The purpose of Iannacconeto et al. (2013) was to examine self-injury and body modification (BM) regarding eating disorders (ED), taking into account the severity of the different diagnoses of ED. This study aimed to address the following considerations:

> "a) to investigate the prevalence of self-injurious behaviors (SIB) and body modifications (BM) in a sample of patients with eating disorders; b) to determine if BM correlates with the presence of SIB; c) to analyze differences between patients who report SIB and/or BM concerning impulsivity, drive for thinness, self-esteem, body dissatisfaction, somatic symptoms, anxiety, social dysfunction and depression, abuse/violence histories, sexual

> activity, justice problems, and substance use; and d) to investigate, in the "not full-blown diagnosis," the influences of diagnosis (anorexia, bulimia, binge eating disorders) and the influences syndrome severity (full, partial, subclinical) on the variables under study." (Iannaccone et al., 2013, p. 132).

The research design (Iannaccone et al. 2013) was qualitative and utilized within-group and between-group measuring systems. Each participant was asked to complete: "an ad hoc socio-demographic schedule, Drive for Thinness and Impulsivity subscales of the Eating Disorders Inventory-2, the Eating Disorders Inventory-2 Symptom Checklist, the Rosenberg Self-Esteem Scale, the Body Uneasiness Test, the General Health Questionnaire" (Iannaccone et al., 2013, p. 132). In addition to a socio-demographic schedule, participants had questions about abuse and violence history. Accompanying those questions, respondents had questions about performing BM and self-injury, such as tattoos and piercing, cutting, and burning. Questions regarding future possibilities of altering one's body ranging from cosmetically to implants were asked. Once the data was collected it was then analyzed via one-way analysis of variance (ANOVA) for continuous variables with Chi-square tests used for nominal variables. Proceeding those tests was a Bonferroni post hoc tests and Phi correlations calculations. The participant population studied totaled 65 female inpatients and outpatients who were already referred to specialized ED treatment units. The age range of participants was 15-25 and 26-55. Within the population, 50.9% had at least one form of self-injury, with another 50.9% reporting one BM of a tattoo, piercing, or both.

Study results (Iannaccone et al. 2013) revealed that diagnosis and severity of disorders affected SI, while those with only BM (versus those with only SI or both SI and BM) had more positive feelings about themselves, their bodies, higher "self-esteem, less impulsivity,

depression, and anxiety, and lower levels of social dysfunction" (Iannaccone et al., 2013, p. 1). The results showed that half of the participants had at least one SIB, which aligns with literature that suggests a connection between SIB and EDs. Though the sample was small, it revealed that individuals had one type of BM (such as tattoos), which supported previous studies that indicate a connection between the utilization of tattoos and BM and ED. There appear to be no generational patterns with these behaviors as they showed to be similar between the ages groups of 15-25 and 26-55. This paper categorized the results into general characteristics of the sample, the prevalence of tattooing, piercing, and self-injuring, intercorrelations between tattooing, piercing, and self-Injuring, and group comparisons.

Implications of this study (Iannaccone et al. 2013) suggest that there may be a level of association between BM and ED, wherein those with ED desire to alter, punish, and modify their physical form, and SI and BM offer two potential options to attain that outcome. The body's experience for those with ED is important to consider for treatment and prevention. The researchers of this study feel that SI and BM are a means to alter the body, similarly to actions such as weight loss and purging, and could be treated with therapy like ED symptoms. If taken as such, it is important to incorporate such assessments into the therapeutic process.

In this study (Iannaccone et al. 2013), the limitation is the quantitative self-report survey instruments were used rather than semi-structured or structured interviews, which leaves out the personal details of the participant's experience. Lastly, non-standardized assessments were used to examine SI and BM. The progression of the data begins to reveal the connection of tattoos under the umbrella of self-injury as a means of dealing with personal events and trauma, this view is further analyzed in a similar study in the following article.

Similar to other articles in this section of the review, the data presented here continues to explore the possibilities of positive healing connection to tattoos and trauma, even when regarded in connection to self-injury. Stirn et al. (2008) sought to explore the reliability of the interrelation of social factors and individual thought and behavior regarding tattooing and piercing is controversial and limited. The purpose of this study was to research a larger sample of participants with body modifications (BM) to re-examine the aforementioned data gap by focusing on the motives and relations to personal life events.

This research design (Stirn et al., 2008) starts with the key for us of trauma, BM, tattoos, piercings, and self-injury (SI). An anonymous self-report questionnaire containing 55 items was given to volunteers within a core group of BM-wearing participants. These 55 items addressed the nature of BMs, sociodemographic and biographical variables, poignant childhood experiences, motivations for getting BM, sexuality, personal experiences with the practice of BM, and attitudes toward bodies. Forms of measurement for this study included a 5-point Likert scale or questions answered with a two-choice option. To determine respondents' preferences on certain issues, open-ended space was left for responses such as unique reasons for BM experiences that did not fall under the restrictions of defined categories. Certain other questions were open-ended so that volunteers could respond in their own words to questions about unanticipated motives. Participants could offer additional information on their BM practices. All data was then analyzed using SPSS software, then a statistical t-test was utilized in regards to continuous variables, and nonparametric variables were analyzed via a chi-square test.

For this research (Stirn et al., 2008) a large sample population of 432 volunteers was necessary. Participants were obtained by, with permission to publish the questionnaire in May 2002 issue, the editorial staff of a tattoo and BM-related magazine called Taetowiermagazin.

There was an almost equal number of women to men, with 215 being women and 217 being men. The average age was 28.1 years old, with 141 of the volunteers being between 21-25. Three-Hundred and eight participants lived with partners and 7 were either homosexual or bisexual. Three-hundred and fifteen were unmarried, 91 were married, and 26 were divorced. The majority completed secondary school, being employed in either manual or non-manual labor jobs or administration; 22 were in jobs requiring a university degree; 13 were still in school; 22 were university students; and 25 were pursuing an education in a craft profession (Stirn et al., 2008). BMs (tattoos and piercings), on average, were obtained around the ages of 20 and 22, with the mean number of 9.1 for BMs (tattoos and body piercings) per volunteer, the max number on a single participant being 80.

What the results of this study (Stirn et al., 2008) presented was that respondents' attitudes toward their bodies shifted considerably as a result of BMs. Thirty-four percent revealed that they had BM experiences and practices paired with important individual life occurrences, with 27% revealing that they had self-cut during adolescence. Results also suggested that those with BMs had a high percentage of SI, which enabled researchers to regroup that population to compare them with the remainder of the sample to conclude if motives for attaining BMs were different from the motives of those without SI.

Ultimately this research (Stirn et al., 2008) implies that the motives and significance of BMs span from basic peer group mimicking to extremely informative possible symptoms of severe psychopathological conditions. For the latter situation, the implication is that BMs may on occasion serve as alternative therapy modalities.

One of the limitations of this study (Stirn et al., 2008) is that a control group would have benefited the research. Future research would benefit from dealing more deeply with those

topics, perhaps by not placing the questionnaire in a magazine. This lens offers a different perspective not only on tattoos but on self-injury as a form of healing for some and a topic that may require more discourse to understand it and remove any shame attached to the experience that may hinder acquiring support.

Like self-injury, suicide can be a topic of shame and taboo in daily discourse. However, as the last few articles suggest, research is needed on taboo topics to understand the draw to alternative treatments to attain effective well-being. Koch et al. (2015) investigated the possible connection between the rising number of tattoos and the levels of suicide ideation, depression, self-esteem, and reports of one or more suicide attempts of an individual.

Collecting quantitative data was part of the research design (Koch et al., 2015). Data were collected from 6 college student samples that were studying at 6 American universities. Participants were asked to participate in undergraduate sociology classes, with approval from the IRB at every location, and 2,394 students responded with informed consent. From pre-existing literature, three scales of measuring "well-being" were developed. The scales were Self Esteem, Depression, and Suicide Ideation. The number of times a participant reported attempted suicide was recorded as the final dependent variable, with 2 independent variables of Number of Tattoos, and Gender - male and female. The total population of this study was 2,395, between the ages of 18-20. Respondents were categorized by the regions of the United States that they were found.

The results of this study (Koch et al., 2015) revealed a paradox in data. That within a group of females that reported four-fold higher attempts of suicide (also having 4 or more tattoos), versus those with no tattoos (or 3 or less), at the same time showed that self-esteem was significantly higher within that group. Interestingly, the results also suggest that amongst females there were signs of negative well-being compared to males. This reflects the data that freshman

and sophomore women have “lower levels of self-esteem, higher levels of depression, and suicide ideation, and are more likely to report a history of suicide attempts” (Koch et al., 2015, p. 537). Though the control for gender does reveal that there is a notable substantial difference in males as well who have 4 or more tattoos, though still not to the same level as females. It would seem that there is a significant connection between the rise in acquiring body art (the more tattoos someone gets) and apparent deviant behavior. This result comes along with the evidence that the meaning of tattoos does shift as a participant gets their 4th tattoo. That data may have some reflection on the result of a rise in self-esteem in women who have acquired 4 or more tattoos. As those results suggest, the population of women in this study reflects the competing research that offers up the possibility that tattoos may offer restorative qualities and that women are more inclined to seek out emotional healing through tattoos compared to men. “We know that breast cancer survivors sometimes get tattoos to express, control, or reclaim ownership of their bodies” (DeMello, 2000; Langellier, 2001; Radley & Bell, 2007) (Koch, 2015, p. 537).

In this study (Koch et al., 2015), the reflection on previous research that investigated the connection between tattoos and gender, body image, and deviance, along with the data of this study, implies that there is significance between tattoos and self-esteem in American female college students that also report higher levels of suicide. This may imply the paradox that depression is heightened for tattoo wearers because they are stigmatized while at the same time having a commitment to continuing with tattoos due to their potential restorative qualities. Though in some of the data, the implication is that there is a peak in tattoo satisfaction after 4 or more tattoos. Implications continue to reveal paradoxes in that those with 4 or more tattoos also exhibit more likeliness to deviant behaviors, with tattoos becoming more a reflection of a lifestyle than an alteration to the aesthetic of self. However, implications suggest that tattoos may

offer restoration for those who have survived breast cancer, experience abuse and physical losses, and suicidal ideation as a form of reclaiming their emotional losses.

The study population (Koch et al., 2015) presented a limitation as the difference between men is noteworthy, but did not get the investigation merited, which future research could explore. Also, there needs to be further investigation into the correlation between certain traumas and the attaining of tattoos to explain why there is a rise in self-esteem even though there is more reported suicidal ideation. Several articles in this section offer data on the effects tattoos have on tattoos as well as the narratives tattoos reveal, which carries into the next article as it delved into focusing on working with those narratives in a clinical setting.

In this article the research reflects upon the possibility that a certain number of tattoos may be indicative of an individual's well-being, returning to the concept that tattoos may be sharing a narrative that clinicians and practitioners can understand to support healing trauma. Tattoos may carry narratives that allow for unspoken communication that permits openness of topics such as self-injury and suicide, which may oftentimes be difficult to approach. The purpose of Miller's (2020) work was to present the concept that body modification may be an other-than-human technology such as human unconscious communication. It is also intended to support the theories that the body's skin is corporeal, psychic, porous, and bound with technicity. Additionally, this study supports the theory that the concept of radical openness may allow the human body to, via the skin, be more receptive to other-than-human technologies. Anzieu’s theory elaborates upon our body’s most superficial organ, the skin. The largest and heaviest organ of the body (Anzieu, 2010), our skin combines different organs, senses, the spatial and temporal dimension, sensitivity to heat, balance, movement; unlike the other sense-organs, it

cannot refuse an impression, and we can live without other senses, but not without our skin (Segal, 2009).

The research design (Miller, 2020) of this paper utilized searching and reviewing other literature to aid in analyzing the experiences of the qualitative stories of the participants in this research. Through clinical work with queer and trans patience and an extension of Didier Anzieu's skin-ego theory, three vignettes were created to highlight the connection and interrelation of body modifications and gendered embodiment. The writing was broken up into categories to organize data. Searching the literature which describes the process of reviewing literature for this study. This was followed by the skin ego and radical openness, which elaborates upon Didier Anzieu's skin-ego theory. These categories were preceded by the patient's vignettes of L: Skin and/as page, J: Saying it with flowers, Z: Metamorphosis.

In this research (Miller, 2020), 3 main patients were examined alongside a literary review. The initial patient "L," was an Eastern European nonbinary that utilized black tattoo ink which seemed to express themselves better than writing in a journal. The following patient "J," was a Latinx patient undergoing the transitioning process who chose to collect flower tattoos on their body. The last patient known as "Z," was a Jewish patient that had the transformative process of top surgery and viewed the scars as birthmarks.

What the results of this research (Miller, 2020) revealed is that according to Anzieu's skin-ego theory, the patient in this research could be seen to have an insufficiently developed skin ego, which may result in masochistic and self-harming behaviors. However, through the lens of radical openness, patience may be seen as radically open with not only pain but creativity, empowerment, and strivings to communicate via the transformation of the skin's surface (Miller, 2020, p. 152).

The implications of this study (Miller, 2020) suggest that there is a therapeutic aspect to body modification that holds deep intrinsic meaning for patience as a visual expression and language that is native and natural to the individual. This implies that gender, race, and sex facets of the body are deeply entwined with the other-than-human technologies and the corporeal and psychic skins of the human body. Another implication discovered during the literature search on the design process is that there is a gap in body modification studies that goes beyond the negative connotations of tattoos and other body modifications.

This section concludes by having revealed a focused discourse on tattoos and their medicinal value for healing trauma. The following section looks at other alternative healing treatments, that are leading in non-normative healing discourse and may be precursors to future alternative options such as tattoos.

MDMA, Psilocybin, EMDR

This review focuses heavily on tattoo-specific data to further explore the possibilities of tattoos as a non-normative treatment for trauma, this segment will introduce other non-normative treatments currently used for trauma as a means of comparative reflection. The initial article reveals the researched effects of MDMA as an effective treatment to support psychotherapy when working with PTSD. The purpose of this meta-analysis by Illingworth et al. (2021) was to explore and review the several small clinical trials that have revealed the positive use of Methylenedioxymethamphetamine (MDMA) assisted psychotherapy to possibly treat treatment-resistant PTSD.

The research design (Illingworth et al., 2021) and measurements of this study were founded on a systemic four-database search from the beginning of the research until February 2020. Double-blinded, randomized, and compared MDMA-assisted psychotherapy to

psychotherapy and placebo where the studies this meta-analysis study focused on, the differences in the Clinician-Administered PTSD Scale (CAPS-IV) score and Beck's Depression Inventory (BDI) were the main outcomes. "Neurocognitive and physical adverse effects, at the time, and within 7 days of intervention were the secondary outcomes of the measures" (Illingworth et al., 2021, p. 501).

The results of the analysis (Illingworth et al., 2021) revealed that the inclusion criteria included 4 of the randomized controlled trials (RCTs). These analyzed experiments included placebos and the application of treatments in intervention groups. The comparison between the two groups revealed that the intervention groups "of MDMA with psychotherapy, had significant decreases in CAPS-IV scores, as did the inactive placebo arm" (Illingworth et al., 2021, p. 501). At 75 mg was the only time BDI showed a significant drop when compared against the active placebo group. However, it was observed that there were many more experiences of low mood, nausea, jaw-clenching during sessions, and lack of appetite after 7 days when compared to the placebo group (Illingworth et al., 2021, p. 501).

The implications of the analysis (Illingworth et al., 2021) showed that though with the little outcome on Beck's Depression Inventory and with minimal physical and neurocognitive risk, MDMA-assisted psychotherapy in TR-PTSD has the potential for great therapeutic benefit. Also that for further investigation to be completed better powered RCTs are needed.

Even within a meta-analysis limitations are revealed within each experiment reviewed (Illingworth et al., 2021). Overall, the results of the analysis should be taken with caution. Within the trials the sample sizes were low and with each decrease in numbers within a sample the probability increases for a chance variation. This may result in more errors in comparison and inference. A core outcome set of measurements for all future PTSD trials would help with

the limitation of outcome measures like BDI not being reported consistently through all experiments. The outcome that both participants and therapist were able to note what part of the experiment they were participating in and observing after a 125 mg dose of MDMA presented as a limitation of the blinding aspect of the experiments. Improving the double-blind aspects of further experiments would benefit further data collection. Alternative therapies are being sought out to address treatments that are not effective for all, this article gives data as to the allure of alternative treatments which can be seen in further supporting data in the following research.

Within this research data will present further support for the positive effects of MDMA-assisted psychotherapy while also addressing how misrepresentation of the data can have negative effects on individuals and future research that could prevent supporting those in need. The purpose of this article by Morgan (2020) was to review and provide an overview of all presently published data on MDMA-assisted psychotherapy for PTSD. In addition, the study intended to provide any examples of misrepresentation of this concept in academic literature, reveal the consequences of misinterpreting this type of data, and why it is important to be responsible when reporting this genre of results. PTSD is considered a chronic state of being with higher potentials of two or more medical conditions within one individual. At present, there are limited effective options to address this. MDMA-assisted psychotherapy presents an unconventional take for those diagnosed with treatment-resistant PTSD. In this type of scenario, MDMA acts as a supportive spur that makes it possible and eases the process of trauma during psychotherapy.

The research design (Morgan, 2020) of this analysis was based on a search using the keywords and phrases: “treatments for PTSD”, “drug treatments for PTSD”, “MDMA”, “MDMA pathway”, “MDMA-assisted psychotherapy” and “MDMA-assisted psychotherapy for

PTSD" (Morgan, 2020, p. 2). Searching for articles was done utilizing Science Direct and PubMed with the specified publication date window of up to March 31st, 2019. Google Scholar and other subject specifics websites were used to identify data and then the articles and references cited were reviewed. Within these experiments analyzed patience had to meet a DSM-IV-R criteria for a diagnosis of PTSD. Each participant also had to have had at least 6 months of psychotherapy, and at least 3 months of antidepressant treatment before having treatment-resistant symptoms. Each participant was given 2 or 3 (8-hour) MDMA-assisted psychotherapy sessions after preparatory, non-drug psychotherapy, followed up by non-drug psychotherapy.

The results of this analysis study (Morgan, 2020) revealed the detrimental effects that poor reporting can have leading to harmful media reporting which can inhibit much-needed research support and progression in an arena of study that is currently still disputed. This is a negative outcome of poor reporting due to results indicating that small-scale studies show reductions in psychological trauma, without the misconception of the aims and intentions of the research that MDMA alone is a treatment for PTSD. Implications of this study reveal that more research is needed to securely support what the data shows, that MDMA-assisted psychotherapy may help those who experienced psychological trauma with no effective resolution through currently offered treatments. To attain more support for appropriate research, accuracy, and objectivity of data reporting are needed. Further research would benefit from the accuracy of data and frequency of experimentation. It is important to provide high standards for experimental data as it can determine the progression of much-needed research, especially for alternative treatments that have only begun to be discussed seriously. The next article will delve into psilocybin as well as MDMA to further provide examples of alternative treatments, and their

effects, and through that data continue to connect back to tattooing as another option for trauma treatment.

This article introduces psilocybin as an alternative treatment as well as the concept that multiple treatments may be necessary for effective results, especially with harder-to-treat symptoms or multiple-symptom diagnoses. The purpose of the research by Bird et al. (2021) is to analyze the rationale of the therapeutic values of psilocybin and MDMA for the treatment of trauma-related Major Depressive Disorder (MDD) and Post-Traumatic Stress Disorder (PTSD). A standard element of PTSD is trauma and trauma history is often connected to a variety of other psychiatric conditions. There is a role of trauma in psychiatric suffering or disease from a disorder and comparable respects of psychoneuro-biological changes is studied in this review.

The data collected from this review (Bird et al., 2021) of current experiments were categorized into the following groups and subgroups:

> "Trauma & psychopathology", "PTSD and MDD: comorbidity and treatment", "The neurobiology of the trauma response", "The limbic system", "The HPA axis", "MDD", and "PTSD: current treatments", "PTSD", "Depression", "Novel treatment approaches", "MDMA and psilocybin-assisted psychotherapy: transdiagnostic uses", "Mood effects", "emotional processing", and "Social cognition". (Bird et al., 2021, p. 229-249)

The results of this review (Bird et al., 2021) revealed that when there are multiple disorders within a single individual and PTSD multiples, different approaches are required for effective treatment. There is enough stout evidence proposing that depression, a complex psychosocial experience with many triggers, can develop from traumatic experiences. The implications of this research reveal that about 50% of PTSD cases are paired with MDD. There is an ongoing debate as to whether or not the combination of MDDþ PTSD within an individual

is its own definite trauma-related set of observable attributes of an individual resulting from the interaction of its genotype with the environment. Whatever the reality may be, treatments similar to what has been applied to MDD and PTSD separately continue to be applied with comorbid MDDþ PTSD, resulting in varying degrees of success. New and unconventional treatments such as the drug-assisted psychotherapy model (that combines pharmacological and psychotherapeutic approaches) have been applied with valuable outcomes, especially for those that have treatment-resistant disorders. Both “psilocybin- and 3,4-Methylenedioxymethamphetamine (MDMA)-assisted psychotherapy has received the Food and Drug Administration's breakthrough therapy designation for the treatment of resistant MDD and PTSD, respectively” (Bird et al., 2021, p. 229).

It has been implied (Bird et al., 2021) that it is effective to offer psilocybin-assisted psychotherapy to counteract situations where depression persists after MDMA-assisted psychotherapy has been administered. This application seems to ease said continuing depression, which may be a mechanism for processing traumatic memories. The result of applying this suggested treatment reveals that patients become more attuned to the heightened state of psilocybin after experiencing more present changed states under MDMA. Approaching treatment with this view may support the qualities of MDMA that enhance trust, creating a deeper alliance with the therapeutic process which may allow for a more acute follow-up psilocybin experience. “To directly investigate the possible transdiagnostic (mechanism which is present across disorders) uses of psilocybin- and MDMA-assisted psychotherapy for comorbid and non-comorbid PTSD and depression” (Bird et al., 2021, p. 240)

In the analysis (Bird et al., 2021), the limitations suggest caution when interpreting large effect sizes, even with trials of MDMA or psilocybin-assisted psychotherapy are promising.

Efficacy was not a main consideration as much as feasibility and safety in early trials, in addition to having open labels and/or small sample sizes. To address issues and questions of effectiveness there needs to be a larger and multiple-site placebo-controlled return to clinic (RTCs) because maintaining a blind study with psilocybin and MDMA and their unique effects on the body is a pragmatic problem. The problem lies within that both patience and researcher can delineate between the active treatment or dose and the placebo. An expectation that something good will result tends to be an ongoing issue within the research of MDMA and psilocybin, which is further aggravated by the popularity of this area of study. Though data is showing that multiple treatment approaches are effective, it remains necessary to check bias and accuracy when announcing results to keep research integral and ongoing. This allows researchers to continue clinical studies of other treatments including LCD, DMT, and Ayahuasca as the following work will present.

Similar to the previously presented articles, this research continues to suggest the positive outcomes of non-normative treatments, but adding LSD and DMT/ayahuasca to the aforementioned MDMA and psilocybin. The purpose of Sarris et al. (2022) was to analyze present experimentation to summarize the clinical and key data on all primary therapeutic psychedelics (psilocybin, LSD, and DMT/ayahuasca), and MDMA to help with mood disorders.

Pulling from English language articles this review (Sarris et al., 2022) analyzed literature focused on clinical information on major depressive disorder (MDD), post-traumatic stress disorder (PTSD), and social anxiety, with a time window of up to September 2021. For primary issues whose outcomes were disorders such as generalized anxiety disorder, panic disorder, and dysthymia, there was no clinical trial information. This project also offers a table providing a summary of the data. The analyzed clinical data were categorized into 5 Topics, with 5

subcategories. “Mechanisms of action, psychological mechanisms, current evidence (with subgroups: Overview, Psilocybin, N, N-Dimethyltryptamine/ayahuasca, 3,4-Methylenedioxymethamphetamine, Lysergic acid diethylamide, Microdosing) and clinical considerations” (Sarris et al., 2022, pp. 1-22).

In this data review (Sarris et al., 2022), the results revealed multiple layers. If a substance is serotonergic it produces its effects via interactions with the serotonin system, serotonergic psychedelics modulate networks in the brain that dominate psychiatric disorders. Also, serotonergic psychedelics may promote neurogenesis and neuroplasticity. Partnered with supportive psychological therapeutic sessions, Randomized placebo-controlled trials reveal that psilocybin, while hinting that N, N-dimethyltryptamine/ayahuasca, are effective in the treatment of depression, which includes treatment-resistant depression. Phase III trials bring to light the positive effects of Lysergic acid diethylamide (LCD) for anxiety-based issues and 3,4-methylenedioxymethamphetamine (MDMA) works for the treatment of post-traumatic stress disorder (PTSD).

Overall the implications of this review (Sarris et al., 2022) suggest that research provides encouraging data for the positive effects of medicinal psychedelics for the treatment of mood disorders. This helps in establishing a larger portfolio of mood disorder treatments and psychedelic-based pharmacotherapies, as advanced modalities will be needed in the coming years for a range of mood conditions. Though it is important to take into consideration that more recent self-directed controlled trials show that there may not be much data on the improvement of mood through micro-dosing psychedelics.

It is also necessary to provide more focused data (Sarris et al., 2022) on effects that may cause harm or damage by using larger sample sizes to collect more pharmacovigilance data,

which also applies to more safety information needed to determine the interactions between psychedelics and other drugs. Future research may benefit from focusing on examining these treatments in new forms of precision medications for individuals and groups, formulations, microbiomes, and inflammatory pathways. The more research, the broader the portfolio of effective alternative treatment options becomes, and there is a role for non-normative approaches as the following article will suggest.

This article returns to psilocybin and MDMA and delves further into the emerging role they play as a treatment for mental illness. Gill et al. (2020) the researchers analyzed data to determine the value of traditional psychedelics, psilocybin, and MDMA as medicinal and therapeutic alternative treatments for mental illness. Researchers of this literature analysis suggest that the unconventional treatments for mental disorders justify a new and updated examination of psychedelic psychotherapy.

The literature review (Gill et al., 2020) analyzed current literature on the arena of psychedelic research. Collected data was then organized into the following categories:

> "Proposed mechanisms of action in mental illness (with subgroup Mechanism of action for psilocybin), Mechanism of action for MDMA, Safety, and tolerability (with subgroup Safety and tolerability of psilocybin and Safety and tolerability of MDMA), Major depressive disorder (with subgroup MDMA-assisted therapy for the treatment of major depressive disorder and Psilocybin-assisted psychotherapy for the treatment of major depressive disorder), Anxiety disorders (with subgroup Psilocybin-assisted psychotherapy for the treatment of anxiety disorders), Post-traumatic stress disorder (with subgroup MDMA assisted-psychotherapy for the treatment of PTSD), and Expert opinion." (Gill et al., 2020, pp. 1263-1273)

The results of this review present that as an alternative therapy for mental illness and disorders, psilocybin, and MDMA provide effective treatments.Those results (Gill et al., 2020) imply that as a single-dose, rapid-effect, robust results model psychedelics (such as psilocybin and MDMA) may be an alternative focused treatment tool for treatment-resistant mental disorders. For those who experience mental illness, it can be chronic with serious functional, emotional, cognitive, and/or behavioral outcomes that impair daily life. According to the reviewed data, it implies that over the next 30 years, the economic and social costs of mental illness will surpass USD 1.8 trillion, with those who experience and suffer from mental illness will not obtain effective results with presently offered first-line treatment. The fact that first-line treatments are not meeting the needs of those with mental illness, there is an urgent necessity to develop therapeutic options that have rapid effective outcomes for mental health disorders, while keeping the social and economic cost to a minimum.

Again we see the value of these alternative treatments with the addition of economic shifts alternative treatments may provide in healthcare as mental health will become more expensive, while treatment becomes more needed (Gill et al., 2020). This brings us to a new category of alternative treatment in the next article. Treatments that may be cost-effective while attaining similar positive results from the previously presented dose-based treatments.

EMDR, Eye Movement Desensitisation Reprocessing, is a trauma treatment that requires no dosing. The purpose of the quantitative study by Bell et al. (2023) was to examine the effectiveness of Eye Movement Desensitisation Reprocessing (EMDR) for trauma treatment such as Post-Traumatic Stress Disorder (PTSD), Anxiety, and Depression, within low-to-middle income countries.

The research design for this study (Scott-Bell et al., 2023) was based on the utilization of

EMDR which addresses negative thoughts, feelings, and behaviors from unprocessed trauma and memories by bringing focus all at once on (a) spontaneous associations of traumatic images, thoughts, emotions, and bodily sensations, and (b) bilateral stimulation that is most commonly in the form of repeated eye movements (WHO, 2013) (Scott-Bell et al., 2023). These studies were conducted in Arabic, over 8 to 12 sessions (though good results were noted after 3 - 6), and consisted of 8 stages: History Taking; Preparation: Assessment: Desensitisation; Installation; Body Scan; Closure; and Re-evaluation (Bell et al., 2023). Aspects of EMDR protocol for success include the validity of cognition (VOC) and subjective units of distress (SUD) which are used as measurements to evaluate true chances of emotion and cognition. The VOC measures a person's positive beliefs and SUD measures a person's disturbance, (Scott-Bell et al., 2023). There were 3 points where therapists evaluated participants, those points were: pre-treatment (T0), post-treatment (T1), and at 6-month follow-up (T2) (Scott-Bell et al., 2023). All patients volunteered and were informed about withdrawal possibilities at any time, ethics approval was given, and then informed consent was acquired from all volunteers before pre-treatment reviews.

For this study (Scott-Bell et al., 2023), 268 adults residing in Lebanon were randomly assigned to trained psychotherapists to receive EMDR. Within that population was 268 participants, a small sample of the population was refugees and the remaining population was considered to be of low-socioeconomic status and located in a conflict-affected middle-income country. To correctly establish demographics, it is necessary to note that socio-economic, residency, and/or refugee status were self-reported. Additionally, 10 volunteers chose not to participate in the process and were excluded.

The results of this study (Scott-Bell et al., 2023) suggested that there were reductions in PTS symptoms, anxiety symptoms, and depression symptoms. This study implies that for the

under-researched population of low socio-economic status and refugees, PTS, depression, and anxiety were effectively treated with EMDR. There is a benefit to using EMDR to address mental health disorders and symposiums in mental health arenas and especially for settings affected by conflict.

Several limitations need to be acknowledged even though the results reveal (Scott-Bell et al., 2023) a decent level of psychological symptom alleviation. One limitation is the high dropout rate which may be credited to the intensity of the work being a lot to undertake, as well as the fluid nature of certain populations such as refugees. To address this future research could formulate a more effective way to have consistent follow-up appointments with participants. Another limitation is that the EMDR treatments were not compared against other treatments, though this may have been addressed by using a large population size and plenty of evidence-based measurement. Additionally, there is the limitation of location and different therapists, as participants were paired with a therapist that was in their location. Lastly, the final limitation could be that of no formal PTSD diagnosis since all symptoms were self-reported. However, this may be resolved by the data from previous research that suggest 68% of those with traumatic events develop symptoms of PTSD. EMDR is an exciting alternative, as it allows those who may not be able to take alternative dose-based treatments to still attain effective trauma healing when other approaches alone are not sufficient. The following article, like previous ones, will revisit EMDR combined with other alternative approaches for trauma treatment.

As previously mentioned in the article by Sarris et al. (2022), a single-treatment approach is not always sufficient. The purpose of this research by Auren et al. (2022) was to evaluate the efficacy of intensive PTSD treatments over 8 days within a 2-week period within an open trial

design in a public healthcare environment.

The procedure of this study (Auren et al., 2022) was composed of 4 days a week, totaling 8 days within a 2 week period. Each individual received a 90 min PE session at the start of the day, preceded by a 45-minute group PA, which included a 45-minute break. This break was followed by each participant getting 90 minutes of personal EMDR (Eye Movement Desensitization and Reprocessing therapy) before a 45-minute group education session to end the day. Following participants for PE sessions, participants were asked to recount out loud a traumatic event that they could remember and imagine in as much detail as possible. The next step was to shift focus from the in-session exposure to processing the experiences in an attempt to change the negative thoughts created by the trauma experience.

The measurements of this study (Auren et al., 2022) included assessments of the patience with self-reporting and interviews at pre-treatment, start of treatment, post-treatment and 3-month follow-up (Auren et al., 2022, p. 1). Even though therapists circulated between patience, every participant underwent EMDR, Prolonged Exposure therapy, group psychoeducation, and physical activity as part of the daily trial routine. Between January 2019 and March 2021, the recruitment of 163 patients for this study was done through references shared by a public outpatient clinic, that was within the region, that specialized in PTSD treatment. Patients were 18 years of age and older with trauma-related diagnosed symptoms of disorders. Each individual had to have had at least one prior treatment of a trauma-related disorder. One-hundred and forty three participants were offered treatment after they met the clinical criteria for participation in this study. Of the 143 participants, 37.8%, 54, did not meet the criteria for intensive treatment. The reasons for that were due to two variables: one being that 21 individuals needed more specifically tailored treatment due to severe comorbidity, the other

being that 15 individuals required less treatment. 20 patients did not receive treatment due to the following reasons: 60% of the participants did not want to participate, 15% did not fit the criteria for PTSD, 20% required treatment for other disorders, and 5% during the assessment period dropped out.

Overall the data (Auren et al., 2022) revealed positive results leaving participants very content with the treatment outcomes. This would explain the no dropouts for the final population and high participation and attendance. More specifically effect sizes were large, reflecting that 55 to 62% of the population showed clinically noteworthy shifts in recovery from symptoms of PTSD. It was also noted that there were positive progressions in overall well-being and interpersonal functions as a result of recovery from symptoms of depression and anxiety disorders.

What this study (Auren et al., 2022) implies is that for PTSD positive effects were an outcome of the intensive treatment program. In conjunction with post-treatment and three-month follow-ups, intensive treatment programmers are connected to noteworthy treatment advancements of PTSD symptoms. This supports the reports from patients that expressed well-being and interpersonal function improvements, in tandem with less severe symptoms of PTSD, depression, and anxiety. There was some lack of clarity around improvement in work and social function, though that may be explained by the reality that 52% of participants were receiving disability benefits. Though the intensive treatment was well received, 38.2% of the participants chose the time-limited option over the open-ended individual outpatient treatment. The implications reveal that this data adds to the expanding verification of intensive treatments as an effective option to be added to other treatments for PTSD. All this information also brings to light that within public healthcare outpatient clinics, it is possible to have a combination of

effective intensive treatment tools such as physical activity, group activities, and therapist rotation.

In this study (Auren et al., 2022), due to the combination of treatment designs, another limitation is the lack of being able to define exactly what the different contributions were of PE, EMDR, group PA, and group psychoeducation treatments. To address this future research may want to consider separating the treatment designs and creating randomized controls for trials. A multiple-treatment approach is revealed to have positive effects even with severe symptoms for those who have resistance to single-approach treatments. The next research will reflect further upon this and from the lens of multiple disorders.

As this section of the review comes to its conclusion, the following research delves into trauma treatment focused on having two diagnoses. The purpose of Kolthof et al. (2022) work was to delineate if, for post-traumatic stress disorder (PTSD) and borderline personality disorder (BPD), focused intensive trauma therapy and a follow-up diagnostic after 12 months is an effective tool to relieve symptoms. Prior studies suggest that intensive programmers may be effective in relieving symptoms, though those studies depended on self-reporting and had little follow-up information to analyze.

For this study (Kolthof et al., 2022), the research design was founded on a scale for DSM-5 regulated by Clinician-Administered PTSD. This intake survey was conducted to collect data on the potential seriousness of PTSD diagnosis. The intake was preceded by the completion of the Assessment of DSM-IV Personality Disorders questionnaire. Following the survey was the structured clinical interview for DSM-5 personality disorders (SCID-5-P) borderline subscale after consent from each participant was acquired, which the interviews were used to put in place a classification of BPD. Acuteness of BPD was assessed via the Borderline Personality Disorder

Symptom Index (BPDSI-IV) for those individuals who met the BPD criteria. For this study trained researchers conducted telephone interviews and certain points. Immediately following treatments, post-treatment, and at the 6-month mark, there were follow-ups that consisted of repeating the BPDSI-IV and CAPS-5. After those benchmarks were executed, the BPDSI-IV, CAPS-5, SCID-5-P, and SCID 5 P were done again at the 12-month mark. Data regarding the seriousness of PTSD and BPD for this study were measured and assessed via pre-treatment, post-treatment, 6 months, and 12 months after treatment (CAPS-5, BPDSI-IV) (Kolthof et al., 2022, p. 1). This data was acquired during the 8-day trauma-focused treatment program. This program took place in an inpatient environment and utilized intensive prolonged exposure paired with EMDR. At pre-treatment and 12-month follow-up, the CAPS-5 and SCID-5-P interviews, done by clinical researchers, assessed the diagnostic status of each participant.

In this study (Kolthof et al., 2022) general practitioners, psychologists, psychiatrists, or mental health center staff referred 84 individuals to the study who were receiving treatment from Psychotrauma Expertise Centrum (PSYTREC), a mental health care center in Bilthoven, The Netherlands. Each individual had to meet the criteria before any treatments were offered, which took place during the window of February 2020 until January 2021, except the window of April 2020–July 2020. The criteria required each participant to be at least 18 years old, had to be given a diagnosis of PTSD that aligned with the definition from the DSM-5 (American Psychiatric Association, 2013), had to be able to comprehend and speak Dutch, 3 months before treatment there could be no case of attempted suicide, each individual had to accept being assigned to the intensive treatment program of 8 days, and had to have been diagnosed with borderline personality disorder (BPD) according to DSM-5 (APA, 2013) (Kolthof et al., 2022). The 84 participants were assessed to take part in this research during the intake portion of the study.

"Within the studies population, 93.3% had been exposed to physical abuse and 71.1% to sexual abuse before the age of 12 years" (Kolthof et al., 2022, p. 1)

According to the results of this study (Kolthof et al., 2022), it is suggested that symptoms of PTSD and BPD outstandingly decreased and remained decreased through the entire research timeline which terminated at the 12-month check-in. According to the assessment tests of CAPS-5 and SCID-5-P, 73.1% of participants no longer met the criteria for BPD following the SCID-5-P, while 69.2% of the participants no longer fit the criteria at the 12-month window for PTSD following the CAPS-5. The implications of this "first of its kind" research suggest that for PTSD and BPD, intensive trauma-focused treatment does offer an effective alternative option for treatment. This study is the first to explore psychotherapeutic options for the treatment of PTSD that is comorbid with BPD.

As with most studies (Kolthof et al., 2022), it is wise to approach results and data with carefulness. Overall this section of the review was intended to show other alternative treatments (MDMA, psilocybin, LCD, DMT, Ayahuasca, EMDR) for the trauma that are at the forefront of trauma treatment discourse. Reviewing this data bridges to the concepts of tattooing as an alternative healing option, reflecting on the similar positive effects tattooing has on healing mental, emotional, and physical states affected by trauma.

Discussion

Implications

Throughout this literature review, there has been the underlying theme of tattooing as an alternative healing modality in the modern age. This review initially presented an exploration of tattoo cultures and perceptions as a contemporary topic and as a historical and present-day topic within indigenous cultures. This literature review also summarized data specific to tattoos and

their potential medicinal value regarding trauma such as sexual abuse and emotional trauma, as well as PTSD, depression, and anxiety. Finally, this review presented an overview of research about other alternative therapies (MDMA, psilocybin, LSD, and somatic practices such as EMDR) being considered in current-day discourse. Those other alternative options discussed were meant to help consider and reflect upon tattooing as a potential alternative treatment for trauma.

Tying together all the data presented within the review, it is exciting to note the similarities among all the articles. The information does show that concepts previously researched, studied, and reviewed (from literature reviews to laboratory experiments) all seem to share the commonality that there is healing value to tattoos for those who have experienced trauma. The opening segment with its cultural views and experiences (from contemporary, indigenous, and historical lenses) is the first introduction to the concepts of healing tattoos from the perspective of personal, lived experiences of individuals who not only experienced trauma (generationally and presently), but also culturally view tattoos as something beyond just an art form. Those experiences and historical observations ranged from positive shifts in physical, emotional, and mental well-being to positive shifts in perceptions of self-esteem, others, and life. Tattoos and trauma, the following segment, further supports (through analyzed scientific experimental and experiential data) that for those who have experienced trauma, tattoos offer a form of support, relief, and semi-permanent change to the outcomes of trauma, such as PTSD and depression. Some of the data even revealed that those who sought to regain body autonomy from certain traumas such as sexual abuse, were able to do so through tattooing and body modifications. The final segment, which focused on other alternative forms of healing, also presents more scientifically analyzed data, bridging the concepts of nonnormative therapeutic

options that focus on the whole well-being of an individual to attain healing results for trauma. Those nonnormative treatments (MDMA, psilocybin, LCD, EMDR) present physical, mental, and emotional effects in and to the body similar to what some experience during a tattoo or body modification process. Numerical data, observational data, experiential and experimental data all offer different lenses through which to acknowledge that there is enough information to support further new research (and the research that is currently being conducted) to more concretely validate that tattoos have medicinal importance.

Even with all the support of similarities, some inconsistencies run throughout some of the articles, primarily the inconsistency of results. Often within the data when research is conducted in uncontrolled environments, there can be inconsistency in the results, and in this case, particularly with the observational data from the segment of this review regarding tattoo culture. In those articles, the data revolves around observing cultures that use tattooing as a form of healing from indigenous and contemporary perspectives. These observations are not made in controlled environments, which creates a potential inconsistency as to whether those populations all perceive similar views on tattooing. This reflects the limitation that it is hard to generalize data for larger populations when attempting to research niche topics, such as tattoos and body modification. In addition, these particular limitations also reflect that historical data is pooled from multiple historians over the years, which can contaminate information and be interpreted incorrectly. Inconsistency also exists within some of the experimental articles presented in the segments, tattoos and trauma and tattoos as an alternative therapy approach. There are often elements, even within controlled experiments that are out of researchers' hands, such as a volunteer dropping out or the health of a volunteer shifting. These variables can lead to data being altered in a way that creates a potential inconsistency in outcomes, which must then be

addressed in future research.

Ultimately, each article presented in this literature review supports learning new concepts about the values and effective results of alternative healing procedures and treatments for trauma and the outcomes of trauma. The collective data suggest that there may be a future where multiple culturally inclusive avenues of healing could be available to practitioners to offer to those who have experienced trauma and are affected by the results of trauma (PTSD, depression, and anxiety). Even those articles that present data through a more negative lens suggest that there is still not enough research to determine if alternative healings are not effective. There is also a potential to learn that taking a more personalized and interdependent approach to medicinal practices, may ultimately serve individuals and communities in a more holistic and caring way that addresses the root causes of trauma rather than just the symptoms. This implication is supported by the data presented within some of the experimental articles through the discussions around the lack of effectiveness of current-day trauma treatments, while other alternative approaches appear more effective in the studied populations.

With each segment, it is possible to see how the data builds upon itself. From the indigenous tattoo practices, it can be seen how the foundational concepts of tattooing as an alternative form of trauma healing are founded in long-standing cultural traditions. This draw to non-normative practices to create new perspectives that lead to new research is also reflected in the articles that talk about MDMA and other alternative forms of healing. These practices may not have been considered if not for the inspiration and influence of traditional data. This review was intentionally organized to emphasize both the macro and micro awareness that the data intrinsically builds upon itself to reveal how our histories, cultures, and communities guide our research and studies, bringing us to tattoos as an alternative therapy approach.

There are several implications to be recognized from this literature review. One exists within the similarities across all the articles. In the articles, it can be seen that the melding of individual and interdependent (individual and communal) attention on patients as part of alternative healing practices, supports the medicinal value of alternative healing options such as tattoos, body modification, MDMA, psilocybin, LCD, and somatic therapies such as EMDR. This approach seems to create trust and ease for individuals as well as create more well-rounded approaches to trauma treatments. Another implication is that of cultural inclusion within health care and trauma treatment. Throughout the entire review, articles explicitly and implicitly suggest that it is becoming necessary for more cultural inclusion within mental health care and trauma treatment. Within some cultural practices that exist and in newer research on alternative healing options, there is a growing awareness of stepping outside Western medical perspectives and practices. This growing awareness also helps to further establish a sense of trust (of being heard and seen) between practitioners, individuals, and communities. It further establishes a need for clinicians, educators, researchers, and practitioners to acknowledge that not all Western-based health practices are suitable for all cultures and communities. This review suggests that clinicians, educators, researchers, practitioners, and individuals need to consider that tattooing and body modification could be effective forms of alternative trauma healing.

Limitations and Future Directions

Within and among the articles reviewed some limitations must be noted. One major limitation was that there was a high frequency of pointing out the need for studied populations to be larger and more diverse (age, race, gender, sex, economic standing, housing, employment, education, family system, etc.). Much of the scientific research reviewed mentioned that data was hard to make generalizable for larger populations, due to the specificity of populations

studied due to tattooing being a niche subject to this day. This carries over even into the segment regarding contemporary and Indigenous data because that information stems from smaller niche populations and communities, some marginalized due to historical genocide and oppressive systems. Another limitation revealed by the aforementioned limitations is that not only is tattooing still taboo and overlooked as a research subject and societally (immediately creating a societal bias), but the populations that were studied (and some already utilizing tattooing as a healing modality) are themselves underrepresented. Clinically, it would be wise to note the lack of investigation into the possible connection between specific traumas and attaining tattoos, which may provide insight into further understanding the motivations to be tattooed. A third and very important limitation is it should be recognized that blanketing all the articles is the influence of Western sciences and psychologies. Even if unintended, this creates a level of bias around the collected data towards research perceptions based on those Western standards and practices that may not be inclusive of other cultures, their views, and practices. This may further affect how patients are treated as it is common for Western medical practices to be more focused on the symptoms versus the person (or community) and their full holistic well-being (mental, emotional, physical, and personality). The final limitation is that there may not be adequately suited experimental designs to test alternative therapy options, such as tattooing and body modification (even some of the MDMA, psilocybin, LCD, and EMDR articles mention this in regard to those experiments). It may further help develop the arena of tattoo therapy studies to focus on creating experimental designs more suited for that area of research.

Reflecting on these limitations, future research would benefit from working with larger more diverse populations, to make data more generalizable. This may lead to data being more readily accessible and validated for those seeking alternative therapy options, as seems to be the

growing reality as suggested by some of the data. It would also behoove future researchers to work in tandem across academic disciplines, to keep tattoo discourse prominent and to be more culturally inclusive of the demographics of the populations that are being researched. This may result in being better able to effectively serve larger populations through understanding all cultures and their histories including alternative therapy options (such as tattooing, body modifications, and other medicinal treatments) that some cultures have already been using for hundreds if not thousands of years. Along this line of thought, we must include that researchers may want to look at modifying practices so that they are more considerate of the whole holistic individual versus just the symptoms the individual is experiencing. This may help to further develop alternative therapy options that are more effective, but difficult to perceive currently due to how Western medicine approaches treatments and healing. Lastly, it may be equally as important to develop experimental designs specific to tattoos for trauma treatment, to have numerical data that can be regenerated and have its validity tested to determine the safety and efficacy of tattoos for the treatment of trauma.

Conclusion

In conclusion, this area of research is important because as the data in the literature review suggests, more and more individuals are seeking effective alternative forms of treatments to address treatment-resistant traumas. This also comes from the growing recognition that Western approaches to therapeutic and medicinal treatments alone are not necessarily effective for all physiologies, communities, and cultures. Individuals are seeking a more holistic and personalized approach to their trauma and trauma symptoms.

Particularly, within the articles pertaining to EMDR, the bridge connects somatic alternative therapeutic options (such as acupuncture, tapping, and EMDR) and the process of

tattooing as an alternative therapeutic option for trauma. It can be seen in that data that the way EMDR works has similar effects on the mind, body, and emotions that the process of tattooing has for some individuals. Starting with connecting to an appropriate tattoo artist such as one would connect to an appropriate EMDR therapist. Then undergoing the process of creating trust and connecting to better understand each other, so that in tattooing a design can be created and in EMDR a therapeutic personalized program can be created. Proceeded by the experience of being tattooed and how it affects sight, hearing, and physical sensation which can create emotional release and processing, which is also similar to the eye, sound, and physical tapping aspects of EMDR, which also creates emotional release and processing. One difference in tattooing, as seen in the articles in the segments tattoo culture and tattoos and trauma, is that individuals walk away with an externalized expression (tattoo art) of their chosen experience, which may provide added positive support with self-esteem, self-trust, and regaining body autonomy.

It is clear throughout all the articles, that this is a time of reviewing medicinal practices for health and well-being. This review reveals that researchers are looking at traditional, international, and non-normative practices outside of Western medicine. Presently, the umbrella of alternative treatments is a steadily growing discourse in popularity and experimental data. Communities are seeking alternative options that provide more inclusive and accessible ways of effectively treating the roots of trauma, ranging from PTSD, depression, anxiety, and other mental, emotional, and physical results of treatment-resistant traumas. As suggested by author Danny L. McCarty In Tattoo Narratives and Counseling (2019), to truly develop trust and connection with individuals seeking treatment, it is important to start connecting with the person through, not only their trauma, but those aspects of self that make them feel seen and heard.

Aspects such as the beliefs within cultures, how communities approach healing, how they approach tattoos, and the narratives tattoos may tell of the personal journey of healing trauma.

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