

Polyvagal-Informed Therapeutic Drumming for Victims of Interpersonal Violence

A Feasibility Study

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ABSTRACT

The inclusion of therapeutic modalities for trauma survivors that integrate the brain, mind, and body is essential for addressing the range of physiological responses and symptoms caused by interpersonal violence (van der Kolk, 2014). Neglecting to include the body in therapy leaves out an essential component necessary for healing. The polyvagal theory helps explain the physiological responses to trauma from the perspectives of biology and neuroscience (Porges, 2018). An emerging method used as a therapeutic tool has been the incorporation of rhythm and drumming. This intervention integrated concepts from polyvagal theory into therapeutic drumming exercises, such as exploring the different nervous system states through sound and rhythm. Therapy clients were invited to participate in five individual therapy sessions incorporating rhythm and drumming, with the final session using drumming to create the client's trauma story. Participants were then interviewed about their experiences, and the recorded interviews were transcribed and coded for thematic analysis. Five main themes emerged from the interviews: connecting with sound, insights gained, sense of agency, sense of safety, and social connection. As an initial feasibility study, this project's aim was to discover what participants liked and gained from the drumming sessions. All participants mentioned movement from a sense of isolation to a sense of connection. The drumming sessions also offered a creative and safe outlet for expressing difficult emotions and memories that may otherwise be too difficult to discuss using words.

Keywords: trauma, rhythm, drumming, polyvagal, feasibility study

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The inclusion of therapeutic modalities for trauma survivors that integrate the brain, mind, and body is essential for addressing the range of physiological responses and symptoms caused by interpersonal violence (van der Kolk, 2014). Neglecting to include the body in therapy leaves out an essential component necessary for healing. The polyvagal theory helps explain the physiological responses to trauma from the perspectives of biology and neuroscience (Porges, 2018). Stephen Porges used this theory to explain the nervous system's three states as a reaction to perceived threat:

dorsal vagal (shutdown), sympathetic (fight/flight), and ventral vagal (safety and connection). While this perspective has been useful in helping to normalize the reactions of trauma survivors, therapists specializing in trauma have used it in countless ways to help clients feel safer with themselves and when interacting with others (Dana & Grant, 2018). Polyvagal-informed therapists have used various modalities to help traumatized individuals reconnect to their bodies and re-establish feelings of safety with others, including yoga, music, and dance (Gray, 2018; Ogden, 2018). An emerging method used as a therapeutic tool has been the incorporation of rhythm and drumming. Research studies involving drumming interventions have found many positive impacts, including enhanced immune system responses, decreased stress-related arousal, and increased feelings of empowerment and connection to others (Bittman et al., 2001; Fancourt et al., 2016; MacIntosh, 2003; Pelletier, 2004).

Building on previous research, the intervention described in this paper integrated concepts from polyvagal theory into therapeutic drumming exercises, such as exploring the different nervous system states through sound and rhythm. Therapy clients were invited to participate in five individual therapy sessions incorporating rhythm and drumming. Topics included safety, boundaries, exploring fear and anger, strengths, as well as drumming through their trauma narrative and their healing journey. Participants were then interviewed about their experiences, and the recorded interviews were transcribed and coded for thematic analysis.

Trauma's effects on the brain and body

To understand the importance of involving the body in trauma-focused therapy, it is first essential to understand some of trauma's impacts. Survivors of trauma, specifically due to sexual assault, often have a constellation of symptoms, many of which are physiological and have major impacts on the body. One study examined a population of college females, and found that those with a history of trauma had more difficulty regulating their nervous systems and engaging with others, leading to physiological symptoms such as heart rate irregularities (Dale, et al., 2018). The very nature of interpersonal violence is a violation against one's

own body, and many survivors experience a disconnect between the body and mind (Levine, 1997). Because of the physiological responses and symptoms related to trauma, it is essential to implement holistic treatments that integrate the whole person, including the brain, mind, and body.

Re-establishing feelings of balance and stability are essential in order to recover a sense of safety that is compromised after trauma. In *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma* (2014), van der Kolk discusses the role of the brain's amygdala as the essential component for distinguishing situations as either safe or dangerous. This area of the brain is also responsible for processing emotions, and is activated when trauma survivors see, hear, or smell a stimulus that reminds them of their trauma – even years later when the danger has passed (van der Kolk, 2014). Sounding an internal alarm, the amygdala decides whether or not something is a threat even before we become conscious of danger. The sympathetic nervous system is activated, leading to a rise in blood pressure and heart rate. What originated as a survival response becomes maladaptive for those who have experienced trauma, as the nervous system signals a threat even when the danger has long passed. Because interpersonal trauma is often perpetrated by someone known or even trusted by the victim, other relationships can become distorted, resulting in survivors having immense difficulty engaging in these relationships, and leading to worsening isolation and shame.

Survivors of trauma are left feeling disconnected not only from others, but can often also feel disconnected from themselves, including feeling numb or disengaged from activities (Levine, 1997). Developing a sense of connectedness to their own bodies can be a powerful step to manage the overwhelming emotions that accompany trauma. Because of the connection between body and mind, emotions are often experienced as intense physical sensations (van der Kolk, 2014). For example, anxiety may be experienced as sweaty palms or a racing heart, embarrassment as a flushed face, and anger as a clenched jaw and fists. Levine's (2015) book *Trauma and Memory* contains a diagram of different bodies representing different emotions, in which scientists have "mapped" where in the body a certain emotion is felt. This is a helpful illustration of how trauma and its resulting emotions are quite literally held in the body. Since trau-

ma is stored in the body, neglecting to address its physiological effects on survivors will ultimately leave many aspects of the trauma untreated. Healing can take place only when individuals are able to feel safe in their own bodies, rather than operating from a constant fear of impending danger.

Drumming as a therapeutic intervention

Interest is growing surrounding the use of body-oriented approaches in the treatment of trauma. Drumming has been studied in various populations as a modality to connect the body and mind (MacIntosh, 2003). The approach of using therapeutic drumming as a complement to talk therapy may serve to supplement more cognitive or dialectical methods by including the body as an essential component within treatment. This review will explore the potential benefits of drumming relevant to trauma recovery, including establishing a sense of connection, safety, and empowerment.

The body's response to music

Research has shown that music not only has the power to elicit an emotional response, but it can also have positive biological effects on the body. In a meta-analysis of 22 quantitative studies examining the effects of music on the body, a statistically significant decrease in stress-related arousal was found for those who participated in music therapy activities (Pelletier, 2004). Further studies have specifically examined the biological impact of drumming, including enhanced immune system and anti-inflammatory responses (Bittman et al., 2001; Fancourt et al., 2016). These studies highlight the positive health benefits of drumming, and the potential for drumming interventions to affect biological processes within the body. Although further research is needed in this specific area, these results have implications for treating physiological symptoms related to the trauma of interpersonal violence.

Research on group drumming

As an emerging field, current research studies examining the affective impacts of music therapy or therapeutic drumming tend to involve a relatively small number of participants for pilot studies. Because of the often unique and personal impact that music and drumming can have on an individual,

most researchers studying therapeutic drumming have used a qualitative approach to capture a more in-depth understanding of participant's experiences. Findings from group drumming studies included significant decreases in anxiety, feeling more connected with others in the group, fostering feelings of belonging and safety, and feeling more supported in the learning process (Bensimon, Amir, and Wolf, 2008; Deraney et al., 2017; Perkins et al., 2016; Plastow et al., 2018). Developing a sense of connectedness rather than isolation can be particularly important for victims of trauma, who often feel isolated and alone (van der Kolk, 2014).

Because trauma is processed in nonverbal areas of the brain, using words to describe the emotions and effects of a traumatic event can be very difficult for survivors (van der Kolk, 2014). Interventions involving music can facilitate the healing process by allowing survivors to convey experiences that words cannot express. MacIntosh (2003) discussed the effects that various music interventions can have on sexual assault survivors. She has explored the impact of music and developed interventions specifically for sexual assault survivors termed "music and healing workshops." In a group setting, survivors are first taught grounding and relaxation techniques, including the use of their own voices to pick a tone in which to musically ground themselves. They are then invited to share their favorite song or piece of music, as well as the emotions felt when listening to it. Additionally, MacIntosh integrated drumming circles and other rhythmic exercises into the workshops. Even without words, communication took place from one drum to another, and rhythm was used to express emotions such as anger, fear, vulnerability, or sadness (MacIntosh, 2003). While these emotions can be difficult for victims to express in words, drumming can allow a safe space for these emotions to be heard and felt.

Trauma and polyvagal theory

A theory that has been studied and applied to trauma therapy is polyvagal theory. It describes the three "systems" of the autonomic nervous system that are essential for survival: the dorsal vagal complex (collapse/freeze response or immobilization), the sympathetic nervous system (fight/flight response or mobilization), and the evolutionarily newest ventral vagal system, which Porges has also named the social engagement sys-

tem (Porges, 2018). When potential danger is detected, the body's defense system responds in one of two ways. It can be mobilized to take action via the sympathetic nervous system, or, in an attempt to conserve energy, or when the fight/flight response is unconsciously deemed ineffective, the dorsal vagal complex responds by shutting down, freezing, or even by playing dead (Porges, 2018). The higher-level survival system, via the ventral vagus nerve, was developed as the social engagement system in mammals. This shows how social engagement and interaction are necessary not only for mammals to survive, but also to thrive as a species. Importantly, this pathway connects the brainstem to muscles associated with the face and heart, giving mammals the ability to communicate safety through mechanisms such as eye contact, smiling, and voice intonation, as well as the ability to co-regulate with others (Porges, 2018).

Applications of polyvagal theory

The polyvagal theory has been applied specifically to interventions incorporating music. Dr. Deveraux (2017) describes Stephen Porges insights into the effects that music can have on one's physiological state, noting that listening to calming music can activate a sense of safety. Porges also discussed drumming circles as an intervention that combines the physiological effects of music with spontaneous social engagement. According to Deveraux, features such as rhythm, tone, and frequency of sounds can support both a sense of internal safety and connection to others. Establishing a sense of safety between client and therapist is a central component of therapeutic methods applying polyvagal theory. Polyvagal therapist Bonnie Badenoch (2018) emphasized the importance of safety in re-establishing a sense of trust and interpersonal connection with clients by titling her chapter, "Safety is the Treatment." She notes that if a sense of safety is not fostered within the client's body, and between the therapist and client, progress will be significantly hindered.

Rhythm itself can encourage connection, and bring the social engagement system online. Dance and movement therapist Amber Gray (2017) has incorporated rhythm and movement into treatment for trauma victims, and used a polyvagal perspective to show how the social engagement system is activated. Polyvagal-informed dance movement therapy (DMT) has been used with the most trau-

matized individuals in helping them express what they could not through words, assisting in reorienting them to their bodies (Gray, 2018). One goal of this approach is to use movement and rhythm as resources to move more flexibly between the different physiological states, rather than becoming stuck in hyper- or hypoarousal (Gray, 2017). In a case study working with a victim of torture, rhythm and movement helped the client progress from a state of complete shutdown, isolation, and dissociation to becoming more open physically, and more able to verbalize her experience (Gray, 2018). Through this approach, clients can discover their inherent right to take up space and use their "voice" through movement, sound, or rhythm when they may otherwise feel unsafe to speak.

Gray (2017) suggests that drumming can be both a tool that may feel safer than dance or body movement for clients who have experienced an assault on their body, as well as a means to enhance the social engagement system. The use of various call-and-response techniques in drumming can be used to engage clients and develop the therapeutic relationship, such as the therapist or facilitator drumming a simple rhythm, and the client responding with the same or a complementary beat. In this sense, rhythm can be seen as a co-facilitator within therapy.

Intervention development

For this intervention, techniques were chosen based on various polyvagal-informed exercises, as well as the Rhythm 2 Recovery Model (Faulkner, 2017). Based out of Australia, Rhythm 2 Recovery is evidence-based, cited by various researchers for its use in the practice setting, and boasts that over 4,000 professionals have received training in the model (Faulkner, Wood, Ivery, & Donovan, 2012; Martin & Wood, 2017; Wood & Faulkner, 2014). It combines principles of evidence-based therapy methods with strategic drumming exercises focusing on specific themes, such as identifying strengths, clarifying values, or overcoming adversity. Key components of rhythm and reflection allow for creative expression using drums or other rhythm instruments, as well as thoughtful reflection and application of the exercises (Faulkner, 2017). In his work with trauma survivors, Faulkner discusses the critical element of creating a sense of safety for the participants. As with other modalities of trauma work, if victims do not feel safe, then

the intervention will not be effective, no matter how intricate or well-planned it may be. Related to safety is comfort in engaging with difficult feelings. Faulkner discusses the role that drums can have in facilitating a “discussion” without using words. If talking about how an experience felt proves to be too difficult, participants can instead play how they felt, or how they would imagine the feeling would sound. This can be a less threatening way for survivors of trauma to begin to reconnect and re-engage with intense emotions. Core concepts from the Rhythm 2 Recovery Model, including safety and connection, were adapted for this intervention. However, the actual activities and exercises differed in order to take a more polyvagal-informed approach. Additionally, while Rhythm 2 Recovery often uses a group drumming format, this intervention utilized individual sessions with the client and therapist. Although some of the benefits of a group may be lost, such as connecting with other survivors of trauma, an individual model was chosen due to the ability to focus more on each client’s specific needs and issues, as well as the ability to tailor each session to that individual. Five drumming sessions were conducted with each client, using a specific theme for each session (see Table A for an overview of sessions and objectives). Discussion and feedback took place after each activity, and related specifically to the client’s own trauma. Exercises such as playing a steady “grounding” rhythm were used at the end of each session, as well as a closing discussion to ensure the client felt safe leaving the session.

Methodology

Sample

The first author of this manuscript worked as a therapist at a university counseling center at the time of the research. Their client load served as the source of the sample for this study. Clients initiated contact with this particular counseling center because of a history of trauma related to interpersonal violence. This circumstance made them suitable for the study. Relying on purposive sampling, inclusion criteria required participants to be students, faculty, or staff members of the institution or its affiliates, and to have been victims of interpersonal violence, including sexual assault, dating or domestic violence, stalking, sexual harassment, or adult survivors of childhood abuse. Clients of all

genders and gender identities were eligible. Exclusion criteria included having an arrest or criminal charge related to any form of interpersonal violence, or having been found responsible for a sexual assault or harassment-related violation in a Title IX investigation.

Based on research detailed below, it was expected that six to ten participants would be sufficient for this study. This range allowed for both saturation and feasibility. As used in qualitative studies, saturation describes “the point in data collection and analysis when new incoming data produces little or no new information to address the research question” (Guest et al., 2020, p. 2). Several researchers who have relied on qualitative interviews for their data collection have found that the majority of new information had been discovered within the first six to ten interviews (Morgan et al., 2002; Guest et al., 2006; Francis et al., 2010). Therefore, fewer than six participants for this study would likely have been insufficient to generate significant and meaningful data for a thematic analysis. Consistent with this number, Guetterman (2015) discussed differences in sample size needed depending on the methodology used, and determined that as few as six could be adequate for a phenomenological approach examining participant experiences. Additionally, more than 10 participants would likely not be feasible due to time constraints and limitations within the agency, including the time required for the researcher to transcribe each interview and code the data. A total of nine participants were initially recruited, with one dropping out.

Procedures

Before any participants were recruited for the study, Institutional Review Board (IRB) approval was obtained. The administrative assistant of the counseling center in which clients were recruited gave clients the recruitment flyer and told them that if they were interested, they could inform the researcher at their therapy appointment. In order for any further recruitment efforts to take place, the client had to initiate the conversation about study participation in order to avoid even the appearance of possible coercion. Once clients expressed interest in the study during their therapy session, the researcher engaged them in the informed consent process before starting the intervention. Potential participants were given a handout with a brief description of the drumming sessions as part of the

informed consent process before agreeing to participate. As mentioned previously, this study involved the integration of drumming activities into five individual therapy sessions between the participant and researcher. Each session focused on a different theme, culminating with the participant's use of rhythm to tell their trauma experience.

Interview protocol

This study used a feasibility approach (Bowen et al., 2009) to determine the general practicality of the intervention's use, as well as the perceived acceptability and benefits gained by participants. Feasibility studies are often conducted as an initial tactic to determine whether a research project is suitable for future more rigorous research. Various methods of evaluation can support feasibility studies in answering the question "Can it work?" (Bowen et al., 2009). To help answer this question, individual interviews took place with each participant after the five drumming sessions were completed. Interviews lasted between 45–60 minutes and were audio-recorded for transcription. They were semi-structured in nature, and largely guided by the participant's responses. Consistent with the protocol for a feasibility study, participants were guided through the five session exercises, and asked about their experiences in each one. They were also asked about their thought process in choosing which instruments to play, which sounds they chose the therapist to play, and significant rhythms that they developed. Finally, participants were asked about what specific aspects or sessions they benefited from the most, and what they would have liked to see changed. The researcher asked clarifying questions throughout the interview to ensure accurate interpretation of participant accounts. Through this interview method, participants stories were told of their experience with the intervention.

Data analysis

Thematic analysis of transcribed interviews and coding of responses was conducted using a phenomenological approach. This approach is often used in social research to describe the lived experiences as told by the individuals themselves, and aims to portray the perspectives of participants as closely as possible (Denscombe, 2017). Because drumming is a uniquely individual experience, participants who complete the same intervention

may come away with different perceptions and impacts. In fact, phenomenology has been applied in several studies involving drumming and music interventions for well-being (Dingle et al., 2012; Perkins et al., 2016; Perkins & Williamson, 2014). Consistent with this methodology, open coding of transcripts allowed for the reality of participant experiences to come through, rather than the researcher relying on their own preconceptions of what might be found. Denscombe (2017) describes the necessity in phenomenology to suspend one's own beliefs about what might be found in order to provide a more accurate and "pure" description of participants' encounters with the intervention. This suspension of beliefs is accomplished by the researcher first acknowledging their own internal biases about the results hoped for, and approaching the interviews without any presumptions of participant responses. The researcher coded participant responses with the use of Nvivo 12, and conducted a thematic analysis to convey the recurring themes and sub-themes generated by the participant interviews. This process of thematic analysis was developed by Braun & Clarke (2008) to provide clear methodological guidance. With the assistance of Nvivo 12, visual representations of the data, such as a word cloud, were used in addition to reporting on themes. A report of the data that emerged from the interviews assisted in exploring the feasibility and acceptability of the study.

Positionality

The three authors of this manuscript engaged with the study in various ways. The first author served as the principal investigator, and it was their clients who served as potential study participants. That author engaged with the analysis first, with the second and third authors contributing to analysis and meaning-making, as well as providing guidance in the overall development of the project and knowledge surrounding polyvagal theory.

First author positionality: I first experienced my own incident of interpersonal violence early in my undergraduate career, which was also the initial catalyst for me to invest my time in sexual and domestic violence as a social justice issue. I first volunteered as a victim advocate at a local rape crisis center. Then, while obtaining my Master's degree in social work, I obtained a part-time job as a sexual assault counselor within a grant-funded community agency. These experiences ultimate-

ly helped in progressing my career to becoming a Licensed Independent Clinical Social Worker at the counseling center where this intervention took place with my clients. Additionally, although I have never been a drummer, I grew up with a love for music, and played violin and piano. The intersection of my personal and professional experiences with interpersonal violence, along with my musical background and passion for rhythm, ultimately helped shape my views of this project.

Second author positionality: I am a seasoned clinician and research-focused scholar with experience in psychotherapy with individuals whose histories include exposure to emotionally traumatic experiences, especially experiences with interpersonal violence. As such, I brought my theoretical awareness associated with attachment theory, systems theory, and polyvagal theory. I began reading and considering the topic of neuroscience in relation to social work practice a number of years ago. Trained in various trauma-specific techniques of psychotherapeutic intervention, including EMDR, along with my personal experiences of having participated in drumming activities in the past, I saw the potential value of the intervention when the project's first author and originator brought it to my attention. My research background includes projects using quantitative, qualitative, and mixed-methods approaches.

Third author positionality: Very early in my professional career as a clinical psychologist, I became aware of the extremely negative impact of the broad range of childhood trauma on my clients. As a recently minted psychologist in 1990, the interventions I had learned were lacking in effectiveness for my clients with the most complex problems. Intrigued and hopeful, I pursued EMDR training. Immensely helpful, but not a panacea, this was the beginning of my exploration, education, and training in what has come to be known as trauma-informed care. Integrating theoretical models such as EMDR, hypnosis, Internal Family Systems, Emotional Freedom Technique/Tapping, and the polyvagal theory with vigilance for dissociation has been crucial to my work. When I learned of drumming and trauma processing, it made sense, particularly given the alternative bilateral stimulation aspect of EMDR and tapping, and the understanding that trauma is stored in the body. When I was asked to join this dissertation project, I was intrigued and very happy to participate.

Trustworthiness / rigor

Credibility was first established by engaging in reflexivity within the memoing process, as well as self-reflection on personal biases that may be present in the study. For example, since the researcher was also the therapist conducting the therapy sessions with participants, there was the potential to seek out or encourage responses that would yield positive results for the research. By being mindful and maintaining active awareness of potential biases, credibility was increased. Additionally, during participant interviews, the researcher engaged participants and asked clarifying questions to ensure their statements were being accurately captured. As previously discussed, using a phenomenological approach in this study allowed the researcher to take a "backseat" to the participants' voices, allowing their stories to be told. Finally, a discussion in this paper of how findings relate to the broader shared human experience contributes to the element of transferability. Although not generalizable in the customarily understood sense due to the size and scope of the study, the findings of this research may be useful for other populations or in similar settings.

Results

Five main themes were generated, along with several sub-themes under each theme. See Table B for a complete listing of each theme and sub-theme. Due to space limitations, only one sub-theme for each main theme was chosen for discussion below. Pseudonyms were used for client names to protect their identity. Participant quotes were placed in italics to highlight their importance as the primary source of results.

Theme 1: Connecting with sound

Due to the nature of the intervention involving experimenting with different rhythms and sounds, it was unsurprising that all eight participants discussed the various ways they connected emotionally to different sounds. Many participants highlighted specific instruments that they connected more to, or that reminded them of specific memories in their lives.

Processing difficult emotions

Participants mentioned the ways that sound and rhythm served as a useful tool in processing emo-

tions that may be too difficult to discuss or process verbally. This finding is supported by research discussed previously, indicating that verbal processing of trauma may be more difficult for survivors due to trauma's impact on the brain (van der Kolk, 2014). Georgia specifically discussed the ways that the instruments helped in exploring feelings of anger: *"You know rain is symbolic of rebirth and growth and stuff like that, and it felt like, that is very comforting, to come out of anger and into a cool place of growth. And that is so helpful with the people I love and trust to see me angry now, that I know that they will be that place for me. It felt cool to be able to voice that, and know that that was happening. It's like doing the thing helps you to realize the feeling, and then you get to talk about the feeling, and then you realize the feeling and it goes back and forth."*

Theme 2: Insights gained

Participants spoke about general insights they gained through the intervention. Some of these insights occurred in the context of the actual drumming, while others happened later when participants processed the experience on their own, or even during the interview. Insights were divided into those related to the participants' sense of self, and those related to their trauma.

Insights related to trauma

One set of insights that participants discussed related directly to how they viewed their own trauma. Of particular interest were the ways that participants mentioned that the drumming helped to facilitate a process of giving themselves permission to feel certain emotions related to their trauma. Blaze stated: *"I remember especially feeling at the end, the word activated, definitely fair. And I remember playing the drum was the first time that I let myself be angry about the situation or like I had called a feeling I was feeling anger, but hadn't actually been, 'I want to externalize this emotional force.' And I remember how pleasant it was, in the aftermath of having done that, of being, 'Wow, hitting a drum feels great."*

Theme 3: Sense of agency

Many participants discussed the ways that the sessions helped them develop a sense of agency or empowerment with themselves. This theme was further divided into three sub-themes related to agency: agency after experiencing trauma, agency

over the decisions they made in the sessions, and having a sense of ownership of their feelings.

Ownership of feelings

Related to agency and control, participants discussed how the intervention allowed them the space to own their feelings. This points to the process of allowing oneself to feel strong emotions that may have been cut off after trauma. Georgia discussed her process of owning her feelings within the larger context of rhythm: *"Making up the pattern, the beat, the rhythm, the melody for this, was hard, but it was relying back on what I felt, and what I thought, and the kind of rhythms that already exist within being an alive human being. Like a heartbeat, or running, or stuff like that. I think that it was very much like that falling back on myself for those things, that I didn't have to use my head to divine some beautiful creative artistic thing. That it could just be me, what I felt."* This thought also explores the related sense of taking ownership of drumming as a deeply creative experience, and the freedom that comes with allowing oneself to turn inwardly and rely on intuition, rather than solely on reason or rational thought.

Theme 4: Sense of safety

Arguably the most important theme related to participants' feelings of safety. As mentioned before, if survivors of trauma do not feel safe while in therapy, making progress will be much more difficult. Several sub-themes emerged related to safety, which most participants discussed in some way.

Safety in processing trauma memories

Although "Processing Trauma Memories" was listed as a sub-theme under "Connecting with Sound," a distinguishably different sub-theme emerged related to participants feeling safe in sharing, processing, and confronting trauma memories. Katie shared some of her experiences with safety through the intervention, as well as in processing certain aspects of how she responded during one of her assaults: *"So when we talk to the deeper stuff that was probably scarier and harder to talk about, unlike if we were just doing talk therapy, I was able to connect with it more because I felt safer. I had control and there was someone else with me, so if I felt overwhelmed, I could stop. And it was in a controlled environment. I've had issues with, when one of the assaults happened, I couldn't move. And there*

was that catatonic, like not being able to move and it seemed like it always bothered me, and then we started talking about, that's a normal response. And then how it feels and venturing into that scariness, but in a safer place where I don't feel that. And in doing so, it made me feel less responsible for having done it, for that happening. I guess, because it's not something that I could control and being able to explore it again in a safer environment, but not through words."

Theme 5: Social connection

A final theme that appeared relates to the social connection that occurred throughout the sessions. Music has often been described as a social experience, and interpersonal violence can frequently leave survivors feeling isolated, though craving connection. Throughout the interviews, participants described how they felt connected to others in their personal lives, as well as a sense of connection between participant and therapist.

Connection with therapist

Researchers have shown the ways that music and rhythm can facilitate a genuine connection between those participating (Devereaux, 2017). Several participants discussed their feelings of connection within the therapeutic relationship, and their ability to discuss things in the context of drumming that they would not have otherwise. Blaze also spoke about the playfulness that occurred between themselves and the therapist while drumming: *"It's a little bit like when you feel silly dancing, and then you dance, and then it's fun, or like roller skating or bowling. They're these things that feel like there's a jumping-off you have to do into the activity, and then once you're in it, it is fun, and it is nice, and it is cool. And then I think afterwards the feeling was simply, it's called playing drums for a reason. And it felt like I had played, even if we were talking about difficult things. Even though we went deep, I felt like I got to work through it. I didn't feel like I was carrying baggage into the rest of my day."*

Making meaning

Once all the themes were gathered from participant interviews, a visual tool helped in connecting the themes and responses. A word cloud was created using Nvivo 12, which searched the word frequency of nodes (themes) created, and set to the grouping of "specializations," so that it looked for words with similar meaning, creating the words

in the cloud. In examining the word cloud, several words stand out that help make meaning of participants' experiences. The more predominant words such as "change," "going," and "activated" signify some type of movement that took place within the sessions. These words highlight participants' awareness of the progress they were able to make through the drumming sessions. The fact that "change" is the largest word in the cloud is significant, as participants identified changes they noticed in themselves as a result of the intervention. Perhaps an over-arching theme emerging from the findings is the change and movement from isolation to connection that participants felt by drumming. This sense of connection may be experienced both as internal connection with themselves and their bodies, and external connection to other people. While these experiences may be felt very differently among individuals and can take on different meanings, previous research has already demonstrated the impact that music and rhythm have on connecting humans to each other (MacIntosh, 2003; Pelletier, 2004; Bittman et al., 2001; Fancourt et al., 2016). This sense of movement may also be experienced as the participants' ability to move *through* their trauma, not just talking around it. As previously mentioned in the results section, several participants noticed a distinguishable difference in what they were able to process, share, and feel with the addition of rhythm that they were not able to experience before in talk therapy. This further reinforces the usefulness of music and rhythm to facilitate discussion without using words.

Discussion

Within the discussion section, we first provide an overview of the project's results, giving meaning to the findings. We then connect this project and its findings to previous research discussed in the literature review, as well as the findings' connection to polyvagal theory. We then discuss some of the project's limitations, and provide some personal reflections engaging with this project. Finally, implications for future research will be discussed.

Discussion of project findings

In taking a phenomenological approach, the themes found were used to tell the story of the participants' experience. Even with only eight par-

ticipants, they all discussed ways in which adding drums and rhythm in the therapeutic space was a beneficial tool within talk therapy. As mentioned in the results section, several participants spoke to the ways that they found the medium of rhythm to be more helpful than talk therapy alone in creating a safe space to process trauma. This finding is supported by previous research indicating that, for some individuals, talk therapy on its own may not be sufficient in addressing deep trauma wounds, due to trauma being stored in nonverbal areas of the brain (van der Kolk, 2014). While each participant had different comfort levels and experiences with music, even those with little or no prior experience mentioned the benefits of trying something new, getting out of their comfort zone, and allowing themselves to be creative. A few participants who seemed somewhat hesitant in the beginning, and unsure of how or what to play, were able to “tap in” to their creative selves throughout the course of the sessions. Several participants spoke to this element of creativity, which supports Amir’s (2004) previous findings on improvisational music therapy and its ability to assist survivors of childhood trauma in processing unresolved memories. In one interview, Georgia discussed this aspect of creativity, along with the freedom that it brings: *“I’m a creative person in the sense that I can create knitting or crochet or something like that, but it feels less artistic. But this is a thing that I thought would be very artistic, that ended up being whatever I wanted it to be. So being able to have the physical thing, and kind of think of the tether of, this is knitting, or this is crocheting, the physical aspect of... I can put myself into the instrument. It was very cool, to channel the emotions.”*

Another aspect of importance within the intervention was the sense of “lightening” that it brought to therapy. Talking about one’s deep traumas can be tremendously difficult and takes incredible vulnerability, courage, and bravery. Having the instruments in the room served as a metaphorical and physical vessel for holding heavy and dark memories and emotions. In fact, one exercise in the intervention invited participants to use the drums as a container for their fears related to their trauma, and imagining themselves placing their fears into the drum with every beat. Having a physical space to hold intense feelings could be a very useful and important addition within trauma therapy. Additionally, this lightening was seen throughout the

sessions in the form of play. As reflected in the sub-theme of “Freedom to Experiment,” participants recognized that there was no right or wrong way to play, which took some pressure off their musical abilities. This degree of expression and freedom may not otherwise exist in traditional talk therapy. This also gives room to explore intense memories and emotions in a way that feels less threatening or dangerous. Talk therapy, especially when trauma enters the room, can often be thought of as heavy and serious. This project demonstrated that it does not necessarily have to be either of those in order to make progress.

Relationship to previous research

Several of the themes and sub-themes that were found in this project share similarities to previous studies mentioned in the literature review. Most notably, Faulkner’s (2017) Rhythm2Recovery model stresses the component of emotional safety when engaging in rhythm exercises, as well as rhythm’s ability to encourage difficult discussion and communication without words. This model’s ability to facilitate participant comfort in sharing intense memories and feelings is echoed in this project.

The theme of social connection is also supported by previous research. MacIntosh’s (2003) “music and healing workshops” facilitated increased connection and empathy among participants in group drumming circles. Several other researchers have studied drumming circles among various populations, and their ability to encourage connection and decrease participants’ sense of isolation (Bensimon, Amir, & Wolf, 2008; Mungas & Silverman, 2014; Perkins et al., 2016). Although this project used an individual rather than a group therapy approach, several participants reflected on improvements they noticed within their personal relationships, as well as their connection with the therapist.

Connection to polyvagal theory

In addition to the aspect of social connection, this project supported other aspects of polyvagal theory. As previously mentioned, most participants discussed some aspect of safety within the project, both in being free to experiment and play, as well as safety in sharing and processing deep trauma wounds. This element of safety is a central com-

ponent of polyvagal theory. The social engagement system allows humans to connect and thrive as a species, and it can be engaged only within the context of safety (Porges, 2018). When any type of danger is detected, whether real or perceived, feeling safe becomes much more difficult, particularly in the therapy room when vulnerability is often required. Several polyvagal-informed therapists have discussed the use of other creative modalities to re-establish a sense of safety in traumatized individuals, including dance, yoga, and tapping (Gray, 2018; Ogden, 2018). As this intervention shows, rhythm may be another intervention that can facilitate a sense of safety.

Limitations

One limitation related to the research was that the researcher in charge of project design and data analysis was also the therapist conducting the actual project implementation with participants. Therefore, the risk of researcher bias was present due to the potential to seek only “favorable” results. Attempts were made in taking a phenomenological approach to have participants’ voices come through, rather than the researcher’s own thoughts or opinions. Additionally, as an initial feasibility study, the research questions were more open-ended as a way of seeking what was useful and helpful about the study. A further related limitation was that the researcher was the sole individual who analyzed the transcribed interviews for coding. Due to time constraints, efforts to recruit additional researchers for this task were foregone. However, further studies may be strengthened by having at least two individuals code results, which could then be compared and/or contrasted.

Researcher reflections

As a therapist experienced in treating trauma, all the participants in this study were already established clients of the primary researcher’s, some of whom they had worked with for several years before engaging in the project. Therefore, a level of trust and rapport had already been built with clients before they agreed to participate in this project. Due to the level of trust required for trauma survivors to try something brand new in therapy, this project may not have worked as well if it had been conducted with clients who did not have a therapeutic relationship already established with the therapist. Additionally, because the clients

had already engaged in some type of trauma therapy before starting the research project, various lengths of time had passed since their traumas had occurred. This study may have yielded different results if done with clients who were brand new to any type of therapy, or whose trauma was very recent.

An additional reflection takes into account the issues that may arise from being both a research and clinically-focused intervention. This intervention, as with any type of therapy, is not a panacea, and may not be suitable for some clients, or at all times in a client’s journey. Clients’ own mental stability should be considered in regards to their ability to engage in the project. During the second session with one participant who started the study, it was mutually agreed that it would not be in her best interest to continue due to a change in mental health needs that overshadowed the importance of completing the project. Therefore, ethical issues may arise with participants’ needs, and their mental and emotional well-being must trump any desire the researcher or clinician may have to continue the study with all participants who started the intervention.

Implications for future research

As a feasibility study, this project laid a solid foundation for future more rigorous studies. Strategies to strengthen future studies could include engaging in member checking after the interviews are coded to ensure their responses were accurately reflected in the results. Utilizing a mixed-methods approach would be useful in gathering more data to analyze, such as adding a short questionnaire or existing standardized scale at various points in the intervention. One approach could specifically focus on monitoring the heart rate at various points throughout the intervention, such as measuring differences in heart rate before, during, and after sessions. Polyvagal theory discusses the importance of the vagal brake in regulating the nervous system, highlighting the significance of heart rate variability in returning to a sense of safety after threat is experienced (Porges, 1995). One study involving college women showed that participants who had experienced childhood abuse had more difficulty regulating their heart rate than those with no abuse histories (Dale et al., 2018). Therefore, it may be of interest to see if this intervention had any impact on participants’ heart rate.

Additionally, this study focused on victims of interpersonal violence who were all college students at a single university. Expanding the study to other universities, or to other populations outside of college, could help generalize findings across settings. The positive results of this small study should not stop here, as many more victims of trauma could experience the power of rhythm with further research. Drumming as a therapeutic intervention for survivors of trauma can serve to be an important addition to other polyvagal-informed modalities.

Conclusion

This paper described the importance of integrating body-focused interventions into therapy for victims of interpersonal violence. This therapeutic drumming feasibility study provides some foundational evidence for its usefulness among interpersonal trauma survivors, particularly as it relates to

their ability to feel more connected to their bodies and to other humans. The drumming sessions provided a safe, creative environment for participants to express deep wounds in the context of relationship, even without using words. Given that trauma memories are often “held in the body” rather than encoded in language, drumming provides a “way in” not available through the use of talk therapy. Integrating such visceral experiences into therapy may not currently be commonplace, but research is pointing to increased justification of its importance in the therapy room. Conducting further robust studies will serve to strengthen the argument that involving the body in trauma therapy should be the standard, rather than the exception.

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Appendix

Table A. List of session topics and objectives

Session	Topic	Objectives
Session 1	<i>Introduction / Safety</i>	Familiarize clients to the drums and to concepts of polyvagal theory and the different states
Session 2	<i>Boundaries</i>	Use rhythm to explore boundary violations related to trauma
Session 3	<i>Exploring fear and anger</i>	Use drums as a “container” for intense emotions and explore potential resolutions for fear and anger
Session 4	<i>Strengths / Resilience</i>	Identify rhythms for strengths that clients would like to highlight; Explore ways client has had to adapt to adversity after trauma
Session 5	<i>Drumming your trauma narrative</i>	Development of rhythm story reflecting the client’s healing journey

Table B. Themes Generated from Participant Interviews

Theme	Sub-Theme
■ <i>Connecting with sound</i>	<ul style="list-style-type: none"> – Communication through sound – Emotional regulation – Processing difficult emotions – Processing trauma Memories – Symbolizing emotions through sound
■ <i>Insights gained</i>	<ul style="list-style-type: none"> – Insights related to self – Insights related to trauma
■ <i>Sense of agency</i>	<ul style="list-style-type: none"> – Agency after trauma – Agency over decisions made – Ownership of feelings
■ <i>Sense of safety</i>	<ul style="list-style-type: none"> – Comfort in sharing – Freedom to experiment – Memories of safety – Safety in processing trauma memories
■ <i>Social connection</i>	<ul style="list-style-type: none"> – Connection to others – Connection with therapist